

ODISHA JOINT ENTRANCE EXAMINATION-2016
(OJEE-2016)

INFORMATION BROCHURE



ADMISSION TO
FIRST YEAR DEGREE COURSES IN
HOMEOPATHY/AYURVEDA/PHARMACY AND
INTEGRATED MBA(5YEARS)
LATERAL ADMISSION TO SECOND YEAR (THIRD SEMESTER)
ENGINEERING/TECHNOLOGY/PHARMACY/ MCA AND
FIRST YEAR MASTERS DEGREE COURSES IN
COMPUTER APPLICATION (MCA), BUSINESS ADMINISTRATION (MBA),
M TECH./ M PHARM/ M ARCH./ M PLAN

DATE OF EXAMINATION 8th MAY 2016

ODISHA JOINT ENTRANCE EXAMINATION – 2016
JEE CELL, GANDAMUNADA, KHANDAGIRI
DIST- KHURDA, BHUBANESWAR
ODISHA – 751030

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**PROGRAMME FOR
JOINT ENTRANCE EXAMINATION - 2016, ODISHA
TABLE-I**

Entrance Test for B. Pharm/ BHMS/ BAMS/ B. Tech (Lateral Entry) / B. Pharm (Lateral Entry) / PGAT for M. Tech / M. Tech (Part Time) / M. Arch and M. Pharm / MCA / MCA (Lateral Entry) / MBA / Integrated MBA.				
Date	1st Sitting	2ND SITTING	3RD Sitting	
08.05.2016 (Sunday)	9.00 AM to 11.00 AM	12.00 Noon to 1.00 PM	2.30 PM to 3.30 PM	2.30 PM to 4.30 PM
	<i>Physics / Chemistry (for 1st year Pharmacy/ /Homoeopathy/ Ayurveda)/ Test for MBA/ Test for Lateral Entry (2nd Year) (Diploma) to Engineering / Technology</i>	<i>Mathematics for 1st year Pharmacy/ Test for B Sc. (+3 Sc.) Lateral Entry to Engineering (2nd Year) / Test for LE (PHARMA)/ Test for M PHARM / Integrated MBA /M PLAN</i>	<i>Biology for 1st year Pharmacy/ Homoeopathy/ Ayurveda</i>	<i>Test for 1st year MCA / Test for Lateral Entry (2nd Year) to MCA / Test for PGAT (Post Graduate Admission Test) for M. Tech / M. Tech (Part Time) / M. Arch</i>

The salient features of The ODISHA Professional Educational Institutions (Regulation of Admission and Fixation of Fee) Act, 2007 are as follows.

* **Methods of admission in technical and professional educational institutions:** Subject to provisions of this Act, admission of students in all the technical and private professional educational institutions, Government institutions and sponsored institutions to all seats including lateral entry seats, shall be made through JEE conducted by the Policy Planning Body followed by counselling in order of merit, in accordance with such procedure as recommended by the said body and approved by the Government of Odisha in consonance with the provisions of OPEI(RA&FF) Act 2007.

* **Prohibition of Capitation fee :** No capitation fee shall be collected by a professional educational institution, sponsored institution or by any person who is in charge of the management of such institution, from any candidate in consideration of his admission to or continuance in any course of study or his promotion to higher class, in such institution under the management.

Where the Policy Planning Body on receipt of any complaint or is otherwise satisfied that the management of such institution or any person who is in charge of the management of such institution has contravened the provisions of the previous section / para, the Body may, after making due enquiry in the manner prescribed, recommend to the Government for imposition of fine not exceeding Rupees Ten Lakhs against the management of such institution for such contravention.

Note: “The general public / guardian / parents and students intended to take admission in to different Professional and Technical Institutions of Odisha are hereby informed through this Information Brochure that if they have any complain regarding admission process / procedure, they can file complain in shape of affidavit with supporting authenticated documents to the member Secretary PPB-cum-Principal, Bhubananda Odisha School of Engineering (BOSE), Cuttack who in turn will place the matter to PPB (Policy Planning Body) for disposal under the provisions of ODISHA Professional Educational Institutions (Regulation of Admission and Fixation of Fee), Act, 2007”.

IMPORTANT NOTES FOR THE APPLICANT

“ONE CANDIDATE CAN APPLY ONLY ONE APPLICATION”

Online Student Registration System

Please choose the option: Odisha joint Entrance Examination-2016

INFORMATION REGARDING CHOOSING FORM FOR APPROPRIATE SUBJECT

Choose the correct option and select the correct entrance you want to appear among the available options.

Once the candidate clicks ‘APPLICATION FORM FOR OJEE-2016’, SIX links will appear as “A, B, C, D, E and F”

FORM

- A) For BAMS & BHMS/ PHARMACY/PHARMACY AND BAMS&BHMS, (COURSE CODE- 01,02,03) Table- 2
- B) For LE (Engineering, Pharma) Table-4 (QULAFYING CODE- 51 to 76) & B. Sc.(LE) Table-5 (COURSE CODE- 50)
- C) For M.C.A. / M.B.A/ LE-MCA. (COURSE CODE- 04,05,06) Table- 3 A
- D) For PGAT (M.Tech/M.Tech(PT)/M.Arch/M.Pharm). (TEST CODE- 16 TO 29)
Table - 6
- E) For Combination
Table – 3 B
 - 1. MBA and MCA (Course Code- 10)
 - 2. MBA and LE-MCA (Course Code- 11)
 - 3. MBA and PGAT (Test Code- 32 to 45) Table-3C
- F) For Integrated MBA(5years) (Course Code - 31) Table - 7

❖ **Cost of application for FORM – A, B, C, D, F Rs 1000/-.**

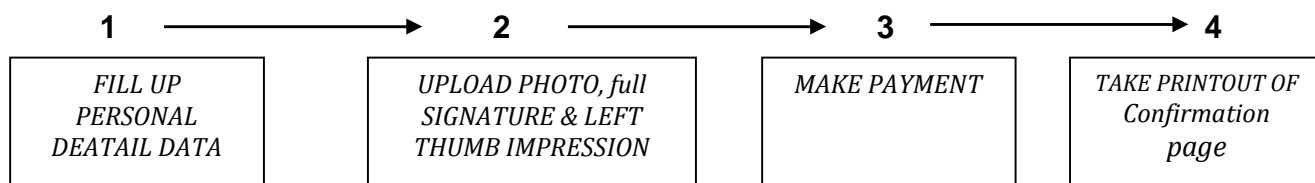
❖ **Cost of Application for FORM – E Rs 1500/-.**

1. The candidates are required to apply only online as per procedure detailed below.
 - i) Candidates can apply for OJEE - 2016 only "Online".
 - ii) Information Brochure can be downloaded from the website [www.ojee.nic.in/
www.odishajee.com](http://www.ojee.nic.in/www.odishajee.com).
 - iii) Online submission of Application Form may be made by accessing OJEE-2016 website [www.ojee.nic.in / www.odishajee.com](http://www.ojee.nic.in/www.odishajee.com).
 - iv) Instructions for Online submission of Application Form are available in Information Brochure and on the website [www.ojee.nic.in / www.odishajee.com](http://www.ojee.nic.in/www.odishajee.com).
 - v) Candidates must follow the instructions strictly as given in the Information Brochure available on the website ([www.ojee.nic.in / www.odishajee.com](http://www.ojee.nic.in/www.odishajee.com)). Candidates not complying with the instructions shall summarily be disqualified.
 - vi) Candidates must retain the following documents with them as reference for future correspondence.
 - (a) Printouts of the computer generated Confirmation Page of the Application Form.
 - (b) Proof of fee payment.
 - vii) The fee can be remitted through either of the following ways:
 - (a) By Debit Card / credit card (VISA / MASTER / Maestro cards/internet banking).
 - OR
 - (b) Remittance through e-Challan by deposit in OJEE-2016 Bank Account with State Bank of India (State Bank Collect)
2. The candidates should provide all the authentic details while filling up the online form. On submission of details, Registration Number shall be generated.
3. **Candidate has to fill the particulars online and also upload his/her photograph, Full Signature and left thumb impression. Due to above, the provision of sending hard copy of the application i.e. confirmation page to the JEE office is not necessary. Therefore the candidates are advised not to send hard copy of the application i.e. confirmation page to OJEE office.**
4. However, the candidates are advised to retain hard copy of the application i.e. confirmation page along with proof of money transfer for future reference or correspondence, if any.
5. Applicant must quote the ten digit registration number/ Application number generated after submission of all his/her required personal data as a reference in all his/her future correspondence with OJEE-2016.
6. Application must be completed in all respect. **Incomplete / unsuccessful submission of application will lead to outright rejection. Completed application means: Registration, uploading images and pay the fee.**
7. **Options such as Category, Choice of place of examination centre and Reservation & Sub-reservation type once given by the applicant in the application form cannot be changed afterwards under any circumstances.**
8. Applicant should give options only with respect to category S(state), ZZ(outside state of Odisha), NRI(non resident indian) and Reservation(SC,ST), sub-reservation type (PC or PwD/GC/WO/ES/TFW) that he/she can substantiate with documentary evidences during document verification / counselling. There is no provision of up loading any proof of these categories during online submission.

9. Candidates are allowed to submit only one application form. Multiple applications for a particular stream of a candidate are liable to be rejected.
10. After submission of an application, no options can be changed at a later stage.
11. Application fee once paid is non-refundable.
12. Candidates may check the status of their application on OJEE - 2016 website by giving the registration number/ application number(this is your user id) and password that you have created during registration.
13. The cost of application is non-refundable.
14. Any dispute arising out of OJEE-2016 shall only be settled and decided under the jurisdiction of Hon'ble High Court of Odisha.
15. Applicant should not upload any document along with the application form to support his/her claim for reservation/category.
16. **Claim for admission will be rejected if the candidate cannot submit the original certificates, mark sheets, other necessary documents at the time of document verification or if one has filled the form wrongly.**
17. **Admission may be cancelled at any time, if certificates/ mark sheets/ other documents are found to be forged or manipulated. A candidate will not be considered for admission if he/she fails to substantiate the claim with respect to reservation, category, nativity, date of birth, qualification etc.**
18. **Facility of submission of application form, payment of fee and printing of the Computer Generated Confirmation Page will be ceased at 05.00 PM on the last day of online-application form fill-up. Hence, candidates are required to complete the process within the prescribed duration.**

PLEASE FOLLOW THE INSTRUCTIONS GIVEN BELOW BEFORE SUBMITTING THE ON-LINE APPLICATION FORM: - Please Refer Section - 5

- (a) You have to follow all the instructions in filling up the form and have gone through the important notes carefully.
- (b) You have to retain a printout of the CONFIRMATION PAGE.
Once duly filled in application form was submitted, no further change will be entertained under any circumstances.



MODE OF SUBMISSION OF APPLICATION FORM AND FEE DETAILS: - Please Refer Section - 5

- i) A candidate can apply for the Odisha Joint Entrance Examination (OJEE-2016) through on-line process only by visiting to the website www.ojee.nic.in / www.odishajee.com.
- ii) The information desired to be filled in the online application may be kept ready.
- iii) Before submission of application form, make the following preparations:
 - Decide the mode of payment of fee.
 - Through Debit Card / credit card (VISA/ MASTER/ Maestro cards/ internet banking)/ using on-line gateway payment facility.

OR

- Depositing with State Bank of India through e-challan, which can be obtained after filling on line application(State Bank collect).
- (a) If decided to pay fee through Debit card/ credit card (VISA / MASTER / Maestro cards/ internet banking) check the validity of the Card and keep it ready with you while logging on to website for submitting application form and generation of Confirmation Page. Final print out of confirmation page will be available after 2 working days of fee payment. If you are facing any problem please contact JEE Cell.
- (b) If decided to pay fee in the off-line mode, choose the Bank for depositing the Fee through e-challan after completing on line application form fill up. There will be two copies of the e-challan:- (1) Bank Copy, (2) Candidate copy - all printed in a single page.
- (c) After Depositing Fee in the Bank by using e-challan, candidate has to log in again to take print out of the confirmation page.
Final confirmation page can be printed after 2 working days of payment.
If you are unable to print, please contact OJEE cell for a clarification.
Fee Details for submission of Application Form are as follows:
 - ❖ **Cost of Application FORM A, B, C, D, F – single examination Rs 1000/-.**
 - ❖ **Cost of Application for combination papers , E – (MBA & M TECH, MBA & MCA, MBA & LE-MCA) - Rs 1500/-.**

NOTE:

- **The candidates must note that after submission of the application form it can not be withdrawn. Claims for refund of application fee will not be entertained under any circumstances.**

GENERAL INFORMATION

SL No.	Interested to Study	Entrance Test to Appear
1	BAMS/BHMS	(Physics, Chemistry & Biology) of +2 science
2	B. Pharm	(Physics, Chemistry, Biology or / & Mathematics) of +2 science
3	MBA	MBA Test
4	Integrated MBA	Integrated MBA Test
5	MCA	MCA Test
6	LE – MCA	MCA – LE Test
7	B.Sc (LE)	B.Sc (LE) Test (Physics, Chemistry & Mathematics)
8	B. Tech (Second Year Lateral Entry)	Lateral Entry Test (Engg. Mechanics, Basic Electrical Engg. & Engg Mathematics)
9	B.Pharm (LE)	Based on Course of D. Pharm
10	M. Tech	Branch you have opted & Engineering Mathematics & Reasoning Ref. Table-12 for Branch of Engg. you have graduated, question to choose for test and which branches you are eligible to study M Tech.
11	M. Pharm	Course of B. Pharm
12	M. Arch	B. Arch & Engineering Mathematics & Reasoning
13	M. Plan	Architectural Conceptual Question & Reasoning

MARK CRITERIA FOR ADMISSION TO DIFFERENT COURSES

SL NO	STREAM	GENERAL	SC, ST	SUBJECT
1	B TECH CANDIDATE SHOULD PASS THROUGH ANY ONE CRITERIA	45%	40%	1.PHYSICS, MATHEMATICS, ANY ONE OF (CHEMISTRY, BIOLOGY, BIOTECH, TECHNICAL VOCATIONAL SUB, ELECTRONICS, C.S, IT, STATISTICS, GEOLOGY) OR 2#. A. LANGUAGE B. PHYSICS, C. MATHEMATICS, D. ANY ONE (CHEM, BIOLOGY, BIOTECH, TECHNICAL VOCATIONAL SUBJECT), E. ANY OTHER SUBJECT
2	B ARCH	50 %	50 %	MATHEMATICS AS A CUMPOLSORY PAPER AT 10 +2 LEVEL AND AVERAGE IS TAKEN ON SUBJECTS MENTIONED IN CONDITION 2#.
3	B PLAN	45%	40%	SAME AS B TECH

4	B PHARM	45%	40%	1.PHYSICS, CHEMISTRY, ANY ONE OF (MATHEMATICS, BIOLOGY, BIOTECH, TECHNICAL VOCATIONAL SUB, ELECTRONICS, C.S, IT, STATISTICS, GEOLOGY)
5	LE TECH	45%	40%	DIPLOMA
6	LE PHARM	45%	40%	DIPLOMA IN PHARMACY
7	MBA	50%	45%	GRADUATION LEVEL
8	MCA	50%	45%	BACHELOR DEGREE IN ANY STREAM 3 YEARS DURATION MUST HAVE PASSED MATHEMATICS AT 12 TH LEVEL OR AT GRADUATION LEVEL BUSINESS MATHEMATICS IS NOT ALLOWED
9	LE MCA	50%	45%	BACHELOR DEGREE of 3 YEARS DURATION in BCA, BSc (IT/CS/IST/ITM), MUST HAVE PASSED MATHEMATICS AT 12 TH LEVEL OR AT GRADUATION LEVEL BUSINESS MATHEMATICS IS NOT ALLOWED
10	Integrated MBA(5years)	45%	40%	10 +2 LEVEL all streams
11	M TECH/ M ARCH/ M PLAN/ M PHARM	50%	45%	As per Table-12 of Information Brochure (OJEE-2015) LEVEL
12	B SC LE	45%	40%	PCM OR PCB AT GRADUATION LEVEL

RESERVATION FOR DIFFERENT STRAEMS IN DIFFERENT CATEGORY

	COURSES	All Values in Percentage							
		SC	ST	GC	PC/PwD	ES	TFW	WOMEN	OL
1	B. TECH / B. PLAN	8	12	5	3	3	5	30	3 (Govt. Institute only)
2	B. ARCH	8	12	5	3	3	0	30	3 (Govt. Institute only)
3	PGAT	8	12	0	0	0	0	0	0
4	B PHARMA	8	12	5	3	0	5	0	0
5	MCA	8	12	5	3	0	0	30	0
6	MBA / Integrated MBA(5years)	8	12	5	3	0	0	30	0
7	LE TECH / LE PHARM	0	0	0	0	0	5	0	0
8	LE MCA	0	0	0	0	0	0	0	0
9	INTEGRATED MSC	8	12	0	0	0	0	0	0

Nativity certificate of Odisha is mandatory for taking admission against any reserve category along with other relevant certificate. To avail Women quota admission, only nativity certificate is required and it is mandatory (non submission of nativity certificate automatically cancels Women Quota seat).

- 1.1 **The Odisha Joint Entrance Examination-2016 will be held on Sunday, 8th May, 2016 as per TABLE-I.**
- 1.2 **A single application form is sufficient for any possible combination of courses to be opted for admission into 1st year Pharmacy/ BAMS & BHMS. Similarly, a single application form is sufficient for any possible combination of courses to be opted for admission into 1st year MBA/MCA, MBA/MCA LE and MBA/MTECH(M ARCH, M PHARM). A single application form is sufficient for any possible combination of courses to be opted for admission into 2nd year Engineering/Pharmacy /LE-MCA. A single application form is required for Masters degree in Applied Management (Integrated MBA(5years)*).**

Integrated MBA(5years)*: (Admission to Integrated MBA(5years) is subject to approval of the course by AICTE/UGC/Govt. of Odisha/ Govt. of India/BPUT/Other University of the state).

- 1.3 For any future correspondence, the Registration Number/Application number generated after online form fill-up should be mentioned. This is also required to mention while paying your examination fee. This number is your user id to login.
- 1.4 All the Admit cards will be uploaded at OJEE website from 20th - 25th April 2016. The candidate has to download two copies of the admit card from the OJEE website which must be endorsed by the Invigilator of the examination centre for allowing the candidate to appear the exam.

If an applicant fails to take print out of Admit Card from the OJEE-2016 website for the examination by April 25, 2016, then he/she must contact OJEE-2016 office immediately before 30th April, 2016.

If the candidate desires to change any information printed on the Admit card, he/she has to contact OJEE-2016 office immediately after taking the print out of the Admit Card before 30th April, 2016.

Both the download copies of the admit cards should be signed by the invigilator during examination and one copy must be submitted at the examination hall and other should be retained by the candidate. However the submitted admit card may be examined at a later stage to validate the authenticity.

The candidate has to keep the Admit card duly signed by invigilator till he/she takes final admission in the University /College/Institution.

1.5 **Availability of Courses:**

OJEE-2016 will be conducted to draw the merit list of successful candidates for admission into:

- (i) B. Pharm. course in the colleges as per list given in Table - 13 for the previous year as an indicator.
- (ii) MCA course and MCA under lateral entry scheme in the colleges / institutes as per list

given in Table – 14 & 15 for previous the year as an indicator.

- (iii) 3rd semester of Engineering / Technology and Pharmacy stream for Diploma holders under lateral entry scheme and 3rd semester of Engineering / Technology stream for B.Sc. / +3 Sc. with Mathematics as a subject in +2 level under lateral entry scheme. B. SC./ +3 Sc students are considered for admission only on availability of vacancy after Diploma LE admission. The total number of seats will be notified during counseling process.
- (iv) MBA course in the colleges/ institutes as per list given in Table – 16 & 17 for the previous year as an indicator.
- (v) The list of colleges / Institute offering for M.Tech and M.Arch as per list given in Table - 19 for the previous year as an indicator.
- (vi) The list of colleges / Institute offering for M.Pharm as per list given in Table – 20 for the previous year as an indicator.
- (vii) Integrated MBA(5years), the details of the colleges offering these courses will be given during counseling after due approval from AICTE / UGC/Govt. of Odisha / BPUT / Other University of the state.
- (viii) Bachelor of Homoeopathic Medicine and Surgery (BHMS) and Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree courses. The details of the colleges offering these courses will be given during counseling after due approval from Central council of Homoeopathy or central council of Indian Medicine and Government of Odisha.
- (ix) Two supernumerary seats will be given to J & K applicants in all the AICTE/UGC approved colleges.

Note: List of Colleges/Institutes/University and availability of seats therein are for previous year and this should be used for a reference or as an indicator.

1.6 Fee Structure:

1.6.1. Fees payable to colleges/institutes/universities:

Fees payable to colleges/institutes/universities at the time of admission will be decided by the competent authority. The same may also be published in OJEE website during counselling after approval by Government of Odisha.

1.7. Age limit:

The Government of Odisha will not be responsible, wherever there is no age limit for taking admission (as mentioned in the eligibility criteria vide Section 3) for any regulation of service where such requirement for age exists. The candidate should take admission at his / her own risk as regards to age.

1.8. Medical Fitness:

OJEE will not be responsible if a candidate faces difficulty in employment on medical ground. Candidates claiming reservation under physically challenged category will have to go through a Medical Board (Clause 2.1.4). The decision of the Medical Board will be final and binding.

1.9. Merit List:

Separate merit list for all qualifying candidates shall be drawn on the basis of OJEE- 2016 results in the following manner.

1. One list for candidates seeking admission to Pharmacy (B.Pharm) degree course on

- the basis of marks obtained either in Physics, Chemistry and Mathematics or in Physics, Chemistry and Biology whichever is higher.
2. One list for candidates seeking admission to Pharmacy (BAMS/BHMS) degree course on the basis of marks obtained in Physics, Chemistry and Biology.
 3. One list for candidates of diploma streams seeking admission under Lateral Entry scheme to engineering and technology (LE in B.Tech) on the basis of marks obtained in diploma test in engineering/technology.
 4. One list for candidates of diploma streams seeking admission under Lateral Entry scheme to Pharmacy (LE in B. Pharm) on the basis of marks obtained in diploma test in Pharmacy.
 5. One list for candidates of B.Sc. or +3 Sc. **(should have passed Mathematics as a subject in +2 level)** streams seeking admission under lateral entry scheme to engineering / technology (LE in B.Tech) on the basis of marks obtained in +3 Sc / B.Sc test.
 6. One list for candidates seeking admission to MCA courses will be on basis of marks obtained in MCA test.
 7. One list for candidates seeking admission under Lateral Entry scheme to MCA on the basis of marks obtained in MCA – LE test.
 8. One list for candidate seeking admission to MBA will be on the basis of marks obtained in MBA test.
 9. One list for candidates seeking admission to M. Tech course will be on basis of marks obtained in PGAT test.
 10. One list for candidates seeking admission to M. Pharm course will be on basis of marks obtained in PGAT test.
 11. One list for candidates seeking admission to M. Arch course will be on basis of marks obtained in PGAT test.
 12. One list for candidates seeking admission to Integrated MBA(5years) on the basis of marks obtained in Integrated MBA test.
 13. In addition, separate merit lists will also be drawn for candidates qualifying under each of the reservation categories. Each successful candidate shall be given a rank card, which he/she has to download from OJEE-2016 website.
 14. One list for candidates seeking admission to M. Plan course will be on basis of marks obtained in PGAT test for M Plan.

* There is no lateral entry admission to B architecture course as per Council of Architecture norms.

* **Admission to Integrated MBA(5years) is subject to approval of the course by AICTE/UGC/Govt. of Odisha/ Govt. of India/BPUT/Other University of the state.**

2. **Categories: Category and Reservation mentioned here are rules at present. It may change as per Government order.**

2.1. **Odisha State Category (S- Category)**

For admission to colleges under Odisha State Category (**S- Category**) one has to satisfy at least one of the following three criteria:-

- (a) The candidate must have passed/appeared 10+2 examination from any of the recognized institution in the State of Odisha for Bachelor's Degree. The candidate must have passed/appeared +3 Sc / B.Sc. / BCA / B.Tech / B.Pharm / B.Arch/ Bachelor degree for Masters Degree.
- (b) Parents of the candidate other than (a) must be native of Odisha. To claim benefit under this category, a candidate shall have to furnish at the time of document verification a "resident/ nativity certificate", in prescribed form (Appendix-I) from a Revenue Officer not below the rank of Tahasildar of the area to which his/her parents belong as native. The candidate has to submit the nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016.
- (c) Sons / daughters / spouse of the employees of Government of Odisha / Govt. of India/Govt. of Odisha Undertakings/Govt. of India undertakings, serving in the State of Odisha at the time of application. To claim the benefits under this category, candidate has to submit a certificate from the employer of his/her parents/spouse in the prescribed form (Appendix-II) at the time of document verification. The candidate has to submit Appendix-II issued not earlier than January 2016.
- (d) Besides above , the reservation facility is also applicable to the to the Children / wards of All India Civil Service Officers serving in the State of Odisha at par with the natives of Odisha except the reservations being extended to ST,SC and SEBC categories so far as admission to Professional / Technical Institutions in the State is concerned.

Candidates belonging to 'S category' will be eligible for admission on the basis of their rank in the merit list to Government & Private colleges and lateral entry (LE). Outside state candidates(zz) will be considered only for Private colleges.

Reservation of Seats under State Categories:

The reservation of seats in different colleges under various categories will be as per the policy of the Government of Odisha. **The percentage of seats to be reserved for different categories are subject to change and the decision of the State Government in this regard shall be final and binding on the candidate. All Reservations are applicable to natives of Odisha State only and they must produce resident/ Nativity certificate in Appendix – I from Odisha State during document verification.**

2.1.1 At present **8% seats in all colleges are reserved for candidates belonging to Schedule Caste by birth (not by marriage or adoption). 12% seats in all colleges are reserved for candidates belonging to Schedule Tribe by birth (not by marriage or adoption).**

Separate merit lists will be drawn up for each reserved category. If eligible candidates belonging to a reserved category are not available, seats can be filled up by the candidates belonging to the general category.

2.1.2. Candidates applying for SC/ST reserved category shall furnish SC/ST certificate from the Tahasildar of the place of birth in Odisha at the time of document verification in the format given in this brochure (Appendix - III). The candidate has to submit the Cast certificate in the prescribed format i.e., Appendix-III issued not earlier than January 2016.

NOTE : Scheduled Caste/Scheduled Tribe persons who have migrated from their state of origin to another state for the purpose of seeking education, employment etc., will be deemed to be scheduled caste/tribe of the state of their origin and will be entitled to derive benefits from the state of origin and not from the state to which they have migrated. (Vide Govt. India Letter No. BC/160 14.1.82 SC & BCD/ dated 22nd Feb, 1985). Thus, SC/ST candidates from Odisha who are staying outside the State have to produce SC/ST certificate from the competent authority of Odisha State during document verification.

2.1.3. At present 5% of seats are reserved for children of Green Card holders for B.Tech / B.Arch. / B.Pharm / MCA/ MBA /Integrated MBA(5years). Candidates applying under Green Card category shall furnish the Green card of their parents issued by Family Welfare Department, **Government of Odisha/any other appropriate authority**, in original at the time of document verification. The name, date of birth of the candidate along with the parents' names should match with those mentioned in 10th class pass certificate. **If in future it is found that the green card has been obtained by providing wrong information or suppressing facts, tampered, the card holder will be deprived of the facilities already obtained and will be liable for legal punitive action.** This reservation for Green Card is not applicable to PGAT (M.Tech/M.Pharm/M.Arch/ M Plan) programmes.

2.1.4. At present 3% of seats are reserved for Physically Challenged or Person with Disability candidates for admission to B.Tech / B. Arch/ MBA / MCA / B. Pharm / Integrated MBA(5years)* / courses. **The candidates with 40% disabilities in consonance with section-39 of the Persons with Disabilities (Equal opportunities, Protection of Rights and Full participation) Act, 1995** are eligible to be considered under Physically Challenged Category for admission to B.Tech / B. Arch/ MBA / MCA / B. Pharm / Integrated MBA(5years)* / courses.

The medical standard of PC category candidates will be decided by a medical board specifically constituted with Senior Professors of the premier medical college and hospital: SCB Medical College, Cuttack, and Chairman OJEE-2016 or his representative under the Chairmanship of Principal, SCB Medical College or his nominee, that they are eligible to be categorized as Physically Challenged candidates and capable of undergoing each part of the requirements for B.Tech / B. Arch / MBA / MCA / B. Pharm / Integrated MBA(5years)(also it is valid for courses included for counselling later on).

The decision of this Board will be final and binding. Percentage and type of disability will be declared by Medical Board. Based on this data, admission will be made. Any case if a candidate is declared not to be physically challenged or disable, he/she will automatically be considered as an unreserved candidate and eligibility will follow as per norm.

They SHOULD NOT therefore, submit along with the application form any medical certificate to the effect that they are Physically Challenged. But they are advised to keep copy of their Physical Challenged certificate issued from competent authority in examination hall.

Provisions for Persons With Disabilities

- The candidates with disability should fill in the type and percentages of disability correctly in the online application form for OJEE 2016(if any field given, otherwise no need).
- Only the candidates, who have 40% or more disability, will be provided Scribe/ Reader on the request of the candidate.
- The candidate will have the discretion of opting his/her own scribe/reader or may submit the request to the centre superintendent for the same.
- The centre superintendent will identify the scribe/ reader. In case a request is received

from the candidate, he/she would be allowed to meet the scribe a day before the examination to verify the suitability of the scribe.

• 20 minutes/ Hour compensatory (extra) time will also be allowed to the candidates with 40% or more disability irrespective of the fact that the candidate(s) is/are availing the facility of scribe/reader.

2.1.5. At present 3% of seats in Engineering Colleges for B.Tech are reserved for children/wards of ex-servicemen who are native of Odisha. Candidates applying under Ex-Serviceman reserved category shall furnish a certificate in the prescribed format provided in this brochure as Appendix-IV at the time of document verification. Only certificate duly approved by Rajya Sainik Board is allowed.

2.1.6. At present 30% of the seats in all the categories [**except Outside State (ZZ), Non-resident Indians (NRI), OL and TFW category**] are reserved for women candidates for B. Tech, B. Arch, MBA, MCA, / Integrated MBA(5years)* courses.

Odisha state candidates who are availing Women Quota has to produce Nativity certificate, else they will be considered as General Candidate. (Appendix-I).

2.1.7. Seats up to maximum 5 percent of sanctioned intake per course are available for admissions under Tuition Fee Waiver Scheme [TFW] for B.Tech, B. Pharm, Lateral Entry courses. These seats are supernumerary in nature.

Eligibility criteria for **Tuition Fee Waiver** Scheme [TFW]:

- i. Sons and daughters of parents whose annual income is less than Rs. 6 lakhs (Rupees Six lakh only) from all sources are eligible for seats under this scheme. The candidates who will be interested in taking admission under this scheme have to produce income certificate issued by local Tahasildar (Appendix - VII) during document verification.
- ii. The waiver is limited to the tuition fee as approved by the Government of Odisha Fee Committee for self-financing Institutions and by the Government for the Government Institutions. All other fees except tuition fee will have to be paid by the beneficiary.
- iii. The candidate should be a native of Odisha.
- iv. TFW scheme is applicable to all AICTE/UGC approved technical institution offering **Bachelor Programs of four years** duration.
- v. Candidate has to produce the following documents for claiming TFW scheme at the nodal centre during document verification.

a) Resident of Odisha certificate. (Appendix –I). The candidate has to submit the Resident/ Nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016.

b) Income certificate of parents from local Tahasildar (Appendix-VII). The candidate has to submit the Income certificate in the prescribed format i.e., Appendix-VII issued not earlier than January 2016.

2.1.8 For admission into 1st year Bachelor of Homoeopathic Medicine and Surgery (BHMS) and Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree courses; reservation applicable will be given before the counseling after due approval from the Government of Odisha.

2.2. OL Category: [Oriyas (Odias) belonging to outlying Oriya (Odia) speaking tracts] **(Notification NO:13411-SC-6-64/69-Gen Political & Service Department, Govt of Odisha Dt. 8/8/1969)**

2.2.1 Due to settlement of boundaries of states some Odia speaking areas have been merged in other

neighbouring states as a result of which the Odias living in these areas who are now residents of other states have been deprived of studying Oriya (Odia) language or Oriya (Odia) culture. 3% of seats in Government Engineering colleges are reserved for Odia speaking people residing outside the State of Odisha. OL reservation is not applicable to private engineering colleges. However, they will be considered under outside state (ZZ) category for private colleges. OL reservation is also not applicable to MBA/ MCA/ Pharmacy / LE/ M.Tech / M.Pharm / M.Arch./Integrated MBA(5years) streams.

2.2.2 A candidate eligible to avail the reservation under OL Category must have:

- (i) The candidate has to submit a nativity certificate from outside the state of Odisha in the prescribed format i.e., Appendix-V issued not earlier than January 2016. [Appendix – V is the Certificate of Authenticity of Oriyas (Odias) belonging to Outlying Oriya (Odia) Speaking Tract].

AND

The candidate has to pass an Odia examination with minimum 40% marks to be conducted by OJEE 2016 committee at the time of counseling process.

- (ii) The candidate must have passed 10+2 Science examination from outside Odisha.

2.3 Non-Resident Indians: (NRI)

NRI means Sons and Daughters of an Indian citizen who ordinarily reside outside India and hold an Indian passport.

For NRI the number of seats will be provided following the provisions of OPEI (RA&FF) Act 2007 and norms of AICTE/UGC in this regards.

In the event of non-availability of students in NRI category, the seats will be given to general candidates as per general merit. However, general fee shall be applicable to these candidates thus admitted against vacant NRI seats.

The candidate eligible to avail NRI category must produce

- (a) Copies of passport
- (b) Work permit
- (c) Equivalence certificate of the qualifying examination at the time of document verification.

Students admitted under this scheme shall not be allowed to change Institution / course under any circumstances.

2.4 Outside State Category: (ZZ)

Outside state candidates are not eligible for admission in Government Colleges to Engineering / MBA /MCA courses and under lateral entry programmes.

Outside state candidates are eligible for admission in Private Engineering (B.Tech 1st year only) / Private Pharmacy (B.Pharm 1st year only) / Private MBA/ Private Integrated MBA(5years) /Private MCA/Private Engg. Colleges 2nd year B Tech,(LE) as per their eligibility criteria following the Govt. of Odisha guidelines in this regards.

Number of Seats and Reservation

Exact number of seats and branches will be notified through OJEE-2016 web site before counselling.

- i. Only natives of Odisha state will be eligible to avail all reservations seats under 2.1.
- ii. Seats available under General Category in any course are those “available after deducting the number of seats pertaining to all the Reserved Categories from the total

number of seats available for that particular course after taking into account the All India Quota (JEE(MAIN)-2016, CAT, XAT, CMAT, MAT, ATMA, NIMCET, GPAT etc.) and NRI quota in that course”.

There is no reservation category for Lateral Entry Admission.

During admission process, all the above mentioned norms will be verified as per Govt. of Odisha order and will be adopted.

TRANSFER OF VACANT SEATS among Categories:

Transfer of vacant seats from one category to another is applicable only when there are vacant seats in that category. For example, if some SC seats are vacant after all allotment, then those seats will be transferred to General seats. Similarly if ST reserved category are not filled up due to non-availability of candidates belonging to ST category, then vacant seats may be filled up by candidates belonging to General Category.

Seats reserved under all other category like Physically Challenged(Person with Disability), GC, Ex-Servicemen etc will be filled up by general category candidates in case the same are not filled up from the reserved category except TFW category.

In case of any change in the percentage of reservation of seats / reservation criteria mentioned in the clause above on the basis of guidelines from PCI / MHRD / AICTE/ UGC / Government of Odisha, it will be intimated through the Counselling-cum-Admission Instructions to all the merit listed candidates. It will also be published in OJEE-2016 website.

3. Minimum Eligibility Criteria:

3.1 For admission to 1st Year Degree courses in Pharmacy BAMS and BHMS.

3.1.1. Pharmacy:

Passed or appearing in 2016, 10+2 Science examination of CHSE, Odisha or equivalent with Physics and Chemistry as compulsory subjects along with one of the subjects from Mathematics / Biotechnology / Biology / Technical Vocational Subject. The candidate should have passed individual subject and must have obtained at least 45% marks (40% in case of candidate belonging to SC/ST category) in the above subjects taken together.

There is no age limit to appear at OJEE-2016 for admission into Pharmacy courses.

3.1.2. Bachelor of Homoeopathic Medicine and Surgery (BHMS) and Bachelor of Ayurvedic Medicine and Surgery (BAMS)

Passed or appearing in 2016, 10+2 Science examination of CHSE, Odisha or equivalent, with Physics, Chemistry & Biology (Botany and Zoology) with at least 50% marks in aggregate (Physics, Chemistry & Biology taken together) for general category candidates and 40% marks in aggregate for SC/ ST candidates.

AGE: The lower age shall be 17 years as on December 31, 2016. The candidates have to submit H.S.C. or equivalent certificate in support of age during certificate verification at the time of counseling.

3.2 For admission to Lateral Entry

3.2.1. For admission into 2nd year Degree courses in Engineering/Technology courses under Lateral Entry for Diploma holders:

A. Passed or appearing in 2016, in three year diploma examination (two year in case of Lateral entry Diploma) in Engineering/Technology/ from State Council of Technical Education and Training (SCTE&VT), Odisha or from an AICTE approved Institute / from a recognized University as defined by UGC with at least 45% marks (40% in case of candidates belonging to SC/ST category) in appropriate branch of Engineering / Technology.

B. The native of Odisha as well as the outside state candidates who have prosecuted their study for the qualifying examination in an Institute in Odisha having approval from the competent authority are eligible for admission under Lateral Entry.

Candidates who have prosecuted diploma in approved institutes of other states are allowed to take admission in Private Engineering colleges as per their OJEE rank. But, separate merit list shall be drawn for such outside state candidates and they will be allowed for admission in the remaining vacant seats, if any, after the state merit list is fully exhausted through centralized counseling conducted by the JEE committee. Results of final diploma examination must be available on the date of document verification during counselling.

C. There is no reservation of seats in various categories in lateral entry to degree Engineering/Technology courses.

The candidates who is a native of Odisha must submit the Resident/ Nativity Certificate (Appendix-I) at the time of document verification. The candidate has to submit the

Resident/ Nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016.

- D. Diploma passout candidates can take admission in vacant seats of 1st year B Arch programme if they have valid NATA score and minimum average 50% mark in diploma course.

Choice of Discipline:

Candidates having Diploma in Engineering/Technology in the discipline indicated in Column-II are eligible to be admitted to their corresponding discipline only mentioned in Column-III of **Table-11** based on merit list. The diploma offered by NTTF Gopalpur is recognized equivalent to diploma course offered by SCTE & VT, Odisha, Bhubaneswar.

Further, the students who have passed diploma in Engineering and technology from an AICTE approved Institution and having a rank in lateral entry shall also be eligible for admission to the first year class subject to vacancies in the first year class, in case the vacancies in lateral entry are exhausted. However, the admission shall be based strictly based on OJEE-2016 rank only.

There is no age limit to admission to this course.

3.2.2 For admission into 2nd year Degree courses in Pharmacy courses under Lateral Entry for Diploma holders:

- A. Passed or appearing in 2016 in diploma examination in **two years diploma course after XII standard in Pharmacy** with minimum 45% (40% in case of candidate belong to SC / ST category) of marks in aggregate from Odisha State Board of Pharmacy (OSBP) or SCTE&VT or from an AICTE approved Institution / from a recognized University as defined by UGC for direct admission to the third semester degree courses.
- B. The native of Odisha as well as the outside state candidates who have prosecuted their study for the qualifying examination in an Institute in Odisha having approval from the competent authority are eligible for admission under Lateral Entry. Candidates who have prosecuted diploma in approved institutes of other states are allowed to take admission in Private Engineering colleges as per their OJEE rank. But, separate merit list shall be drawn for such outside state candidates and they will be allowed for admission in the remaining vacant seats, if any, after the state merit list is fully exhausted through centralized counseling conducted by the JEE committee. Results of final diploma examination must be available on the date of document verification during counseling.
- C. There is no reservation of seats in lateral entry to degree Pharmacy courses. The candidates who is a native of Odisha must submit the Resident/ Nativity Certificate (Appendix-I) at the time of document verification. The candidate has to submit the Resident/Nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016.
Further, the students having rank in lateral entry shall also be eligible for admission to the first year class subject to vacancies in the first year class in case the vacancies in lateral entry are exhausted. However, the admission shall be based strictly on the basis of OJEE-2016 rank only.
There is no age limit to admission to this course.

3.2.3 For admission to 2nd year Degree courses in Engineering/Technology under Lateral Entry for B. Sc./ +3 Sc. students :

- A. Passed or appearing in 2016, Bachelor's Degree examination of three years duration in Science from any University of Odisha or from a recognized University as defined by UGC, with at least 45% marks (40% in case of candidates belonging to ST/SC category) and must have passed **XII standard with Mathematics as a subject.**
- B. Further even though the student in this stream are admitted to second year course, **they have to clear the subjects of Engineering Graphics / Engineering Drawing and Engineering Mechanics of the first year engineering program along with the second year subjects.**
The candidate who is a native of Odisha must submit the Resident/ Nativity Certificate (Appendix-I) at the time of document verification. The candidate has to submit the Resident/ Nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016.

Choice of Discipline: (for Lateral Entry Stream)

Candidates having B. Sc. or +3 Sc. **with mathematics in class XII as a subject** are eligible to be admitted to any discipline of engineering as per availability of seats.

The students belonging to B. Sc / +3 Sc. stream shall be considered only after filling the supernumerary seats in the lateral entry category with students belonging to Diploma stream.

Students who have passed B.Sc / +3 Sc degree from a recognized University as defined by UGC shall also be eligible for admission to the first year engineering degree courses subject to vacancies in the first year class in case the vacancies at the lateral entry are exhausted. The admission shall be based strictly on the eligibility criteria mentioned above and after filling the vacant seats of the first year engineering degree courses by the lateral entry engineering applicants belonging to Diploma stream.

There is no age limit to admission to this course.

3.3 For admission to Master degree in Computer Application

3.3.1. For admission into 1st year Master degree in Computer Application:

Passed or appearing in 2016, Bachelor's Degree examination of minimum three years duration in any discipline from any University of Odisha or from a recognized University as defined by UGC and must have passed in **Mathematics** at 10+2 level or at Graduate Level. **Business Mathematics at +2 level is not permitted.**

The candidate should have obtained at least 50% (45% in case of candidate belonging to SC/ST category) at the qualifying Examination.

If the candidate has passed BCA / BSc (IT/CS/IST/ITM) with mathematics as a subject, he/she may appear the entrance test without Mathematics at 10+2 level.

There is no age limit to admission to MCA course.

3.3.2 For admission into Master in Computer Application under Lateral Entry to 2nd year:

Passed or appearing in 2016, Bachelor's Degree examination of minimum three years duration in BCA, B. Sc. (IT/ Computer Science/IST/ITM) from any University of Odisha or from a recognized University as defined by UGC and must have passed in **Mathematics** as a course at 10+2 level or at Graduate Level. **Business Mathematics at +2 level is not permitted.**

The candidate should have obtained at least 50% (45% in case of candidate belonging to SC/ST category) at the qualifying Examination.

Candidates who have prosecuted Graduation in BCA, B. Sc. (IT/ Computer Science/IST/ITM) with mathematics as a subject at 10+2 or graduation level in approved institutes of other states are allowed to take admission in Private colleges as per their OJEE rank.

There is no age limit to admission to 2nd year MCA under Lateral Entry course.

3.4 For admission to MBA

Passed or appearing in 2016, Bachelor's Degree examination of minimum three years duration from any University of Odisha or from a recognized University as defined by UGC/AICTE.

OR

Passed or appearing in 2016, for the Bachelor's Degree in Engineering/Technology/ Architecture/Pharmacy examination of minimum four/five years duration in any discipline from any University of Odisha or from a recognized University as defined by UGC/AICTE.

The candidate should have obtained at least 50% marks (45% in case of candidate belonging to SC/ST category) at the qualifying examination.

There is no age limit to for admission to MBA course.

3.5 For admission to M. Tech/M. Tech (PT) / M. Pharm / M. Arch

3.5.1.A. M. Tech (Regular)

Passed or appearing in 2016, Bachelor's Degree of examination (B. Tech)/MSc (as per Table-12) in the relevant field from any University of Odisha or from an AICTE approved Institute or from a recognized University as defined by UGC.

The candidate should have obtained at least 50% marks (45% in case of candidate belonging to SC/ST category) at the qualifying examination.

Choice of Specialization:

Candidates having degree in the discipline indicated in Column-III are eligible to be admitted to their corresponding Master degree discipline only mentioned in Column-IV of **Table-12** based on merit list.

Please refer Table-12 for clear understanding of suitably choosing question paper Column-II for appearing test based on your B Tech / M Sc. (Column-III) branch and M Tech (Column-IV) you are interested to read. **Table-12 will guide admission process for different branches of M Tech.**

There is no age limit to for admission to M. Tech (Regular) course.

3.5.1.B. M. Tech (Part Time)

Passed the Bachelor's Degree of examination in the relevant discipline/field/program from any University of Odisha or from an AICTE approved Institute or from a recognized University as defined by UGC.

And

Minimum of Two years full time work experience in a registered firm / Company / Industry / Educational and / Government, Autonomous Organizations in the relevant field in which admission is sought.

Choice of Specialization:

Candidates having Bachelor in Engineering in the discipline indicated in Column-III are eligible to be admitted to their corresponding discipline only mentioned in Column-IV of **Table-12** based on merit list.

Part Time courses are mentioned as PT.

There is no age limit to for admission to M. Tech (Part-Time) course.

3.5.2 M. Pharm

Passed or appearing in 2016 Bachelor's Degree of examination or equivalent in Pharmacy from any University of Odisha or from an AICTE approved Institute or from a recognized University as defined by UGC.

The candidate should have obtained at least 50% marks (45% in case of candidate belonging to SC/ST category) at the qualifying examination.

There is no age limit to for admission to M. Pharm course.

3.5.3 M. Arch

Passed or appearing in 2016 Bachelor's Degree of examination in the relevant field in Architecture from any University of Odisha or from an AICTE approved Institute or from a recognized University as defined by UGC.

The candidate should have obtained at least 50% marks (45% in case of candidate belonging to SC/ST category) at the qualifying examination.

Choice of Specialization:

Candidates having Bachelor in Architecture in the discipline indicated in Column-III are eligible to be admitted to their corresponding discipline only mentioned in Column-IV of **Table-12** based on merit list.

There is no age limit to for admission to M. Arch course.

3.5.4 M. PLAN

Eligibility: A pass in recognized Bachelor's Degree in Architecture, Planning, Civil Engineering or Master's Degree in Economics, Geography, Sociology, Anthropology, Environmental Science, Statistics, Social works with specialisation in Community Development and Rural Development.

Obtained at least 50% (45% in case of candidates belonging to reserved category) in the qualifying degree examination.

3.6. For admission to Integrated MBA(5years)

Passed or appearing in 2016, 10+2 examination of CHSE, Odisha or equivalent. The candidate should have passed all the individual subject and must have obtained at least 45% marks (40% in case of candidate belonging to SC/ST category) in all the subjects taken together.

There is no age limit to appear at OJEE-2016 for admission into Integrated MBA(5years) courses.

The admissions for this course shall be effected on the basis of merit list of students passed in various streams at 10+2 examination as, Science stream 20 seats, Commerce stream 20 seats, Arts Stream 20 seats in 60 seat strength.

Admission to this course will be made from OJEE rank first and if seats are vacant admission will be done on the basis of +2 mark of Science, Commerce and Arts streams. For remaining vacant seats Diploma Engineering students and students passed in +2 vocational courses will be allowed for admission.

In case of non availability of students from one stream, remaining seats in that stream may be allotted to students from other two streams on equal basis. In case of non availability of students from two streams, remaining seats in those streams may be allotted to students from third stream.

Student who discontinues the studies after 3 years of successful instructions shall be eligible for award of Bachelors degree in Management (BM), at the end of 4 years of studies student shall be eligible for Bachelors degree in Applied Management (BAM) and at the end of 5 years study student shall be eligible for Integrated MBA(5years). BAM degree shall not be awarded to one who has acquired BM degree. However, a certificate for credits acquired at 4th year shall be issued to the student.

IMPORTANT NOTES:

- (i) Candidates should fulfill the requirements of reservations under clauses 2.1 as applicable.
- (ii) **Women and Physically challenged candidates are not eligible for admission to Mining Engineering Course.**
- (iii) Candidates desirous to be admitted to Engineering colleges/institutes of outside state under DTE&T quota seats have to fulfill other conditional eligibility requirements of the institute concerned, as per data to be received by OJEE from D.T.E.&T, Odisha.
- (iv) **The Govt. of Odisha will not be responsible for any regulation of service where requirement for age exists. The student should take admission at his/her own risk, as regards to ages.**

4. Subjects for appearing at OJEE-2016:

- (a) Candidates seeking admission to B. Pharm. course shall have to appear Physics, Chemistry (60 questions in each subject) and either Mathematics (60 questions) or Biology (60 questions i.e. 30 in Botany and 30 in Zoology) or both. The duration of the examination for these subjects are as per Table-I. Ranking will be done on the basis of marks obtained either in Physics, Chemistry and Mathematics or in Physics, Chemistry and Biology whichever is higher (detail syllabus given in section 7.1, 7.1.1- Physics, 7.1.2- Chemistry, 7.1.3- Mathematics, 7.1.4-Botany, 7.1.5- Zoology).
- (b) All Diploma holders seeking admission to 2nd year Degree courses under Lateral Entry scheme shall have to appear entrance test in one paper as follows:
For Diploma in Engineering / Technology shall cover the syllabus of Mathematics, Basic Electrical Engineering, and Engineering Mechanics with 40 questions each (detail syllabus given in section 7.2). The duration of the examination for these subjects are as per Table-I.
For Pharmacy stream, the paper shall cover the syllabus of part - I and part - II of Diploma in Pharmacy as per the Education Regulation - 1991 of Pharmacy Council of India (Total 60 questions). The duration of the examination for these subjects are as per Table-I.
- (c) All B.Sc. or +3 Sc. with Mathematics in +2 level candidates seeking admission to 2nd year Degree Engineering courses under Lateral Entry scheme shall have to appear the entrance examination (in +3 Sc. / B.Sc. Physics - 15 questions +3 standard, Chemistry – 15 questions +3 standard, and Mathematics – 30 questions of +2 Science standard which will be held in one sitting of one hour duration as per Table – I (detail syllabus given in section 7.3).
- (d) All candidates seeking admission to MCA course shall have to appear the entrance

examination in Mathematics – 60 questions and Computer Awareness – 60 questions in one sitting of two hour duration as mentioned in Table – I (detail syllabus given in section 7.5).

- (e) All candidates seeking admission to MCA course under Lateral Entry Scheme shall have to appear the entrance examination in Mathematics – 60 questions and Computer Awareness – 60 questions in one sitting of two hour duration as mentioned in Table - I (detail syllabus given in section 7.8).
- (f) Candidates seeking admission to MBA course shall have to appear an Entrance test in verbal and analytical reasoning, general knowledge, comprehension and computer and business fundamentals (Total 120 questions as per section 7.6 in one sitting of two hours duration as mentioned in Table - I).
- (g) All candidates seeking admission to 1st year Master Degree courses in Engineering / Technology (both Regular and Part-Time)/Architecture shall have to appear the respective courses examination as per detail syllabus mentioned in brochure. (Total 90 questions : 60 branch questions, 30 common questions out of which 20 Engineering Mathematics and 10 Arithmetic & Logical reasoning, in one sitting of two hours time duration as per Table - I). For M Pharm course examination will be of one hour duration and 60 questions from branch only.
- (h) All candidates seeking admission to 1st year **Integrated MBA(5years)** shall have to appear an Entrance test in verbal and analytical reasoning, general knowledge and comprehension (Total 60 questions as per section 7.7 in one sitting of one hour duration as mentioned in Table - I).
- (i) Candidates seeking admission to Bachelor of Homoeopathic Medicine and Surgery (BHMS) and Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree courses shall have to appear in Physics, Chemistry (60 questions in each subject) and Biology (60 questions, 30 each in Botany and Zoology). The duration of the examination for these subjects are as per Table-I. Ranking will be done on the basis of marks obtained in Physics, Chemistry and Biology. (detail syllabus given in section 7.1).
- (j) All the admission subject to the Government of India's Gazette Notification No. 44 dated 01.03.1995 issued by Ministry of Human Resource Development (Department of Education).

DISCIPLINES

The intake capacity of the colleges based on approval of AICTE/UGC/ Govt. of Odisha shall be considered for counselling process.

*** The tuition fee will be communicated before the counselling for admission through OJEE website and in the counselling brochure after due approval from Government.**

All the seats mentioned in different tables are as approved by AICTE/ UGC / GOVT. OF ODISHA for the academic year 2014-15, which should only be used as an indicator.

Counselling through OJEE-2016 will be done for admission to these courses subject to approval of Government of Odisha / BPUT / Other Universities of Odisha/ Central Council of Homoeopathy and Central Council of Indian Medicine / Other affiliating Councils.

Colleges offering Integrated MBA(5years):

.. Admission to these courses will be subject to approval of Government of Odisha / BPUT / Other University of Odisha. The list of such colleges after due approval by Government of Odisha / BPUT / Other University of Odisha will be duly notified at the time of counselling.

BHMS / BAMS

Colleges offering Bachelor of Homoeopathic Medicine and Surgery (BHMS) and Bachelor of Ayurvedic Medicine and Surgery (BAMS) degree courses:

The details of the colleges offering these courses will be given during counseling after due approval from Central council of Homoeopathy or central council of Indian Medicine and Government of Odisha.

5. INSTRUCTIONS FOR COMPLETING OJEE-2016 APPLICATION FORM.

Before filling up the application form the candidate should have scanned images of his/her **photograph, full signature and left thumb impression** (left hand thumb for boys and girls). These scanned images are to be uploaded during the submission of application form.

The photograph should be colour. It should be without cap or goggles. Spectacles are allowed. Polaroid photos are not acceptable. Candidates with unclear photograph are liable to be rejected. Candidates may keep 6-8 identical photographs in reserve for use at the time of entrance examination, Counselling and Admission.

Method of Submission of Application Form:

- The candidate has to visit website www.ojee.nic.in / www.odishajee.com
 - The candidate/parent has to read carefully the information brochure and instructions to fill the online Application Form for OJEE-2016.
 - Then he/she has to go to the link 'Online Student Registration System 'and open "Odisha Joint Entrance Examination-2016".
 - Once the candidate clicks 'Odisha Joint Entrance Examination-2016"Application Form for OJEE-2016',
 - Choose the correct Application Form among- A, B, C, D, E AND F. You are allowed to register in one application form only. Based on your qualification and what you are interested to study, choose correct entrance test and for that choose the correct form.
- (a) Fill in the on-line application form and **note down** the registration number/application number after submission. **REGISTRATION NUMBER/APPLICATION NUMBER IS THE USER ID FOR FURTHER LOGIN. Password you are creating while filling up the form.**
- (b) Once you have created your password and registration/application number is generated, you can login as many times for uploading images and fee payment. After submission of the required data asked during online form fill-up, the candidate has

to click, submit button. At the bottom of the next page, two buttons “submit” and “reset” are given.

- (c) **FOR FEE PAYMENT ALSO REGISTRATION NUMBER/APPLICATION NUMBER IS REQUIRED.**

Upload the images in the second step.

After that, go to payment button and pay the correct fees required based on the form chosen by you.

- (d) The application fee can be remitted in the following ways:

Make payment of fee through Debit/Credit Card (VISA / MASTER / Maestro cards/ net banking). The candidate has to follow the instructions and submit the fee through bank gateway.

OR

e-Challan mode for payment is possible in State Bank of India. After on line application form filled up, e- challan form option will be visible. Candidate should print the challan. Then move to any branch of State Bank of India branch and pay the fee.

- (e) After successful submission of fee, the candidate can take print out of **Confirmation Page**.
- **Please note that the applicant’s name, parents name(s), and date of birth should exactly be the same as mentioned in the High School or his/her first Board/ Pre-University examination certificate. Any deviations, whenever discovered, may lead to cancellation of the applicant’s candidature.**
 - **The candidate’s application form must be complete in all aspects while submitting the on-line application form. Incomplete application will summarily be rejected without any notice.**
 - **Options filled by the candidate in the application form cannot be changed at a later stage under any circumstances.**

5.1 Name of the Candidate

Candidate should enter his/her name, as given in High School Certificate of Board/University.

5.2 Father’s Name

The candidate should enter his/her father’s name. Wherever possible, it should be same as that mentioned in High School Certificate of Board/University of the candidate and has to produce the documentary proof at the time of document verification.

5.3 Mother’s Name

The candidate should enter his/her mother’s name as given in High School Certificate of Board/University.

5.4 Date of Birth : Select the date, month and year correctly.

5.5 Gender: Select Male or Female or Transgender

5.6: Domicile: Select among the options , State , zz- outside state of Odisha, NRI.

Refer section – 2 for details.

5.7: Category: Select the correct one you belong to, General, SC or ST

5.8: Person with Disability or Physically Challenged: yes or no please select the correct one.

5.9: Sub category: Select if you are Green card holder, or belong to Ex – serviceman or both. If you do not belong to any sub category, please select “ not applicable”.

5.10: Income : Select if your parents annual income is above six lakhs or below six lakhs

5.11: Nationality: Indian

Course Apply Details:

5.12: Apply for: Select the correct course for which you are interested to apply. You can select one choice from the dropdown menu.

Applying for the Course:

Please refer the tables as mentioned below.

1. Table -2 for Pharmacy / BAMS/BHMS.
2. Table -3 (A) for MCA, MBA & MCA-Lateral Entry.
Table 3(B) Combination MBA with MCA, LE MCA, PGAT
Table 3(C) for MBA with PGAT(select correct question code).
3. Table - 4 (for admission to second year B Tech programme) showing the diploma stream, the candidate has studied.
4. Table - 5 for admission to second year programme ENGG/ TECH. for +3 Sc / B.Sc. with mathematics as subject at XII standard.
5. Table- 6 for M.Tech, M.Arch, M.Pharm & M Plan question selection..
6. Table - 7 for Integrated MBA(5years).
that he/she wants to appear.

Examination time-table will not permit other combinations of courses. If the applicant having passed or going to appear +3 Sc / B.Sc. wants to appear for both Lateral Entry (2nd year Engineering/Technology) and MBA, then she/he has to apply one application form and pay the right fees. You can not opt both.

Similarly if the applicant having passed or going to appear in 2016 Bachelor’s Degree of examination in the relevant field from any University of Odisha or recognized University as defined by UGC/AICTE wants to appear for both PGAT and MBA, then he/she has to apply one application form with its course code and payment. Refer Table 3(B, C) for these codes. These combinations are only allowed.

For Admission to First Year Programme BAMS AND BHMS / PHARMACY / PHARMACY AND BAMS & BHMS: Code (01 to 03) Refer- Table- 2

For Admission to First year MBA / MCA Programme: Code (04,05,06) Refer- Table-3(A), code,10,11, for combination Refer table 3(B). Table 3(C) for combination of M Tech and MBA code(32 to 45).

For Admission to Second Year Programme (Under Lateral Entry) : Code (51 to 76) Refer- Table-4

For Admission to Second Year Programme Under Lateral Entry for +3 Sc / B.Sc. with mathematics as subject at XII standard Scheme: Code (50) Refer- Table-5

For Admission to First Year M. Tech / M. Pharm / M. Arch: question codes (16-29) Ref Table-6

For Admission to First year Integrated MBA(5years) Programme: Code (31) Refer Table-7

5.13: Question selection:

This is mainly required for B Tech candidates, which question they want to appear for doing M Tech. Degree obtained, question appeared in entrance is mapped for M Tech specializations allowed to study. Refer Table-12.

5.14: Choice if Examination center: Select your preferences 1st, 2nd and 3rd. Refer Table-8.

5.15 Qualifying examination passed or appeared

The candidate should enter the appropriate qualifying examination, he / she passed or is appearing in 2016.

5.16 Year of passing/ appearing

- (i) For BHMS / BAMS / Integrated MBA(5years): Those who have already passed 10+2 or an equivalent qualifying examination should indicate the year of passing. Those who are appearing for their qualifying examination in 2016 should enter appearing 2016.
- (ii) MCA / MBA / M. Tech /M. Pharma / M. Arch / MCA – Lateral entry: Those who have already passed Bachelor's Degree in qualifying examination should enter the year of passing in the online application form. Those who are appearing for their qualifying examination in 2016 should enter appearing 2016.
- (iii) Lateral Entry: Those who have already passed Diploma or B.Sc. or +3 Sc. or BCA examination should indicate the year of passing. Those who are appearing for their qualifying examination in 2016 should enter appearing 2016.

5.17 Board/University of Qualifying Examination

- (i) +2/Equivalent
- (ii) Diploma/Equivalent as approved by UGC/AICTE/SCTE&VT
- (iii) + 3 Science/Bachelor Degree/Equivalent as approved by UGC / AICTE.
- (iv) B.Tech/B.Arch/B.Pharm/Equivalent as approved by UGC / AICTE.

5.18 Percentage of Marks in Qualifying Examination

The candidate has to fill in the actual percentage of aggregate marks obtained in the qualifying examination in this box if the results are available otherwise he/she has to leave it blank. The candidate has to enter only integer part of the percentage of marks and ignore the decimal point. For example, 76.15, 76.56 or 76.99 should be taken as 76 only.

5.19 Address for communication, Locality, etc please write in appropriate boxes.

5.20 E-mail

The candidate must give his/her active e-mail address where all the correspondence can be done.

5.20 Mobile phone Number (Without 0 & +91)

The candidate should mention his/her mobile number in the space provided, on which he/she can be contacted or a message can be sent to him/her.

5.21 Phone Number including STD/ISD Code: This is optional, if you have land line then provide or please keep it blank.

5.22 Photograph

It is expected that the candidate will have the same appearance at the time of examination and counselling as in the **UPLOADED** photograph. The photographs must be taken on or after 01.1.2016 indicating clearly the name of candidate as shown below. Photograph should not have cap or goggles.



Spectacles are allowed if being used regularly. **POLAROID** and **COMPUTER** generated photos are not acceptable. Applications not complying with these instructions or with unclear photographs are liable to be rejected. Candidates may please note that if it is found that photograph uploaded is fabricated i.e. de-shaped or seems to be hand-made or computer made, the form of the candidate will be rejected and the same would be considered as using unfair means practices and the candidate would accordingly be dealt with the rules of unfair means.

5.23 Full Signature (Black / Blue ballpoint pen only): Scanned signature has to be uploaded.

5.24 Left Hand Thumb Impression: Put your thumb impression on paper and scan it to upload.

To be uploaded during the submission of online application form

File	Format	File Size	Dimension
Photograph of Candidate	JPEG format	5KB to 99KB	3.5cm x 4.5cm
Signature of Candidate	JPEG format	5KB to 50KB	3.5cm x 1.5cm
Thumb impression of Candidate	JPEG format	5KB to 50KB	3.5cm x 1.5cm

5.25. Declaration by the Candidate:

The candidate must submit a declaration to the effect that the filled-in entries in the online application process of OJEE-2016 are true to his/her knowledge and belief.

Note: 1) Facility of submission of application form, payment of fee and printing of the Computer Generated Confirmation Page would be ceased at 05.00 p.m. on the last day of online-application form fill-up. Hence, candidates are required to complete the process within the prescribed duration.

ADMIT CARD

Admit cards will be uploaded at OJEE website (www.ojee.nic.in / www.odishajee.com) from 20th - 25th April, 2016. The candidate has to download two copies of the admit card from the OJEE website which must be endorsed by the Invigilator of the examination centre for allowing the candidate to appear the exam.

If an applicant fails to take print out of Admit Card from the OJEE-2016 website for the examination by April 25, 2016, then he/she must contact OJEE-2016 office immediately before 30th April, 2016.

If the candidate desires to change any information printed on the Admit card, he/she has to contact OJEE-2016 office immediately after taking the print out of the Admit Card before 30th April, 2016.

A photograph identical to the one pasted on the confirmation slip must be kept with the candidate during Examination.

One copy of the admit card duly signed by the invigilator must be submitted at the examination hall and other should be retained by the candidate. However the submitted admit card may be examined at a later stage to validate the authenticity.

The candidate has to keep the Admit card duly signed by invigilator until he/she takes final admission in the University /College/Institution.

No complaints will be entertained for non-downloading of admit cards after Odisha Joint Entrance Examination - 2016 is over.

6. Rules for Entrance Examination:

- i) The joint Entrance Examination will be held as per the Scheduled date and time mentioned in Table-I.
- ii) The medium of examination is English.
- iii) The examination hall shall be opened to the candidates half an **hour before** the commencement of the examination. No candidates will be allowed to enter in the examination hall without a valid downloaded admit card. The downloaded admit card should be endorsed by the Invigilator of the examination centre.
- iv) Candidates are required to take their respective seats at least **15 minutes** before the commencement of the examination, strictly according to the sitting chart notified earlier by the Centre Superintendent.
- v) In no case, a candidate is allowed to enter the examination hall after the examination starts.
- vi) Attendance will be taken by the invigilators on the attendance sheets in which the candidates shall have to put their full signature against their corresponding roll numbers. Also the candidates have to give his/her left hand Thumb Impression against their corresponding roll numbers in the space provided. During Examination, the candidates have to enter their Registration Number, answer sheet number, and question series number against their roll number in the roll sheet provided.
- vii) No candidate will be allowed to leave the hall without surrendering his/her answer sheet(OMR) until the examination is over. Ordinarily no candidate is allowed to leave the hall temporarily during the examination.
- viii) Candidates suffering from any disease and their subsequent presence in the examination, if, is undesirable in the interest of other candidates, then he/she will not ordinarily be allowed to enter the examination hall. Also the candidates are not allowed to have a substitute writer.
- ix) **Candidates should bring their own black /blue ball point pen, for writing and blackening the circle in the answer OMR.** Books, printed papers (other than their Admit Cards), Manuscripts or electronic gadgets such as mobile phones, cell phones

and electronic diary, calculators etc, must not be taken into the examination hall. In case these prohibited materials are found, the candidate will be debarred from appearing the examination and asked to leave the Hall.

- x) The candidates are advised to inspect the question booklet and answer sheet about its completeness before attempting to answer. In case page/ pages are found missing, torn or not in order, the candidates should immediately report to the invigilator and get a fresh question answer book issued after surrendering the defective one.
- xi) Candidates are not permitted to talk to each other in the examination hall. No one should receive any help from or assist another in any manner. Malpractice of any form detected during or after the examination would entail not only cancellation of candidature but also more severe punishment as deemed fit by the OJEE committee.
- xii) A candidate should write his/her roll number as assigned in his/her admit card and sign in the place provided in the question booklet and answer sheet. He/ she should on no account write anywhere in the answer sheet his/her own name, roll number or anything else that is not strictly connected with the answers to the question given. Writing of any such thing or false roll number is a serious offence. The answer sheet without the candidate's roll number clearly written in space provided will not be examined.
- xiii) A candidate wishing to say anything should stand up in his/her seat and remain standing until the invigilator attends to him/her. He/she should on no account leave the seat or make any noise to draw the invigilator's attention.
- xiv) The Centre Superintendent is empowered to take necessary decisions on any other matters, which are not provided in these rules.

6.1 Examination Procedure / Valuation methodology:

There will be multiple choice type questions. The number of questions will be sixty (60) per each hour of examination. Each question shall have four answers (including one correct answer) and the examinee shall have to blacken only the appropriate circle/oval (which he/she considers most correct) in black / blue ball point pen. Each correct answer shall fetch four marks. Each unattempted question will fetch zero. One mark will be deducted for wrong answer. If more than one circles are darkened for one question, it will be treated as an incorrect answer. Blank answer OMR sheet without being darkened in any one of the answer circles will summarily be rejected. No rank will be awarded to such applicants submitting blank answer OMR sheet.

The Answer Sheet is divided into Part-A and Part-B. Part – A of the original sheet contains the details such as Roll No., Question Booklet number, Name and signature of the candidate, Name of the centre, Signature of the Invigilator.

The Part – B of the answer sheet is meant for recording the answers by darkening the appropriate circle(s) by the candidate.

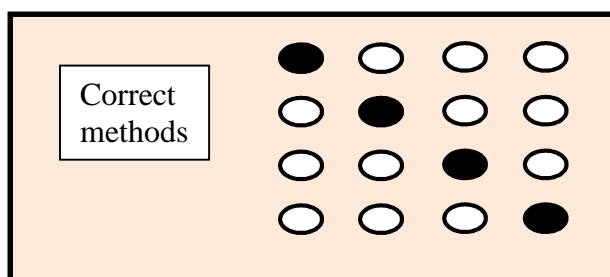
6.2 Issue of Marks

Candidates desirous of knowing subject-wise marks secured by them should make a written request enclosing a demand draft of Rs. 400/- (Rupees four hundred only) in favour of "OJEE-2016" drawn on any Nationalised Bank at Bhubaneswar, so as to reach the OJEE office within 10 days of the publication of result.

6.3 Re-totaling and Review:

The OJEE answer sheets are all machine evaluated with adequate care taken to make them error free. Based on the evaluation a merit list is prepared. There is no award of class. Mark sheets are not issued in general. A candidate, may however request for re-totaling / re-addition with a fee of Rs.500/- (Rupees five hundred only) in the shape of demand draft in favour of OJEE-2016 drawn on any nationalised bank in Bhubaneswar so as to reach the OJEE office within seven calendar days of the publication of OJEE – 2016 result. Re evaluation of answer script is not permissible. A committee will manually verify the results and its decision will be final and binding on the applicant. The candidates are allowed to take question papers after the examination is over.

6.4 Correct ways of Marking:



Each question is followed by answers which have numbers A B C and D. Then by using black / blue ballpoint pen darken the circle bearing the correct answer in the answer sheet against the corresponding number of the question. The correct method of answering is illustrated above.

6.5 Sample Questions

- If we dip capillary tubes of different radii r in water and water rises to different height h in them, then.
(A) $h/2 = \text{constant}$
(B) $h/r = \text{constant}$
(C) $hr = \text{constant}$
(D) $hr^2 = \text{constant}$
- The drug taxol is obtained from the bark of
(A) Pacific Yew
(B) Eucalyptus
(C) Cinnamon
(D) Cinchona
- The number of different types of F-S-F bond angles in SF_4 are
(A) two
(B) one
(C) three
(D) four
- The integral $\int_0^2 (1-x) dx$ equals :
(A) 1
(B) 0
(C) 3
(D) 2

7 SYLLABI

7.1 [PHARMACY / Bachelor of Homoeopathic Medicine and Surgery (BHMS) / Bachelor of Ayurvedic Medicine and Surgery (BAMS) /

The Syllabi given hereunder for OJEE-2016 are only illustrative and not exhaustive. The syllabi are in line with courses of studies in Science stream for the Higher Secondary Examination 2016 of CHSE, ODISHA. Since OJEE is conducted with a view to preparing merit lists for admission the decision of the OJEE Committee as regards the scope of the syllabus is FINAL.

7.1.1 PHYSICS (60 Questions)

Measurements and Motion: Fundamental and derived physical quantities, Concept of Mass, Length and Time, Measurement of different quantities in SI Units. Errors in measurement, Combination of errors, Dimension of physical quantities, Dimension analysis of physical quantities- Conversion of physical quantities from one system of units to another. Concepts of vectors and scalars, Components of vectors, Unit vectors, Addition, Subtraction and Multiplication (vector & scalar) of vectors. Lami's Theorem. Equations of linear motion for uniformly accelerated bodies (by calculus method). Newton's laws of motion, Conservation of energy and momentum, Collision in one dimension, Work, Power, Energy, Sliding and Rolling friction. Circular Motion- radial and tangential acceleration, Centripetal force, Banking of tracks, Kepler's laws of Planetary Motion (Statements only). Newton's law of Gravitation. Earth satellites- Orbital and Escape velocities. Moment of Inertia- definition and expression of Moment of Inertia for rod, ring and circular disc (about an axis passing through the centre and perpendicular to the plane of the body). Angular momentum and Conservation of angular momentum, Projectile motion.

Heat & Thermodynamics: Concept of Temperature, Scales of Temperature (Celsius, Fahrenheit, Kelvin), Definition of mechanical equivalent of heat (J), Thermal energy, Heat Capacity, Specific heat of solids and liquids, Latent heat, Heat transfer- Thermal conductivity of solids, Steady state, Kirchhoff's laws of heat radiation, Stefan's law of heat radiation, Newton's Law of cooling.

Kinetic Theory of gases- Pressure of an ideal gas, Kinetic interpretation of temperature, Degrees of freedom, Law of equipartition of energy.

First Law of Thermodynamics, Specific heats of a gaseous system, Relation between C_p and C_v , Work done during Isothermal and Adiabatic processes, Carnot's conceptual heat engine and its efficiency, Second law of thermodynamics, Absolute Scale of Temperature.

Characteristics of Materials: Elastic and Plastic behaviors of solids, Elastic limit, Young's modulus, Shear and Bulk modulus, Poisson's ratio.

Liquids : Surface Tension and Surface Energy, Excess pressure across a spherical liquid surface, Expression for capillary rise. Streamlined and turbulent flow, Bernoulli's equation and its application, Viscosity- coefficient of viscosity, Stokes law.

Electricity & Magnetism : Electric field intensity and Potential at a point in an electric field, Relation between them, Capacitance- dielectric constant and its effect on capacitance. Series and parallel grouping of capacitances, Energy stored in a charged capacitor, Ohm's law, Variation of resistance of metallic conductors with temperature, Kirchhoff's laws and its application to a balanced Wheatstone bridge. Combination of Cells and resistors- series and parallel. Heating effect of electric current and Joule's law, Electric power and electric energy.

Magnetic Permeability and Susceptibility of materials, Properties of dia, para and ferro magnetic materials. Biot-Savart's law- Magnetic Field due to a circular coil at its centre. Moving coil galvanometer (dead beat only). Force on a moving charge in a uniform magnetic field. Faraday's

laws of electromagnetic induction, Lenz's law, emf induced in a rotating coil in a magnetic field. Alternating current- Self and Mutual induction, Phase relation between Voltage and Current in pure resistive, capacitive and inductive circuits. Principle of transformer, elementary idea on electromagnetic waves.

Wave motion: Simple harmonic motion, wave propagation, characteristics of wave motion, longitudinal and transverse waves, superposition of waves:- Stationary waves, Beats. Open and closed organ pipes, velocity of sound in air- effect of pressure, temperature and humidity on it. Doppler Effect, laws of transverse vibration of string (Statement only).

Optics: Reflection and refraction at curved surfaces. Spherical mirror and thin lens formula and refraction through prism. Total internal reflection, Dispersion, Huygens principle (statement only), Young's double slit experiment.

Electronic Devices: Thermionic emission, Statement of Richardson's equation and Child's Law, Vacuum triode- construction and characteristics, relationship between valve constants, Descriptive idea of energy bands:- conductors, insulators and semi conductors, Intrinsic and extrinsic semiconductors, p-type and n-type semiconductors. PN junction, PNP and NPN transistor, PN Junction as a rectifier.

Relativity and Nuclear Physics: Postulates of special theory of relativity, variation of mass with velocity (Statement only), mass energy equivalence relation (Statement only). Atomic nucleus, nuclear forces, nuclear mass, binding energy, mass defect, artificial radio activity, radio isotopes and their uses. Nuclear fission, energy released during nuclear fission, chain reaction, controlled chain reaction, nuclear fusion, energy generation in the Sun, radiation hazards.

7.1.2 CHEMISTRY (60 Questions)

General behaviour of matter:

Solid State : Characteristics, Classification, Solubility, Melting points, Crystal structure of simple ionic compounds. Radius ratio and coordination number: density calculation, lattice points and voids.

Liquid State : Characteristics, Boiling and Freezing points, Viscosity, Surface tension, Osmosis, Raoult's law, Lowering of vapour pressure, Depression of freezing points, Elevation of boiling points, Anomalous molecular masses; Association and dissociation.

Solutions : Types of solutions, concentration and different ways of expressing concentration (percentage, ppm, strength, normality, molarity, molality and formality); Interrelations

Gaseous State : Gas laws, Kinetic model of gases, ideal gas equation, Van der waals' equation, compressibility factor, Average, root mean square and most probable velocities.

Atoms and molecules : Symbols, Valency, Atomic mass, Molecular mass, Avogadro's law, Mole concept, Determination of equivalent mass of zinc and copper, Atomic mass by Dulong Petit's method and Molecular mass by Victor Mayor's method. Stoichiometry and calculations based on stoichiometry.

Structure of atoms and molecules : Fundamentals particles and their properties, Rutherford and Bohr models of atom, Hydrogen spectrum, Energy levels, Shells and Sub-shells, s, p and d orbitals, Quantum numbers, Pauli's exclusion principle, Aufbau-principle, Hund's rule, Electronic configuration of atoms, Extra stability of half filled and filled subshells.

Chemical bonds : Ionic, Covalent, Coordinate and Hydrogen bond, Hybridisation- sp, sp², sp³, dsp², dsp³, d²sp³ shapes of molecules, VSEPR theory, Molecular Orbital Theory of simple diatomic molecules.

Periodic classification : Periodic table and periodic laws, s, p, d and f block elements, Periodicity in properties such as atomic and ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity and oxidation states.

Chemical energetics, equilibrium and kinetics:

Energetics: Internal energy, Enthalpy, Heats of reactions, Bond energy, Hess's law, Idea on enthalpy, entropy and free energy, spontaneity and conditions of equilibrium.

Equilibria : Reversible reaction, Law of mass action, Equilibrium constant K_p, K_c, K_x and their

relation. Its application to ammonia synthesis and dissociation of HI, Decomposition and thermal dissociation. Theory of acids and bases, Dissociation of weak acids and bases, Ostwald's dilution law, Ionic product of water, Common ion effect, Solubility product and their applications, pH, Hydrolysis of salts, Buffer solutions.

Kinetics : Rate of reaction, Factors affecting the rate, Rate constant, Order and Molecularity of a reaction, Simple zero and First order reaction, Half life period, Arrhenius equation and Activation Energy, Collision theory (qualitative idea only)

Types of chemical reaction : Neutralisation and oxidation– Reduction reaction, Equivalent mass, Oxidation number, Balancing chemical reactions, by Ion electron method, Reactions involving KMnO_4 , $\text{K}_2\text{Cr}_2\text{O}_7$, $\text{Na}_2\text{S}_2\text{O}_3$, oxalate etc.

Non-metals : Group study, Preparation, Properties and uses of elements of compounds of hydrogen (ortho and para hydrogen, isotopes of hydrogen, D_2O and H_2O_2). Allotropes of carbon, Nitrogen family (NH_3 and HNO_3). Oxygen and sulphur family (O_2 , H_2S , SO_2 , H_2SO_4 and its manufacturer by contact process), Halogens, Hydrogen halides and Interhalogen compounds, Zero group elements (properties & uses).

Electrochemistry : Electrolysis, Electrical Conductivity (Specific, Equivalent and molar), Faraday's laws, Kohlrausch law, Galvanic cell, Cell reaction, Nernst equation, Standard electrode potential, Electro chemical series e.m.f. of simple cells. Fuel cells.

Nuclear chemistry : Radio activity, Rate of disintegration, Group displacement law, Half-life and average life period, Stability of nuclear (N/P ratio) Carbon dating, Nuclear Fission and Fusion. Induced radioactivity by protons, neutrons and alpha particles.

Metals and metallurgy : Occurrence of metal, Minerals and ores, flux, slag calcination, roasting, smelting (by reduction of oxides) and refining. General trends in the characteristics, principles of extraction of Na, Mg, Ca, Al, Cu and Fe and their oxides, hydroxides, chlorides, nitrates and sulfates.

Organic chemistry:

Introductory : Functional Groups and organic radicals, Nomenclature by IUPAC system (substitutive method) , Isomerism (Structural and stereoisomerism – optical and geometrical) EZ & RS nomenclature, Electron mobility – Inductive effect, Resonance, Electromeric effect and Hyperconjugation; their applications. Types of organic reactions – addition, substitution, elimination reactions. Idea of electrophiles and nucleophiles; Reaction intermediates – idea of carbocations, carbanion & free radicals; their stabilities.

Aliphatic compounds: Methods of preparation and properties of alkanes, alkenes, alkynes (acidity of terminal alkynes), haloalkanes, alcohols, aldehydes, ketones, carboxylic acids, acid derivatives (acid chlorides, esters and amides), nitroalkanes and amines.

Aromatic compounds : Aromaticity (Huckel's rule), Aromatic hydrocarbon (Preparation and reactions – Substitution, addition, ozonolysis) Phenols (Preparation and reactions) : Aldehydes (Preparations and reactions); Acids (Preparation and reactions). Amines (Preparation and reactions); Diazonium salts (synthetic application).

Biochemistry : Biological importance of organic compounds such as carbohydrates, amino acids, proteins, lipids and nucleic acids (only by metabolic process).

Chemistry in the service of mankind : General idea on fertilizers, pesticides, polymers (nylon, terylene, neoprene, buna-S, PVC, Teflon & bakelite). Medicine-analgesic, antipyretic, antibiotic and antiseptic (structure and preparation not required).

Environmental chemistry: Source, effect and control measures of air and water pollution.

7.1.3 MATHEMATICS (60 Questions)

Logic : Statement, Negation, Implication, Converse, Contrapositive, Conjunction, Disjunction, Truth Table. Different methods of proof, Principle of Mathematical induction.

Algebra of sets : Set operation, Union, Intersection, Difference, Symmetric difference, Complement, Venn diagram, Cartesian product of sets, Relation and functions, Equivalence relation, Kinds of functions and their domain and range, Composite function, Inverse of a function.

Number system : Real numbers (algebraic and order properties, rational and irrational numbers),

Absolute value, Triangle inequality, AM GM, Inequalities(simple cases), Complex numbers, Algebra of complex numbers, Conjugate and square root of a complex number, Cube roots of unity, De Moivre's theorem with simple application. Permutations and Combinations -simple applications, Binomial theorem for positive integral index, Identities involving binomial co-efficients.

Determinants and matrices : Determinants of third order, Minors and cofactors, Properties of determinants, Matrices upto third order, Types of matrices, algebra of matrix, adjoint and inverse of matrix, Application of determinants and matrices to the solution of linear equations (in three unknowns).

Trigonometry : Compound angles, Multiple and Submultiple angles, Solution of trigonometric equations, Properties of triangles, Inverse circular function, Sum and product of sine and cosine functions.

Co-ordinate geometry of two dimensions : Straight lines, Pairs of straight lines, Circles, Equations of tangents and normals to a circle, Equations of parabola, Ellipse and hyperbola in simple forms, their tangents and normals. Condition of tangency. Rectangular and Conjugate hyperbolas.

Coordinate geometry of three dimensions : Distance and Division formulae, Direction cosines and direction ratios, Projection, Angle between two planes, Angle between a line and a plane. Distance of a point from a line and a plane. Equation of a sphere – general equation, Equation of sphere when end points of diameter are given.

Quadratic polynomials : Roots of quadratic polynomial, Factorisation of quadratic polynomials, Maximum and minimum values of quadratic polynomials for all real values of the variable, sign of the quadratic polynomial for all real values of the variable, Solution of quadratic inequations.

Sequence and Series : Definition, Infinite geometric series, Arithmetico-geometric series, Exponential and Logarithmic series.

Vectors : Fundamentals, Dot and cross product of two vectors, Scalar triple product and vector triple product, Simple application of different products.

Differential calculus: Concept of limit, Continuity of functions, Derivative of standard Algebraic and Transcendental functions, Derivative of composite functions, functions in parametric form, Implicit differentiation, Successive differentiation (simple cases), Leibnitz theorem, Partial differentiation, Application of Euler's theorem, Derivative as a rate measure, Increasing and decreasing functions, Maxima and Minima, Indeterminate forms, Geometrical application of derivatives such as finding tangents and normals to plane curves.

Integral calculus: Standard methods of integration (substitution, by parts, by partial fraction, etc), Integration of rational, irrational functions and trigonometric functions. Definite integrals and properties of definite integrals, Areas under plane curves.

Differential equations : Definition, order, degree of a differential equation, General and particular solution of a differential equation, Formation of a differential equation, Solution of a differential equations by method of separation of variables, Homogeneous differential equations of first order and first degree, Linear differential equations of the form $dy/dx + p(x)y = q(x)$, Solutions of differential equations of the form $d^2y/dx^2 = f(x)$

Probability and statistics: Average (mean, median and mode). Dispersion (standard deviation and variance), Definition of probability, Mutually exclusive events, Independent events, Compound events, Conditional probability, Addition theorem.

Number system : Decimal, binary, octal, hexadecimal numbers and their conversion.

7.1.4 BOTANY (30 Questions)

Diversity of plant life: Five kingdom system of classification with their merits and demerits. Structure, reproduction and economic importance of Bacteria and Viruses. Life history of representative members of different plant groups: *Spirogyra*, *Saccharomyces*, *Funaria*, *Dryopteris*, *Cycas*.

Morphology of angiosperms : Normal and Modified roots, stems and leaves, Inflorescence, Flower and its parts, Pollination, Fertilization, Fruits.

Taxonomy of flowering plants : Principles and units of classification (species, genus, family) Binomial nomenclature, Studies of important families: Malvaceae, Fabaceae, Asteraceae,

Brassicaceae, Liliaceae.

Cell: Structure and function Cell Theory, Totipotency, Prokaryotic and Eukaryotic cell, Structure of typical plant cell: Cell Wall, Cell Membrane, Cell Organelles (Plastids, mitochondria, endoplasmic reticulum, ribosomes, Golgibodies, Lysosomes, Peroxisomes). Important compounds of cell: Structure and functions of water, aminoacids, proteins, carbohydrates and fats. Properties and chemical nature of enzymes. Mode of enzyme action.

Continuity of life: Cell division: Mitosis, Meiosis and their significance, Mendel's laws of inheritance: Monohybrid and Dihybrid cross, Incomplete dominance, Multiple allelism.

Genetic material: Structure of nucleic acids. Evidences to establish 'DNA as genetic material' (Griffith and Avery's experiment). Concept of gene, Transcription and translation in Prokaryotes. Regulation of gene expression – induction and repression.

Recombinant DNA and Tissue culture technique: Recombinant DNA techniques and its significance. Gene bank, Production of Transgenic plants with examples, Tissue culture technique.

Complexities of plant life: Meristematic and tissues, Internal structures of dicot and monocot stems, roots and Isobilateral and Dorsiventral leaves, Normal secondary growth in dicot stem.

Processes in plants : Diffusion, Osmosis, Plasmolysis, Imbibition, Absorption and transport of water and minerals, Transpiration and its significance, Life energy and ATP, Respiration and fermentation, Photosynthesis, Biological nitrogen fixation. Growth and development: Growth regulators – Physiological effects of Auxins, Gibberellin, Cytokinin, Ethylene and Abscissic acid. Elementary idea of photoperiodism and vernalisation. Plant movements (with special reference to geotropism and phototropism).

Ecology : Man and environment, Ecological adaptations (Hydrophytes and Xerophytes), plant succession (Hydrosere, Xeresere), Structure and function of Ecosystem.

Economic Botany : Economic importance of plants like Rice, Gram (green gram) Jute, Groundnut, Mango, Tulsi.

Common plant diseases : Symptoms and control measure of following plant diseases: Powdery mildew of peas, Bacterial blight of rice, Mosaic disease of Papaya.

7.1.5 ZOOLOGY (30 Questions)

Animal world : Definition, Scope and branches of Zoology. Charecteristics of living organisims (elementary idea of metabolism, transfer of energy at molecular level, open and closed system, homeostasis, growth & reproduction, adaptation, survival and death).

Classification (Artificial, Natural, Phylogenetic) Two-Kingdoms & Five-Kingdoms – their merits and demerits. Species concept, binomial nomenclature, scientific names of some common animals: Fishes – Rohi, Bhakura, Mirikali, Kau. Amphibians – Frog, Toad. Reptiles – House Lizard, Garden Lizard, Crocodile, Turtle, Cobra, Krait. Birds – Fowl, Peacock, Pigeon, Crow. Mammals – Tiger, Elephant, Cat, Dog, Rabbit and Man.

Diversity of Animal life :

Introductory Concept:

- (1) Concept of body plan, symmetry, coelom, germ layers, homeothermic and poikilothermic animals.
- (2) Salient features of Non-chordate phyla with examples, General characters of chordates upto class levels with examples.

Animal Morphology: Morphology of Paramecium, Sycon, Hydra Planaria, Ascaris, Earthworm, Cockroach, Pila, Starfish, Amphioxus, Bony fish, Cartilaginous fish, Frog, Calotes, Pigeon & Rabbit.

Animal Histology: Types – Epithelial, Connective (details about blood and lymph), Muscular & Nervous – Organs and Organ Systems.

Animal Locomotion: Joints and Muscles in movement of man, mechanism of muscle contraction, Disorders – Arthritis and Osteoporosis.

Animal Physiology: Animal Nutrition – Intracellular and Intercellular digestion, Digestive system of cockroach, Digestive system and process in human (ingestion, digestion, absorption, assimilation and egestion) role of hormones in digestion, malnutrition and under-nutrition.

Animal Respiration: Types of respiration (cutaneous, tvacheal, branchial and pulmonary),

Structure and function of respiratory system in man: Respiratory organs, mechanism of pulmonary respiration, pulmonary exchange of gas, transport of gases. Common respiratory disorders – prevention and cure.

Animal Circulation: Open circulation, closed circulatory system in man, Structure of Heart, Cardiac Cycle, Arteries, Veins, Capillaries, Portal System, Coronary Circulation, Blood Pressure, Respiratory pigments, Blood groups (A B O & Rh), Blood Coagulation, Blood related disorder – Hypertension, Atherosclerosis & Arteriosclerosis, Pace maker.

Animal Excretion: Types of Excretion (Ammonotelism, ureotelism and uricotelism), Excretion in cockroach, Excretion in human – Structure and function of kidney, Role of liver in excretion: Ornithine Cycle. Disorders related to excretion – kidney failure, dialysis, kidney transplantation, Role of ADH.

Control and Co-ordination: Nervous system of cockroach, Nervous system of human – central, peripheral & autonomic, transmission of nerve impulse, reflex action, sense organs (Eye and Ear).

Human Endocrine System: Endocrine glands (Name, Location, Hormones and their functions), hormones as messengers and regulators, feed back controls, hormonal disorders.

Genetics: Mendelism, linkage and crossing over, recombination, sex chromosomes, sex determination, sex linked inheritance, chromosomal aberrations (structural).

Animal Reproduction and Human Development: Types of reproduction – Asexual reproduction (Binary fission, multiple fission, budding), Sexual reproduction in human – male and female reproductive system, menstrual cycle.

Human development: Gametogenesis (spermatogenesis, oogenesis), fertilization, development upto 3 germ layers, fate of germ layers, extraembryonic membranes, structure and function of placenta.

Cellular growth: Hormonal control of growth, Types of regeneration and mechanism (in planaria), ageing (Senescence).

Biology in Human welfare (Elementary idea): Common problems of adolescence (drugs, alcohols and tobacco), social and moral implications, mental and addictive disorders, risk of indiscriminate use of drugs and antibiotics.

Biotechnology: Animal tissue culture, bio-war, biopiracy, cloning and transgenic animals. Elementary idea - organ transplantations, immunity and immune disorders, vaccines and vaccination (recent advances).

Modern techniques in diseases diagnosis: Basic methods of estimation of haemoglobin, sugar and urea in blood, ELISA and WIDAL tests.

Basic principles of ECG, EEG, CT SCAN, MRI, Ultra Sound and Endoscopy, DNA Finger Printing.

Human Diseases: Types, Causes, diagnosis, prevention and treatments – AIDS, STD, Cancer and Diabetes.

7.2. SYLLABI FOR LATERAL ENTRY STREAM (DIPLOMA)

The syllabi given here for JEE-2016 (Lateral entry diploma holders in Engineering / Technology) is only illustrative and not exhaustive. Since JEE-2016 is conducted with a view to prepare a relative merit list only for admission, the decision of the JEE-2016 committee as regards to the scope of syllabi is final. This paper is common to all the discipline except Pharmacy.

(A) BASIC ELECTRICAL ENGINEERING (40 Questions)

Fundamentals: Concept of Source and Load, Ohm's Law, Concept of resistance, Series and Parallel DC circuits, Kirchhoff's Laws, Faraday's Laws of Electromagnetic Induction, Fleming's Left Hand Rule and Right Hand Rule.

AC Theory: Generation of alternating emf, Difference between DC and AC, Amplitude, Cycle, Time period, Frequency, Phase, Phase Angle, Phase Difference, Instantaneous value, RMS value, Average value, Amplitude factor and Form factor, Phasor diagram representation of AC values, AC through pure resistance, inductance and capacitance, AC through RL, RC and RLC circuits, Impedance Triangle and Power Triangle.

Generation of Electrical Power: Principle of operation of different electrical power generating plants such as Thermal, Hydro-Electric and Nuclear power plants with their block diagrams,

Concept of single phase Transformer and its application.

Conversion of Electrical Energy: DC machine and its main parts. DC generators: Principle of operation and emf equation. DC motors: Principle of operation, classification, torque equation and applied voltage V -back emf E_b relation. Starters used for DC motors. Use of different types of DC generators and motors. Principle of operation of three-phase and single-phase induction motors. Types and use of three-phase and single-phase induction motors.

Wiring and Power billing: Types of wiring and their comparison, Layout of household wiring (single line diagram), Basic protective devices in household wiring, Calculation of Power used in small electrical appliances and installation, Calculation of Energy consumption in small electrical installations, Earthing installation, types (Pipe and Plate earthing) and uses.

Measuring Instruments: Introduction to measuring instruments, Expression for Torque in measuring instruments, Use of PMMC and MI type of instruments(Ammeters and Voltmeters). Connection diagram of AC/DC ammeter, voltmeter, energy meter and wattmeter for single phase electrical system only.

Storage Devices: Introduction to storage devices and their types. Charging, Discharging and Maintenance of Lead Acid battery.

(B) MATHEMATICS (40 Questions)

Algebra: Definition of complex number, Conjugate of complex number, Modulus and amplitude of a complex number. Algebra of complex numbers. Cube root of unity and their properties, De'Moivre's theorem and its application, Permutation, Combination, Binomial Theorem for any rational index, Relationship between Binomial coefficients.

Determinant and Matrices: Properties of determinants. Cramer's Rule, Types of matrices, Transpose, Adjoint and inverse of a matrix upto third order. Solution of simultaneous equation by matrix method.

Trigonometry: Trigonometrical ratios, multiple and submultiple angles, solution of trigonometrical equations, Properties of triangles, Inverse circular function and its properties.

Analytical Geometry: Distance formula, Division formula, Area of trapezium, Area of Triangle, Equation of straight lines in different form, Distance of a point from a line, Equation of circle in different forms.

Vector Algebra: Definition, Algebra of vectors, Position Vector, Resolution of vector into components, Scalar and Vector product of two vectors and their application, scalar triple product and its application.

Calculus: Limit and continuity of function, Derivative of standard functions, Derivative of composite functions. Differentiation of implicit functions, Differentiation of function in parametric form, Differentiation using logarithm, Differentiation of a function with respect to another function, Successive differentiation in simple cases, Maxima, minima and point of inflection, Partial derivative, Euler's theorem for homogeneous functions.

Standard methods of integration (by parts, by substitution, by partial fraction etc.). Definite integrals and their properties. Area bounded by curves.

Ordinary Differential Equation: Order and degree of differential equation, formation of differential equation. Solution of first order and first degree differential equation.

Coordinate Geometry of three Dimension: Distance and Division formulae, Direction cosine and direction ratio of a line, condition of perpendicularity and parallelism, Equation of plane under different conditions, angle between two planes, Distance of a point from a plane, General equation of a sphere, Equation of a sphere with given diameter.

Probability and Statistics: Measures of central tendency (Mean, Median, Mode), Measures of dispersion (Mean Deviation, Standard Deviation and Variance), Definition of probability, equally likely, Mutually exclusive and independent events. Addition theorem of probability.

(C) ENGINEERING MECHANICS (40 Questions)

Force and Moments

Force and its effects, Classification of forces, Principle of Transmissibility, Principle of

Superposition, Action and Reaction, Tension and Compression, Free Body Diagram. Co-planer concurrent forces: Resultant of forces, Equilibrium of forces and equilibrant, Parallelogram law of forces and determination of the resultant of two concurrent forces, Components and resolve parts of a force, Principle of resolution of a force and any number of forces, Analytical determination of resultant of number of concurrent forces, Lami's Theorem, Triangle law of forces and polygon law of forces. Coplanar non-concurrent forces: Moment of a force, Statement and prove of Varignon's theorem, Conditions of equilibrium, Determination of resultant of two like and unlike parallel forces, Couple and its moment, Various types of supports with their reactions, Simple problems on coplanar non concurrent forces with the help of free body diagram.

Center of Gravity and Moment of Inertia

Centroid and Center of Gravity(C.G.), Expression for C.G. of straight line (uniform rod),triangle, rectangle,circular,semicircular lamina. Expression for C.G. of solids like hemisphere and cone (Expression only). Different types of engineering sections (symmetrical and non-symmetrical built up sections). Location of the C.G. of the above sections. Definition Moment of Inertia(M.I.) of plain figure as second moment of area. Perpendicular axes theorem, parallel axis theorem. M.I. of plane lamina like rectangle, triangle, circle, and semicircle (from 1st principle) M.I.of different engineering sections.

Friction

Frictional force, angle of friction, limiting friction, co-efficient of friction, Laws of Static Friction. Simple problems on ladder, Body on Inclined planes with applied force parallel to the plane and horizontal, Screw Jack.

Gear Drive

Various types of gears, Gear terminology, Velocity ratio and expression for the velocity ratio for simple gears. Types of gear trains (simple and compound gear trains)

Simple Lifting Machine

Definition of a machine. Simple and compound lifting machines. Mechanical Advantage (MA), Velocity Ratio (VR) and efficiency of lifting machine. Relationship between MA, VR and efficiency. Laws of machine, Friction in machines, Friction in terms of load and friction in terms of effort. Reversible machine and self-locking machine. Condition of reversibility of a machine. Velocity Ratio and efficiency of 1st, 2nd & 3rd system of pulleys; Simple and differential wheel & axle, Screw jack.

Simple Stress and Strain

Stress, strain, Tensile, compressive and shear types of stress and strain, Hooke's Law of elasticity, Poisson's ratio, Elastic limit, Elastics Constants (E, G & K) relationship between E,G &K, Stress-strain curve and salient points on stress-strain curve for ductile material. Simple problems on stress and strain in case of material with uniform cross section.

Dynamics

Kinematics and kinetics of a particle, Principle of Dynamics:-Newton's laws of motion, D'Alembert's Principle and its application. Motion of particle acted upon by a constant force. Engineering Application of Work, Power and Energy: Work done, force-displacement diagram, Work done in stretching a spring, Power, Indicated Power, Brake Power and efficiency. Kinetic and potential energy & its application, Simple Harmonic Motion (SHM) with examples. Free Vibration, amplitude, frequency and time period in SHM, Velocity and acceleration of particle executing SHM, application of SHM to engineering problems. Force, Momentum and Impulse, Conservation of energy and linear momentum, Collision of elastic bodies, Co-efficient of restitution (e), Velocity after impact. Impact of body with a fixed plane.

7.3 SYLLABI FOR LATERAL ENTRY STREAM (+3 Sc. / BSc)

7.3.1 MATHEMATICS (30 Questions)

Logic: Statement, Negation, Implication, Converse, Contrapositive, Conjunction, Disjunction, Truth Table. Different methods of proof, Principle of Mathematical induction.

Algebra of sets: Set operation, Union, Intersection, Difference, Symmetric difference,

Complement, Venn diagram, Cartesian product of sets, Relation and functions, Equivalence relation, Kinds of functions and their domain and range, Composite function, Inverse of a function.

Number system: Real numbers (algebraic and order properties, rational and irrational numbers), Absolute value, Triangle inequality, AM GM, Inequalities (simple cases), Complex numbers, Algebra of complex numbers, Conjugate and square root of a complex number, Cube roots of unity, De Moivre's theorem with simple application. Permutations and Combinations -simple applications, Binomial theorem for positive integral index, Identities involving binomial co-efficients.

Determinants and matrices: Determinants of third order, Minors and cofactors, Properties of determinants, Matrices upto third order, Types of matrices, algebra of matrix, adjoint and inverse of matrix, Application of determinants and matrices to the solution of linear equations (in three unknowns).

Trigonometry: Compound angles, Multiple and Submultiple angles, Solution of trigonometric equations, Properties of triangles, Inverse circular function, Sum and product of sine and cosine functions.

Co-ordinate geometry of two dimensions: Straight lines, Pairs of straight lines, Circles, Equations of tangents and normals to a circle, Equations of parabola, Ellipse and hyperbola in simple forms, their tangents and normals. Condition of tangency. Rectangular and Conjugate hyperbolas.

Coordinate geometry of three dimensions: Distance and Division formulae, Direction cosines and direction ratios, Projection, Angle between two planes, Angle between a line and a plane. Distance of a point from a line and a plane. Equation of a sphere – general equation, Equation of sphere when end points of diameter are given.

Quadratic polynomials: Roots of quadratic polynomial, Factorisation of quadratic polynomials, Maximum and minimum values of quadratic polynomials for all real values of the variable, sign of the quadratic polynomial for all real values of the variable, Solution of quadratic inequations.

Sequence and Series: Definition, Infinite geometric series, Arithmetico-geometric series, Exponential and Logarithmic series.

Vectors: Fundamentals, Dot and cross product of two vectors, Scalar triple product and vector triple product, Simple application of different products.

Differential calculus: Concept of limit, Continuity of functions, Derivative of standard Algebraic and Transcendental functions, Derivative of composite functions, functions in parametric form, Implicit differentiation, Successive differentiation (simple cases), Leibnitz theorem, Partial differentiation, Application of Euler's theorem, Derivative as a rate measure, Increasing and decreasing functions, Maxima and Minima, Indeterminate forms, Geometrical application of derivatives such as finding tangents and normals to plane curves.

Integral calculus: Standard methods of integration (substitution, by parts, by partial fraction, etc), Integration of rational, irrational functions and trigonometric functions. Definite integrals and properties of definite integrals, Areas under plane curves.

Differential equations: Definition, order, degree of a differential equation, General and particular solution of a differential equation, Formation of a differential equation, Solution of a differential equations by method of separation of variables, Homogeneous differential equations of first order and first degree, Linear differential equations of the form $dy/dx + p(x)y = q(x)$, Solutions of differential equations of the form $d^2y/dx^2 = f(x)$

Probability and statistics: Average (mean, median and mode). Dispersion (standard deviation and variance), Definition of probability, Mutually exclusive events, Independent events, Compound events, Conditional probability, Addition theorem.

Number system : Decimal, binary, octal, hexadecimal numbers and their conversion.

7.3.2. +3 Sc. / B.Sc. PHYSICS (15 Questions)

Mechanics: laws of motion, motion in a uniform field, components of velocity and acceleration in different coordinate systems. Motion under a central force, Kepler's law, Gravitational law and field. Potential due to a spherical body, Gauss and Poisson equations for gravitational self-energy. System of particles, center of mass, equation of motion, conservation of linear and angular

momenta, conservation of energy, elastic and inelastic collisions. Rigid body motion, rotational motion, moment of inertia and their products.

Oscillations: Harmonic oscillations, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system, simple and compound pendulum, torsional pendulum. Superposition of two simple harmonic motions of the same frequency along the same line, interference, superposition of two mutually perpendicular simple harmonic vibrations of the same frequency, Lissajous figures, case of different frequencies.

Motion of charged particles in electric and magnetic fields: E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as deflecting field-CRO, sensitivity. Properties of Matter: Elasticity, small deformations, Hooke's law, elastic constants for an isotropic solid, beams supported at both the ends, cantilever, torsion of a cylinder, bending moments and shearing forces. Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law. Capillarity, tube of flow, Reynold's number, Stokes law. Surface tension and surface energy, molecular interpretation of surface tension, pressure across a curved liquid surface, angle of contact and wetting.

Electrostatics: Coulomb's law (in vacuum) expressed in vector forms, calculation of E for simple distributions of charge at rest, dipole and quadrupole fields Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Electric potential, $E = -dV/dx$, Torque on a dipole in a uniform electric field and its energy, flux of the electric field, Gauss' law and its application for finding E for symmetric charge distributions, Gaussian pillbox, fields at the surface of a conductor. Screening of electric field by a conductor. Capacitors, electrostatic energy, force per unit area of the surface of a conductor in an electric field.

Electric Currents: Steady current, Current density vector J, non-steady currents and continuity equation, Kirchoff's law and analysis of multi-loop circuits, rise and decay of current in LR and CR circuits, decay constants, transients in LCR circuits, AC circuits, Complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor.

Magnetostatics: Force on a moving charge, Lorentz force equation and definition of B, force on a straight conductor carrying current in a uniform magnetic field, torque on a current loop, magnetic dipole moment, Biot and Savart's law, calculation of B in simple geometric situations, Ampere's law $\nabla \cdot B = 0$, $\nabla \times B = \mu_0 J$, field due to a magnetic dipole.

Time Varying Fields: Electromagnetic induction, Faraday's law, electromotive force $e = -\int E \cdot dr$, Integral and differential forms of Faraday's law, mutual and self inductance, transformers, energy in a static magnetic field, Maxwell's displacement current, Maxwell's equations, electromagnetic field, energy density.

Electromagnetic Waves: The wave equation satisfied by E and B, plane electromagnetic waves in vacuum, Poynting's vector.

Kinetic theory of Matter: Real gas: Van der Waals gas, equation of state, nature of Van der Waals forces, comparison with experimental P-V curves. The critical constants, distinction between gaseous and vapour state, Joule expansion of ideal gas, and of a Van der Waals gas, Joule coefficient, estimates of J-T cooling.

Thermodynamics: Blackbody radiation: energy distribution in blackbody spectrum. Planck's quantum postulates, Planck's law. Interpretation of behaviour of specific heats of gases at low temperature.

Kinetic Theory of Gases: Maxwellian distribution of speeds in an ideal gas: distribution of speeds and of velocities, distinction between mean, rms and most probable speed values.

Physical Optics: The principle of superpositions, Interference of a light, double-slit interference, coherence requirement for the sources, optical path retardation, lateral shift of fringes, Localized fringes: thin films, Michelson interferometer, Fresnel diffraction: Fresnel half-period zones, plates, straight edge, rectilinear propagation. Fraunhofer diffraction : Diffraction of a single slit, the intensity distribution, diffraction at a circular aperture and a circular disc.

Diffraction gratings: Diffraction at N parallel slits, intensity distribution, plane diffraction grating, polarization of transverse waves, plane, circular and elliptically polarized light. Polarization by

reflection and refraction. Double reflection and optical rotation: Refraction, in uniaxial crystals, its electromagnetic theory. Phase retardation plates, double image prism, rotation of plane of polarized light, origin of optical rotation in liquids and in crystals.

Quantum Mechanics: Origin of the quantum theory: failure of classical physics to explain the phenomena such as blackbody spectrum, photoelectric effect, Ritz combination principle in spectra, stability of an atom, Planck's radiation law, Einstein's explanation of photoelectric effect, Bohr's quantization of angular momentum and its applications to hydrogen atom, limitations of Bohr's theory. Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves, the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Consequence of de Broglie's concepts; quantization in hydrogen atom; quantized energy levels of a particle in a box, wave packets, Heisenberg's uncertainty relation for p and x , its extension to energy and time. Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit, particle in a box, position of electron in a Bohr orbit. Quantum Mechanics: Schrodinger's equation. Postulatory basis of quantum mechanics, operators, expectation values, transition probabilities, applications to particle in a one dimensional box, harmonic oscillator, reflection at a step potential, transmission across a potential barrier.

Weak spectra: continuous X-ray spectrum and its dependence on voltage, Characteristics X-rays. Moseley's law, Raman effect, Stokes and anti-Stokes lines, fission and fusion (concepts), energy production in stars by p-p and carbon cycles (concepts). Cyclotron.

Solid State Physics: X-ray diffraction, Bragg's law,

Magnetism: Atomic magnetic moment, magnetic susceptibility, Dia-Para-, and Ferromagnetism, Ferromagnetic domains, Hysteresis.

Band Structure: Energy bands, energy gap, metals, insulators, semiconductors.

Solid State Devices: Semiconductors - Intrinsic semiconductors, electrons and holes, Fermi level. Temperature dependence of electron and hole concentrations. Doping: impurity states, n and p type semiconductors.

Semiconductor devices: p-n junction, majority and minority charge carriers, junction diode, Zener diode.

Electronics: Power supply: diode as a circuit element, load line concept, rectification, ripple factor, Zener diode, voltage stabilization, IC voltage regulation, characteristics of a transistor in CB, CE and CC mode.

Field effect transistors: JFET volt-ampere curves, biasing JFET, RC coupled amplifier, gain, frequency response, input and output impedance.

7.3.3 +3 Sc. / B.Sc CHEMISTRY (15 Questions)

Thermodynamics: Definition of thermodynamic terms, systems, surroundings etc. Types of systems, intensive and extensive properties, state and path functions and their differentials, thermodynamic processes, concept of heat and work. First law of thermodynamics, statement, definition of internal energy, enthalpy, heat capacity, heat capacity at constant volume, constant pressure and their relation, Joule's law, Joule-Thomson coefficient and inversion temperature, calculation of w , q , U , H , for the expansion of ideal gases under isothermal and adiabatic conditions for reversible processes, Workdone in irreversible process.

Thermochemistry: standard state, standard enthalpy of formation, Hess's law of heat of summation and its application, heat of reaction at constant pressure and constant volume, enthalpy of neutralization, bond dissociation energy and its calculation from thermochemical data, temperature dependence of enthalpy. Kirchoff's equation.

Chemical equilibrium: Equilibrium constant and free energy. Derivation of law of mass action

(Study of homogeneous and heterogeneous equilibria). Le chatelier's principle.

Phase equilibrium: Statement and meaning of the terms - phase, component and degree of freedom, derivation of Gibbs phase rule, phase equilibrium of one component system - water and sulphur system.

Electrochemistry-I: Electrical transport-conduction in metals and in electrolyte solution, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of equivalent and specific conductance with dilution, migration of ions and Kohlrausch law, Arrhenius theory of electrolytic dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, its uses and limitations. Application of conductivity measurements, determination of degree of dissociation, determination of K_a of acids, Determination of solubility product of a sparingly soluble salt, conductometric titration.

Electrochemistry-II: Types of reversible electrodes- gas metal ion, meta-metal ion, metal-insoluble salt-anion and redox electrodes. Electrode reactions, Nernst equation, derivation of cell EMF and single electrode potential, standard hydrogen electrodes-reference electrodes, standard electrode potentials, sign conventions, electrochemical series and its significance, EMF of a cell and its measurements. Computation of cell EMF, concentration of cell with and without transport, liquid junction potential, definition of pH , and pK_a , determination of pH using hydrogen electrode, buffers-mechanism of buffer action, Henderson equation. Hydrolysis of salts (quantitative treatment), determination of pH , K_a , K_w and K_h by emf methods.

Atomic Structure: Idea of de Broglie matter waves, Heisenberg uncertainty principle, atomic orbitals, Schrodinger wave equation (Mathematical derivations excluded) significance of quantum numbers, shapes of s,p,d orbitals. Aufbau and Pauli exclusion principles, Hund's multiplicity rule. Electronic configurations of the elements.

Periodic Properties: Atomic and ionic radii, ionization enthalpy and electron – gain enthalpy, electronegativity-definition, methods of determination or evaluation, trends in periodic table and applications in predicting and explaining the chemical behaviour.

Chemical Bonding: Covalent Bond - valence bond theory and its limitations, directional characteristics of covalent bond, various types of hybridization and shapes of simple inorganic molecules and ions. Valence shell electron pair repulsion, (VSEPR) theory of NH_3 , H_3O^+ , SF_4 , ClF_3 , ICl_2 and H_2O . MO theory, homonuclear and heteronuclear (CO and NO) diatomic molecules.

s-Block Elements: Comparative study, diagonal relationships, salient features of hydrides, solvation and complexation tendencies including their function in biosystems,

p-Block Elements: Comparative study (including diagonal relationship) of groups 13-17 elements, compounds like hydrides, oxides, oxyacids and halides of groups 13-16, hydrides of boron-diborane, borazine, borohydrides, fullerenes, carbides, fluorocarbons, silicates (structural principle), basic properties of halogens, interhalogen compounds.

Chemistry of Noble Gases: Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds (fluorides and oxides), Chemistry of elements of first transition series. Characteristic properties of d-block elements.

Properties of the elements of the first transition series, their binary compounds and complexes illustrating relative stability of their oxidation states, coordination number and geometry.

Coordination Compounds: Werner's coordination theory and its experimental verification, effective atomic number concept, chelates, nomenclature of coordination compounds, isomerism in coordination compounds (4 and 6 only) valence bond theory of transition metal complexes.

Acids and Bases: Arrhenius, Bronsted-Lowry, Lewis concepts of acids and bases.

Structure, bonding and mechanism of Organic reactions:

Inductive effect, resonance, steric effect, influence of these effects on acidity, basicity and dipole moments, reactive intermediate- carbocations, carbanions, free-radicals and carbenes - formation, stability and structure, types and mechanism of organic reactions- SN_1 , SN_2 , SE_1 , SE_2 , E_1 , E_2 , AdE , AdN ,

Stereochemistry of Organic compounds: Concept of isomerism, types of isomerism, optical isomerism, elements of symmetry, molecular chirality, enantiomers, stereogenic center, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centers, diastereomers, meso compounds, relative and absolute configuration, sequence rules, D-L, R-S,

systems of nomenclature, geometric isomerism, determination of configuration of geometric isomers, E-Z system of nomenclature, conformational isomerism, conformational analysis of ethane and n-butane, conformations of cyclohexanes, axial and equatorial bonds, difference between conformation and configurations.

7.4 SYLLABI FOR LATERAL ENTRY (PHARMACY)

7.4.1 PAPER for Pharmacy (60 Questions)

The course content is same as the syllabus of part-I and part-II of Diploma in Pharmacy as per the Education Regulation – 1991 of Pharmacy Council of India.

7.5. SYLLABUS FOR MCA STREAM

7.5.1 MATHEMATICS (60 Questions)

Logic: Statement, Negation, Implication, Converse, Contrapositive, Conjunction, Disjunction, Truth Table. Different methods of proof, Principle of Mathematical induction.

Algebra of sets: Set operation, Union, Intersection, Difference, Symmetric difference, Complement, Venn diagram, Cartesian product of sets, Relation and functions, Equivalence relation, Kinds of functions and their domain and range, Composite function, Inverse of a function.

Number system: Real numbers (algebraic and order properties, rational and irrational numbers), Absolute value, Triangle inequality, $AM \geq GM$, Inequalities (simple cases), Complex numbers, Algebra of complex numbers, Conjugate and square root of a complex number, Cube roots of unity, De Moivre's theorem with simple application. Permutations and Combinations - simple applications, Binomial theorem for positive integral index, Identities involving binomial coefficients.

Determinants and matrices: Determinants of third order, Minors and cofactors, Properties of determinants, Matrices upto third order, Types of matrices, algebra of matrix, adjoint and inverse of matrix, Application of determinants and matrices to the solution of linear equations (in three unknowns).

Trigonometry: Compound angles, Multiple and Submultiple angles, Solution of trigonometric equations, Properties of triangles, Inverse circular function, Sum and product of sine and cosine functions.

Co-ordinate geometry of two dimensions: Straight lines, Pairs of straight lines, Circles, Equations of tangents and normals to a circle, Equations of parabola, Ellipse and hyperbola in simple forms, their tangents and normals. Condition of tangency. Rectangular and Conjugate hyperbolas.

Coordinate geometry of three dimensions: Distance and Division formulae, Direction cosines and direction ratios, Projection, Angle between two planes, Angle between a line and a plane. Distance of a point from a line and a plane. Equation of a sphere – general equation, Equation of sphere when end points of diameter are given.

Vectors: Fundamentals, Dot and cross product of two vectors, Scalar triple product and vector triple product, Simple application of different products.

Differential calculus: Concept of limit, Continuity of functions, Derivative of standard Algebraic and Transcendental functions, Derivative of composite functions, functions in parametric form, Implicit differentiation, Successive differentiation (simple cases), Leibnitz theorem, Partial differentiation, Application of Euler's theorem, Derivative as a rate measure, Increasing and decreasing functions, Maxima and Minima, Indeterminate forms, Geometrical application of derivatives such as finding tangents and normals to plane curves.

Integral calculus: Standard methods of integration (substitution, by parts, by partial fraction, etc), Integration of rational, irrational functions and trigonometric functions. Definite integrals and

properties of definite integrals, Areas under plane curves.

Differential equations: Definition, order, degree of a differential equation, Formation of a differential equation, Solution of a differential equations of the following types.

- (i) $dy/dx = f(x)$
- (ii) $dy/dx = f(x) g(y)$
- (iii) $d^2y/dx^2 = f(x)$

Probability and statistics: Average (mean, median and mode). Dispersion (standard deviation and variance), Definition of probability, Mutually exclusive events, Independent events, Compound events, Conditional probability, Addition theorem.

Number system: Decimal, binary, octal, hexadecimal numbers and their conversion.

7.5.2 COMPUTER AWARENESS (60 Questions)

COMPUTER AWARENESS:

Introduction to Computer: Brief history of Computers, Components of a Computer, Computer related general knowledge, Application of Computers, Classification of Computers, Windows.

Computer Arithmetic: Number System with general base, Number base conversion, Elementary arithmetic operation.

C Language: Keywords, Constants, Variables, Identifiers, operators, statements. Writing simple C program.

Arithmetic and logical expression, simple if, nested if, if-else-ladder, conditional operators, switch case, for, while and do while loops.

Concept of functions in C.

7.6 SYLLABUS FOR MBA (120 questions)

Questions will be meant to measure a person's general Entrance test in the following aspects:

No. of Questions

Verbal reasoning	40
Analytical reasoning	40
General Knowledge	10
Comprehension	20
Computer and Business fundamentals	10

7.6.1 Sample Questions:

A sample of questions is being provided for making the candidates aware of the style and difficulty level of the questions. The topics covered here in sample are not true indication of the syllabus and the test may contain questions from all related areas under different sections. The samples are given primarily to help the candidates understand the pattern of the test.

Section A: Verbal Reasoning

1. Identify the odd word
 - A. Sweep
 - B. wipe
 - C. Scrub
 - D. Stain
2. The place where bricks are baked
 - A. Foundry
 - B. Mint
 - C. Cemetery
 - D. Kiln
3. My watch is 6 minutes fast and the train which should have arrived at my station at 11.30 am was 5 minutes late. What time was it by my watch when the train arrived?
 - A. 11.41 am

- B. 11.40 am
- C. 11.38 am
- D. Don't Know

Section B: Analytical Reasoning

1. Which of the following ratio is greatest?
A . 7:15 B. 15:23
C. 17:25 D. 21:29
2. If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be:
A . 4 days B. 5 days C. 6 days D. 7 days
3. When the integer n is divided by 6, the remainder is 3. Which of the following is not a multiple of 6?
A . n-3 B. n+3 C. 2n D. 3n

Section C: General Knowledge

1. The term 'steeplechase' is associated with
A. Horse racing B. Boxing
C. Polo D. Rowing
2. The first indigenously built missile boat is named as:
A. INS Mani B. INS Shilpi
C. INS Bibhuti D. INS Vikrant
3. Central Salt and Marine Chemicals Research Institute is located at
A. Ahmedabad B. Bhavanagar
C. Gandhi Nagar D. Panaji

Section D: Comprehension

Speech is a great blessing but it can also be great curse, for which it helps us to make our intentions and desires known to our fellows, it can also, if we use it carelessly, make your attitude completely misunderstood. A slip of the tongue, the use of an unusual word, or of an ambiguous word and so on, may create an enemy where we had hope to win a friend. Again different classes of people use different vocabularies, and the ordinary speech of an educated man may strike an uneducated listener as pompous. Unwittingly we may use a word which bears a different meaning to our listener from what it does to men of our own class. Thus speech is not a gift to use lightly without thought, but one which demands careful handling. Only a fool will express himself alike to all kinds and conditions of men.

1. Speech can be a curse, because it can
A. reveal our intentions
B. lead to carelessness
C. hurt others
D. create misunderstanding
2. A 'slip of tongue' means something said
A. unintentionally
B. wrongly by chance
C. without giving proper thought
D. to hurt another person
3. The best way to win a friend is to avoid _____ in speech
A. ambiguity
B. verbosity
C. pomposity
D. irony

Section E: Computer & Business Fundamentals

1. The widely used code in data communication is
 - A. 8 bit ASCII
 - B. 7 bit ASCII
 - C. EBCDIC
 - D. None of these
2. Point of Sales terminal refers to
 - A. Terminal associated with MICR
 - B. Smart Terminal
 - C. Terminal associated with OCR
 - D. None of the above
3. How many Stock Exchanges are there in India?
 - A. 21
 - B. 22
 - C. 26
 - D. None of the above

7.7 SYLLABUS FOR Integrated MBA(5years) (60 questions)

Questions will be meant to measure a person's general Entrance test in the following aspects:

Section	No. of Questions
Verbal reasoning	15
Analytical reasoning	15
General Knowledge	15
Comprehension	15

7.8 Syllabus for MCA (Lateral Entry)

7.8.1 MATHEMATICS (60 Questions)

Logic: Statement, Negation, Implication, Converse, Contrapositive, Conjunction, Disjunction, Truth Table. Different methods of proof, Principle of Mathematical induction.

Algebra of sets: Set operation, Union, Intersection, Difference, Symmetric difference, Complement, Venn diagram, Cartesian product of sets, Relation and functions, Equivalence relation, Kinds of functions and their domain and range, Composite function, Inverse of a function.

Number system: Real numbers (algebraic and order properties, rational and irrational numbers), Absolute value, Triangle inequality, AM GM, Inequalities (simple cases), Complex numbers, Algebra of complex numbers, Conjugate and square root of a complex number, Cube roots of unity, De Moivre's theorem with simple application. Permutations and Combinations -simple applications, Binomial theorem for positive integral index, Identities involving binomial co-efficients.

Determinants and matrices: Determinants of third order, Minors and cofactors, Properties of determinants, Matrices upto third order, Types of matrices, algebra of matrix, adjoint and inverse of matrix, Application of determinants and matrices to the solution of linear equations (in three unknowns).

Trigonometry: Compound angles, Multiple and Submultiple angles, Solution of trigonometric equations, Properties of triangles, Inverse circular function, Sum and product of sine and cosine functions.

Co-ordinate geometry of two dimensions: Straight lines, Pairs of straight lines, Circles, Equations of tangents and normals to a circle, Equations of parabola, Ellipse and hyperbola in simple forms, their tangents and normals. Condition of tangency. Rectangular and Conjugate hyperbolas.

Coordinate geometry of three dimensions: Distance and Division formulae, Direction cosines and direction ratios, Projection, Angle between two planes, Angle between a line and a plane.

Distance of a point from a line and a plane. Equation of a sphere – general equation, Equation of sphere when end points of diameter are given.

Quadratic polynomials: Roots of quadratic polynomial, Factorisation of quadratic polynomials, Maximum and minimum values of quadratic polynomials for all real values of the variable, sign of the quadratic polynomial for all real values of the variable, Solution of quadratic inequations.

Sequence and Series: Definition, Infinite geometric series, Arithmetico-geometric series, Exponential and Logarithmic series.

Vectors: Fundamentals, Dot and cross product of two vectors, Scalar triple product and vector triple product, Simple application of different products.

Differential calculus: Concept of limit, Continuity of functions, Derivative of standard Algebraic and Transcendental functions, Derivative of composite functions, functions in parametric form, Implicit differentiation, Successive differentiation (simple cases), Leibnitz theorem, Partial differentiation, Application of Euler's theorem, Derivative as a rate measure, Increasing and decreasing functions, Maxima and Minima, Indeterminate forms, Geometrical application of derivatives such as finding tangents and normals to plane curves.

Integral calculus: Standard methods of integration (substitution, by parts, by partial fraction, etc), Integration of rational, irrational functions and trigonometric functions. Definite integrals and properties of definite integrals, Areas under plane curves.

Differential equations: Definition, order, degree of a differential equation, General and particular solution of a differential equation, Formation of a differential equation, Solution of a differential equations by method of separation of variables, Homogeneous differential equations of first order and first degree, Linear differential equations of the form $dy/dx + p(x)y = q(x)$, Solutions of differential equations of the form $d^2y/dx^2 = f(x)$

Probability and statistics: Average (mean, median and mode). Dispersion (standard deviation and variance), Definition of probability, Mutually exclusive events, Independent events, Compound events, Conditional probability, Addition theorem.

Number system: Decimal, binary, octal, hexadecimal numbers and their conversion.

7.8.2. COMPUTER AWARENESS: 60 questions

Introduction to Computer: Brief history of Computers, Components of a Computer, Computer related general knowledge, Application of Computers, Classification of Computers, Windows.

Computer Arithmetic: Number System with general base, Number base conversion, Elementary arithmetic operation.

C Language: Keywords, Constants, Variables, Identifiers, operators, statements. Writing simple C program. Arithmetic and logical expression, simple if, nested if, if-else-ladder, conditional operators, switch case, for, while and do while loops. Concept of functions in C.

C++ and data structure: Object oriented concepts and relationships, control structures, file concepts, Algorithm Analysis, linked list, stack, queue, binary tree, sorting and searching techniques.

Fundamentals of computer Organization and Networking: Sequential combinational circuits, Flip flops, Memory, K-map, Addressing modes, Fetch and execution cycle. OSI model, topologies and protocols, Internet protocols, Ipv4/Ipv6, Introductory concept on Network Security.

Introduction to Operating systems: Resource Management, types of operating systems, DOS and Unix commands,

Logical reasoning and verbal abilities: Data Interpretations, Series brain teasing problem

7.9 Syllabus for PGAT-2016:

PGAT TEST for M. Tech / M. Arch will be of 2 hours duration **containing 90 questions. Out of this 90 questions,**

30 questions will be common to all branches of PGAT candidates.

(a) 20 Engineering Mathematics

(b) 10 Analytical and Logical Reasoning.

60 questions will of Branch specialization.

For M Pharm it will be 1 hour examination and of 60 questions from the branch alone.

M PLAN:

Entrance Test: Candidate has to appear PGAT entrance test of 1 hour duration, 60 Multiple Choice Questions.

10 questions will be of Logical Reasoning type, 10 questions will be Arithmetic reasoning and 40 questions will be of basic Architectural concept related.

7.9.1. All candidates seeking admission to 1st year Master Degree courses in Engineering/ Technology/ Architecture will have to appear the respective courses of examination suitably choosing the question they want to appear as it will decide the M Tech branch they will be eligible for. (Refer Table-12: Admission to First Year M. Tech / M. Pharm / M. Arch/ M Plan)

7.9.2. Candidates seeking admission to M. Pharm course have to appear 60 questions. The syllabus is as per BPUT B. Pharm.

7.9.3. Detailed Syllabi for the PGAT Test is mentioned below, branch wise.

7.9.4. ENGINEERING MATHEMATICS (Common Question of 20 nos. for all branches excepting M. Pharm)

Ordinary Differential Equations : First order differential equations, separable equations, exact differential equations.

Linear differential equations of second and higher order, homogeneous equation with constant co-efficients. Euler Cauchy equations, solution by undetermined co-efficients, solution by variation of parameters.

Linear algebra: matrices, vectors, determinants and linear system of equations, matrices and linear system of equations, matrix eigen value problems, symmetric, skew symmetric and orthogonal matrices.

Fourier series: Fourier series, Expansions functions of any period, even and odd functions, half range expansion.

Laplace transformation and its use in solving differential equations. Convolution integral equations.

1. Syllabus for Architecture (AR)

City planning: Evolution of cities; principles of city planning; types of cities & new towns; planning regulations and building byelaws; eco-city concept; sustainable development.

Housing: Concept of housing; neighbourhood concept; site planning principles; housing typology; housing standards; housing infrastructure; housing policies, finance and management; housing programs in India; self help housing.

Landscape Design: Principles of landscape design and site planning; history of landscape styles; landscape elements and materials; plant characteristics & planting design; environmental considerations in landscape planning.

Computer Aided Design: Application of computers in architecture and planning; understanding elements of hardware and software; computer graphics; programming languages – C and Visual Basic and usage of packages such as AutoCAD, 3D-Studio, 3D Max.

Environmental Studies in Building Science: Components of Ecosystem; ecological principles

concerning environment; climate responsive design; energy efficient building design; thermal comfort; solar architecture; principles of lighting and styles for illumination; basic principles of architectural acoustics; environment pollution, their control & abatement.

Visual and Urban Design: Principles of visual composition; proportion, scale, rhythm, symmetry, harmony, datum, balance, form, colour, texture; sense of place and space, division of space; barrier free design; focal point, vista, image ability, visual survey, figure-background relationship.

History of Architecture: *Indian* – Indus valley, Vedic, Buddhist, Indo-Aryan, Dravidian and Mughal periods; *European* – Egyptian, Greek, Roman, medieval and renaissance periods- construction and architectural styles; vernacular and traditional architecture.

Development of Contemporary Architecture: Architectural developments and impacts on society since industrial revolution; influence of modern art on architecture; works of national and international architects; art nouveau, eclecticism, international styles, post modernism, deconstruction in architecture.

Building Services: Water supply, sewerage and drainage systems; sanitary fittings and fixtures; plumbing systems, principles of internal & external drainage systems, principles of electrification of buildings, intelligent buildings; elevators & escalators, their standards and uses; air-conditioning systems; fire fighting systems, building safety and security systems.

Building Construction and Management: Building construction techniques, methods and details; building systems and prefabrication of building elements; principles of modular coordination; estimation, specification, valuation, professional practice; project management techniques e.g., PERT, CPM etc;

Materials and Structural Systems: Behavioural characteristics of all types of building materials e.g. mud, timber, bamboo, brick, concrete, steel, glass, FRP, different polymers, composites; principles of strength of materials; design of structural elements in wood, steel and RCC; elastic and limit state design; complex structural systems; principles of pre-stressing; tall buildings; principles of disaster resistant structures.

Planning Theory: Regional planning; settlement system planning; history of human settlements; growth of cities & metropolises; principles of Ekistics; rural-urban migration; urban conservation; urban renewal; Five-year plan; structural and sectoral plan.

Techniques of Planning: Planning survey techniques; preparation of urban and regional structure plans, development plans, action plans; site planning principles and design; statistical methods of data.

Traffic and Transportation Planning: Principles of traffic engineering and transportation planning; traffic survey methods; design of roads, intersections, grade separators and parking areas; hierarchy of roads and levels of services; traffic and transport management in urban areas, intelligent transportation system; mass transportation planning; para-transits and other modes of transportation, pedestrian & slow moving traffic planning.

Infrastructure, Services and Amenities: Principles of water supply and sanitation systems; water treatment; solid waste disposal systems; waste treatment, recycle & reuse; urban rainwater harvesting; power supply and communication systems — network, design & guidelines; demography related standards at various levels of the settlements for health, education, recreation, religious & public-semi public facilities.

Development Administration and Management: Planning laws; development control and zoning regulations; laws relating to land acquisition; development enforcements, urban land ceiling; land management techniques; planning and municipal administration; disaster mitigation management; 73rd & 74th Constitutional amendments; valuation & taxation; revenue resources and fiscal management; public participation and role of NGO & CBO; Institutional networking & capacity building.

2. Syllabus for Chemical Engineering (CHE)

Process Calculations and Thermodynamics: Laws of conservation of mass and energy; use of tie components; recycle, bypass and purge calculations; degree of freedom analysis. First and Second laws of

thermodynamics. First law application to close and open systems. Second law and Entropy. Thermodynamic properties of pure substances: equation of state and departure function, properties of mixtures: partial molar properties, fugacity, excess properties and activity coefficients; phase equilibria: predicting VLE of systems; chemical reaction equilibria.

Fluid Mechanics and Mechanical Operations: Fluid statics, Newtonian and non-Newtonian fluids, Bernoulli equation, Macroscopic friction factors, energy balance, dimensional analysis, shell balances, flow through pipeline systems, flow meters, pumps and compressors, packed and fluidized beds, elementary boundary layer theory, size reduction and size separation; free and hindered settling; centrifuge and cyclones; thickening and classification, filtration, mixing and agitation; conveying of solids.

Heat Transfer: Conduction, convection and radiation, heat transfer coefficients, steady and unsteady heat conduction, boiling, condensation and evaporation; types of heat exchangers and evaporators and their design.

Mass Transfer: Fick's laws, molecular diffusion in fluids, mass transfer coefficients, film, penetration and surface renewal theories; momentum, heat and mass transfer analogies; stagewise and continuous contacting and stage efficiencies; HTU & NTU concepts design and operation of equipment for distillation, absorption, leaching, liquid-liquid extraction, drying, humidification, dehumidification and adsorption.

Chemical Reaction Engineering: Theories of reaction rates; kinetics of homogeneous reactions, interpretation of kinetic data, single and multiple reactions in ideal reactors, non-ideal reactors; residence time distribution, single parameter model; non-isothermal reactors; kinetics of heterogeneous catalytic reactions; diffusion effects in catalysis.

Instrumentation and Process Control: Measurement of process variables; sensors, transducers and their dynamics, transfer functions and dynamic responses of simple systems, process reaction curve, controller modes (P, PI, and PID); control valves; analysis of closed loop systems including stability, frequency response and controller tuning, cascade, feed forward control.

Plant Design and Economics: Process design and sizing of chemical engineering equipment such as compressors, heat exchangers, multistage contactors; principles of process economics and cost estimation including total annualized cost, cost indexes, rate of return, payback period, discounted cash flow, optimization in design.

Chemical Technology: Inorganic chemical industries; sulfuric acid, NaOH, fertilizers (Ammonia, Urea, SSP and TSP); natural products industries (Pulp and Paper, Sugar, Oil, and Fats); petroleum refining and petrochemicals; polymerization industries; polyethylene, polypropylene, PVC and polyester synthetic fibers. analysis; application of G.I.S and remote sensing techniques in urban and regional planning; decision making models.

3.Syllabus for Civil Engineering (CE)

STRUCTURAL ENGINEERING

Mechanics: Bending moment and shear force in statically determinate beams. Simple stress and strain relationship: Stress and strain in two dimensions, principal stresses, stress transformation, Mohr's circle. Simple bending theory, flexural and shear stresses, unsymmetrical bending, shear centre. Thin walled pressure vessels, uniform torsion, buckling of column, combined and direct bending stresses. **Structural Analysis:** Analysis of statically determinate trusses, arches, beams, cables and frames, displacements in statically determinate structures and analysis of statically indeterminate structures by force/ energy methods, analysis by displacement methods (slope deflection and moment distribution methods), influence lines for determinate and indeterminate structures. Basic concepts of matrix methods of structural analysis.

Concrete Structures: Concrete Technology- properties of concrete, basics of mix design. Concrete design- basic working stress and limit state design concepts, analysis of ultimate load capacity and design of members subjected to flexure, shear, compression and torsion by limit state methods. Basic elements of prestressed concrete, analysis of beam sections at transfer and service loads.

Steel Structures: Analysis and design of tension and compression members, beams and beam- columns, column bases. Connections- simple and eccentric, beam-column connections, plate girders and

trusses. Plastic analysis of beams and frames.

GEOTECHNICAL ENGINEERING

Soil Mechanics: Origin of soils, soil classification, three-phase system, fundamental definitions, relationship and interrelationships, permeability & seepage, effective stress principle, consolidation, compaction, shear strength.

Foundation Engineering: Sub-surface investigations- scope, drilling bore holes, sampling, penetration tests, plate load test. Earth pressure theories, effect of water table, layered soils. Stability of slopes- infinite slopes, finite slopes. Foundation types- foundation design requirements. Shallow foundations- bearing capacity, effect of shape, water table and other factors, stress distribution, settlement analysis in sands & clays. Deep foundations- pile types, dynamic & static formulae, load capacity of piles in sands & clays, negative skin friction.

WATER RESOURCES ENGINEERING

Fluid Mechanics and Hydraulics: Properties of fluids, principle of conservation of mass, momentum, energy and corresponding equations, potential flow, applications of momentum and Bernoulli's equation, laminar and turbulent flow, flow in pipes, pipe networks. Concept of boundary layer and its growth. Uniform flow, critical flow and gradually varied flow in channels, specific energy concept, hydraulic jump. Forces on immersed bodies, flow measurements in channels, tanks and pipes. Dimensional analysis and hydraulic modeling. Kinematics of flow, velocity triangles and specific speed of pumps and turbines.

Hydrology: Hydrologic cycle, rainfall, evaporation, infiltration, stage discharge relationships, unit hydrographs, flood estimation, reservoir capacity, reservoir and channel routing. Well hydraulics. **Irrigation:** Duty, delta, estimation of evapo-transpiration. Crop water requirements. Design of: lined and unlined canals, waterways, head works, gravity dams and spillways. Design of weirs on permeable foundation. Types of irrigation system, irrigation methods. Water logging and drainage, sodic soils.

ENVIRONMENTAL ENGINEERING

Water requirements: Quality standards, basic unit processes and operations for water treatment. Drinking water standards, water requirements, basic unit operations and unit processes for surface water treatment, distribution of water. Sewage and sewerage treatment, quantity and characteristics of wastewater. Primary, secondary and tertiary treatment of wastewater, sludge disposal, effluent discharge standards. Domestic wastewater treatment, quantity of characteristics of domestic wastewater, primary and secondary treatment Unit operations and unit processes of domestic wastewater, sludge disposal.

Air Pollution: Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits.

Municipal Solid Wastes: Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal).

Noise Pollution: Impacts of noise, permissible limits of noise pollution, measurement of noise and control of noise pollution.

TRANSPORTATION ENGINEERING

Highway Planning: Geometric design of highways, testing and specifications of paving materials, design of flexible and rigid pavements.

Traffic Engineering: Traffic characteristics, theory of traffic flow, intersection design, traffic signs and signal design, highway capacity.

4. Syllabus for Computer Science /Information Technology (CSE/IT)

Digital Logic: Logic functions, Minimization, Design and synthesis of combinational and sequential

circuits; Number representation and computer arithmetic (fixed and floating point).

Computer Organization and Architecture: Machine instructions and addressing modes, ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Instruction pipelining, Cache and main memory, Secondary storage.

Programming and Data Structures: Programming in C; Functions, Recursion, Parameter passing, Scope, Binding; Abstract data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps.

Algorithms: Analysis, Asymptotic notation, Notions of space and time complexity, Worst and average case analysis; Design: Greedy approach, Dynamic programming, Divide-and-conquer; Tree and graph traversals, Connected components, Spanning trees, Shortest paths; Hashing, Sorting, Searching. Asymptotic analysis (best, worst, average cases) of time and space, upper and lower bounds, Basic concepts of complexity classes – P, NP, NP-hard, NP-complete.

Theory of Computation: Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability.

Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization.

Operating System: Processes, Threads, Inter-process communication, Concurrency, Synchronization, Deadlock, CPU scheduling, Memory management and virtual memory, File systems, I/O systems, Protection and security.

5. Syllabus for Electrical Engineering (EE)

Electric Circuits and Fields: Network graph, KCL, KVL, node and mesh analysis, transient response of dc and ac networks; sinusoidal steady-state analysis, resonance, basic filter concepts; ideal current and voltage sources, Thevenin's, Norton's and Superposition and Maximum Power Transfer theorems, two-port networks, three phase circuits; Gauss Theorem, electric field and potential due to point, line, plane and spherical charge distributions; Ampere's and Biot-Savart's laws; inductance; dielectrics; capacitance.

Signals and Systems: Representation of continuous and discrete-time signals; shifting and scaling operations; linear, time-invariant and causal systems; Fourier series representation of continuous periodic signals; sampling theorem; Fourier, Laplace and Z transforms.

Electrical Machines: Single phase transformer – equivalent circuit, phasor diagram, tests, regulation and efficiency; three phase transformers – connections, parallel operation; auto-transformer; energy conversion principles; DC machines – types, windings, generator characteristics, armature reaction and commutation, starting and speed control of motors; three phase induction motors – principles, types, performance characteristics, starting and speed control; single phase induction motors; synchronous machines – performance, regulation and parallel operation of generators, motor starting, characteristics and applications; servo and stepper motors.

Power Systems: Basic power generation concepts; transmission line models and performance; cable performance, insulation; corona and radio interference; distribution systems; per-unit quantities; bus impedance and admittance matrices; load flow; voltage control; power factor correction; economic operation; symmetrical components; fault analysis; principles of over-current, differential and distance protection; solid state relays and digital protection; circuit breakers; system stability concepts, swing curves and equal area criterion; HVDC transmission and FACTS concepts.

Control Systems: Principles of feedback; transfer function; block diagrams; steady-state errors; Routh and Niquist techniques; Bode plots; root loci; lag, lead and lead-lag compensation; state space model; state transition matrix, controllability and observability.

Electrical and Electronic Measurements: Bridges and potentiometers; PMMC, moving iron, dynamometer and induction type instruments; measurement of voltage, current, power, energy and power factor; instrument transformers; digital voltmeters and multimeters; phase, time and frequency measurement; Q-meters; oscilloscopes; potentiometric recorders; error analysis.

Analog and Digital Electronics: Characteristics of diodes, BJT, FET; amplifiers – biasing, equivalent circuit and

frequency response; oscillators and feedback amplifiers; operational amplifiers – characteristics and applications; simple active filters; VCOs and timers; combinational and sequential logic circuits; multiplexer; Schmitt trigger; multi-vibrators; sample and hold circuits; A/D and D/A converters; 8-bit microprocessor basics, architecture, programming and interfacing.

Power Electronics and Drives: Semiconductor power diodes, transistors, thyristors, triacs, GTOs, MOSFETs and IGBTs – static characteristics and principles of operation; triggering circuits; phase control rectifiers; bridge converters – fully controlled and half controlled; principles of choppers and inverters; basic concepts of adjustable speed dc and ac drives.

6. Syllabus for Mechanical Engineering (ME)

APPLIED MECHANICS AND DESIGN

Engineering Mechanics: Free body diagrams and equilibrium; trusses and frames; kinematics and dynamics of particles and of rigid bodies in plane motion, including impulse and momentum (linear and angular) and energy formulations; impact.

Strength of Materials: Stress and strain, stress-strain relationship and elastic constants, Mohr's circle for plane stress and plane strain, thin cylinders; shear force and bending moment diagrams; bending and shear stresses; deflection of beams; torsion of circular shafts; Euler's theory of columns; strain energy methods; thermal stresses.

Theory of Machines: Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of slider-crank mechanism; gear trains; flywheels.

Vibrations: Free and forced vibration of single degree of freedom systems; effect of damping; vibration isolation; resonance, critical speeds of shafts.

Design: Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram; *principles* of the design of machine elements such as bolted, riveted and welded joints, shafts, spur gears, rolling and sliding contact bearings, brakes and clutches.

FLUID MECHANICS AND THERMAL SCIENCES

Fluid Mechanics: Fluid properties; fluid statics, manometry, buoyancy; control-volume analysis of mass, momentum and energy; fluid acceleration; differential equations of continuity and momentum; Bernoulli's equation; viscous flow of incompressible fluids; boundary layer; elementary turbulent flow; flow through pipes, head losses in pipes, bends etc.

Heat-Transfer: Modes of heat transfer; one dimensional heat conduction, resistance concept, electrical analogy, unsteady heat conduction, fins; dimensionless parameters in free and forced convective heat transfer, various correlations for heat transfer in flow over flat plates and through pipes; thermal boundary layer; effect of turbulence; radiative heat transfer, black and grey surfaces, shape factors, network analysis; heat exchanger performance, LMTD and NTU methods.

Thermodynamics: Zeroth, First and Second laws of thermodynamics; thermodynamic system and processes; Carnot cycle. Irreversibility and availability; behaviour of ideal and real gases, properties of pure substances, calculation of work and heat in ideal processes; analysis of thermodynamic cycles related to energy conversion.

Applications: *Power Engineering:* Steam Tables, Rankine, Brayton cycles with regeneration and reheat. *I.C. Engines:* air-standard Otto, Diesel cycles. *Refrigeration and air-conditioning:* Vapour refrigeration cycle, heat pumps, gas refrigeration, Reverse Brayton cycle; moist air: psychrometric chart, basic psychrometric processes. *Turbomachinery:* Pelton-wheel, Francis and Kaplan turbines — impulse and reaction principles, velocity diagrams.

MANUFACTURING AND INDUSTRIAL ENGINEERING

Engineering Materials: Structure and properties of engineering materials, heat treatment, stress-strain diagrams for engineering materials.

Metal Casting: Design of patterns, moulds and cores; solidification and cooling; riser and gating design, design considerations.

Forming: Plastic deformation and yield criteria; fundamentals of hot and cold working processes; load estimation for bulk (forging, rolling, extrusion, drawing) and sheet (shearing, deep drawing, bending) metal forming processes; principles of powder metallurgy.

Joining: Physics of welding, brazing and soldering; adhesive bonding; design considerations in welding.

Machining and Machine Tool Operations: Mechanics of machining, single and multi-point cutting tools, tool geometry and materials, tool life and wear; economics of machining; principles of non-traditional machining processes; principles of work holding, principles of design of jigs and fixtures

Metrology and Inspection: Limits, fits and tolerances; linear and angular measurements; comparators; gauge design; interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly.

Computer Integrated Manufacturing: Basic concepts of CAD/CAM and their integration tools.

Production Planning and Control: Forecasting models, aggregate production planning, scheduling, materials requirement planning.

Inventory Control: Deterministic and probabilistic models; safety stock inventory control systems.

Operations Research: Linear programming, simplex and duplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.

7. Syllabus for Metallurgical Engineering (MTE)

Thermodynamics and Rate Processes: Laws of thermodynamics, activity, equilibrium constant, applications to metallurgical systems, solutions, phase equilibria, Ellingham and phase stability diagrams, thermodynamics of surfaces, interfaces and defects, adsorption and segregation; basic kinetic laws, order of reactions, rate constants and rate limiting steps; principles of electro chemistry- single electrode potential, electro-chemical cells and polarizations, aqueous corrosion and protection of metals, oxidation and high temperature corrosion – characterization and control; heat transfer – conduction, convection and heat transfer coefficient relations, radiation, mass transfer – diffusion and Fick's laws, mass transfer coefficients; momentum transfer – concepts of viscosity, shell balances, Bernoulli's equation, friction factors.

Extractive Metallurgy: Minerals of economic importance, comminution techniques, size classification, Flotation, gravity and other methods of mineral processing; agglomeration, pyro- hydro- and electro-metallurgical processes; material and energy balances; principles and processes for the extraction of non-ferrous metals – aluminium, copper, zinc, lead, magnesium, nickel, titanium and other rare metals; iron and steel making – principles, role structure and properties of slags, metallurgical coke, blast furnace, direct reduction processes, primary and secondary steel making, ladle metallurgy operations including deoxidation, desulphurization, sulphide shape control, inert gas rinsing and vacuum reactors; secondary refining processes including AOD, VAD, VOD, VAR and ESR; ingot and continuous casting; stainless steel making, furnaces and refractories.

Physical Metallurgy: Crystal structure and bonding characteristics of metals, alloys, ceramics and polymers, structure of surfaces and interfaces, nano-crystalline and amorphous structures; solid solutions; solidification; phase transformation and binary phase diagrams; principles of heat treatment of steels, cast iron and aluminum alloys; surface treatments; recovery, recrystallization and grain growth; industrially important ferrous and non-ferrous alloys; elements of X-ray and electron diffraction; principles of scanning and transmission electron microscopy; industrial ceramics, polymers

and composites; electronic basis of thermal, optical, electrical and magnetic properties of materials; electronic and opto-electronic materials.

Mechanical Metallurgy: Elasticity, yield criteria and plasticity; defects in crystals; elements of dislocation theory – types of dislocations, slip and twinning, source and multiplication of dislocations, stress fields around dislocations, partial dislocations, dislocation interactions and reactions; strengthening mechanisms; tensile, fatigue and creep behaviour; super-plasticity; fracture – Griffith theory, basic concepts of linear elastic and elasto-plastic fracture mechanics, ductile to brittle transition, fracture toughness; failure analysis; mechanical testing – tension, compression, torsion, hardness, impact, creep, fatigue, fracture toughness and formability.

Manufacturing Processes: Metal casting – patterns and moulds including mould design involving feeding, gating and risering, melting, casting practices in sand casting, permanent mould casting, investment casting and shell moulding, casting defects and repair; hot, warm and cold working of metals, Metal forming – fundamentals of metal forming processes of rolling, forging, extrusion, wire drawing and sheet metal forming, defects in forming; Metal joining – soldering, brazing and welding, common welding processes of shielded metal arc welding, gas metal arc welding, gas tungsten arc welding and submerged arc welding; welding metallurgy, problems associated with welding of steels and aluminium alloys, defects in welded joints; powder metallurgy; NDT using dye-penetrant, ultrasonic, radiography, eddy current, acoustic emission and magnetic particle methods.

8. Syllabus for Textile Engineering (TE)

Textile Fibres: Classification of textile fibres; Essential requirements of fibre forming polymers; Gross and fine structure of natural fibres like cotton, wool and silk. Introduction to important bastfibres; properties and uses of natural and man-made fibres; physical and chemical methods of fibre and blend identification and blend analysis. Molecular architecture, amorphous and crystalline phases, glass transition, plasticization, crystallization, melting, factors affecting T_g and T_m ; Process of viscose and acetate preparation. Polymerization of nylon-6, nylon-66, poly (ethylene terephthalate), polyacrylonitrile and polypropylene; Melt Spinning processes, characteristic features of PET, polyamide and polypropylene spinning; wet and dry spinning of viscose and acrylic fibres; post spinning operations such as drawing, heat setting, tow- to-top conversion and different texturing methods. Methods of investigating fibre structure e.g., Density, X-ray diffraction, birefringence, optical and electron microscopy, I.R. absorption, thermal methods (DSC, DMA/TMA, TGA); structure and morphology of man-made fibres, mechanical properties of fibres, moisture sorption in fibres; fibre structure and property correlation.

Yarn manufacture and yarn structure & properties: Principles of opening, cleaning and mixing/blending of fibrous materials, working principle of modern opening and cleaning equipments; the technology of carding, carding of cotton and synthetic fibres; Drafting operation, roller and apron drafting principle, causes of mass irregularity introduced by drafting; roller arrangements in drafting systems; principles of cotton combing, combing cycle, mechanism and function, combing efficiency, lap preparation; recent developments in comber; Roving production, mechanism of bobbin building, roving twist; Principle of ring spinning, forces acting on yarn and traveler; ring & traveler designs; mechanism of cop formation, causes of end breakages; working principle of ring doubler and two for one twister, single and folded yarn twist, properties of double yarns, production of core spun yarn, compact spinning, principle of non conventional methods of yarn production such as rotor spinning, air jet spinning, wrap spinning, twist less spinning and friction spinning. Yarn contraction, yarn diameter, specific volume & packing coefficient; twist strength relationship in spun yarns; fibre configuration and orientation in yarn; cause of fibre migration and its estimation, irregularity index, properties of ring, rotor and air-jet yarns.

Fabric manufacture and Fabric Structure: Principles of cheese and cone winding processes and machines; random and precision winding; package faults and their remedies; yarn clearers and tensioners; different systems of yarn splicing; features of modern cone winding machines; different types of warping creels; features of modern beam and sectional warping machines; different sizing systems, sizing of spun and filament yarns, modern sizing machines; principles of pirn winding processes and machines; primary and secondary motions of loom, effect of their settings and timings on fabric formation, fabric appearance and weaving performance; dobby and jacquard shedding; mechanics of weft insertion with shuttle; warp and weft stop motions, warp protection, weft replenishment; functional principles of weft insertion systems of shuttle-less weaving machines, principles of multiphase and circular looms. Principles of weft and warp knitting; basic weft and warp knitted structures. Classification, production and areas of application of nonwoven fabrics. Basic woven fabric constructions and their derivatives; crepe, cord, terry, gauze, leno and double cloth constructions. Peirce's equations for fabric geometry; elastica model of plain woven fabrics; thickness, cover and maximum sett of woven fabrics.

Textile Testing: Sampling techniques, sample size and sampling errors. Measurement of fibre length,

fineness, crimp, strength and reflectance; measurement of cotton fibre maturity and trash content; HVI and AFIS for fibre testing. Measurement of yarn count, twist and hairiness; tensile testing of fibres, yarns and fabrics; evenness testing of slivers, rovings and yarns; testing equipment for measurement test methods of fabric properties like thickness, compressibility, air permeability, drape, crease recovery, tear strength, bursting strength and abrasion resistance. FAST and Kawabata instruments and systems for objective fabric evaluation. Statistical data analysis of experimental results. Correlation analysis, significance tests and analysis of variance; frequency distributions and control charts.

Preparatory Processes: Chemistry and practice of preparatory processes for cotton, wool and silk. Mercerization of cotton. Preparatory processes for nylon, polyester and acrylic and polyester/cotton blends.

Dyeing: Classification of dyes. Dyeing of cotton, wool, silk, polyester, nylon and acrylic with appropriate dye classes. Dyeing polyester/cotton and polyester/wool blends. Batchwise and continuous dyeing machines. Dyeing of cotton knitted fabrics and machines used. Dye fibre interaction. Introduction to thermodynamics and kinetics of dyeing. Methods for determination of wash, light and rubbing fastness. Evaluation of fastness properties with the help of grey scale.

Printing: Styles of printing. Printing thickeners including synthetic thickeners. Printing auxiliaries. Printing of cotton with reactive dyes. Printing of wool, silk, nylon with acid and metal complex dyes. Printing of polyester with disperse dyes. Methods of dye fixation after printing. Resist and discharge printing of cotton, silk and polyester. Printing of polyester/cotton blends with disperse/reactive combination. Transfer printing of polyester. Developments in inkjet printing.

9. Syllabus for Electronics Engineering (ELE)

Network: Mesh and nodal Analysis, Network theorems: superposition, Thevenin and Norton's maximum power transfer, Wye-Delta transformation. Steady state sinusoidal analysis using phasors. Linear constant coefficient differential equations; time domain analysis of simple RLC circuits, Solution of network equations using Laplace transform: frequency domain analysis of RLC circuits. 2-port network parameters: driving point and transfer functions. State equations for networks. Series and parallel resonance

Analog Electronics: Energy bands in silicon, intrinsic and extrinsic silicon. Carrier transport in silicon: diffusion current, drift current, mobility, and resistivity. Generation and recombination of carriers. p-n junction diode, Zener diode, tunnel diode Characteristics of diode, BJT, JFET and MOSFET. Diode circuits. Transistors at low and high frequencies, Amplifiers, single and multi-stage. Feedback amplifiers. Operational amplifiers, characteristics and circuit configurations. Precision rectifier. V-to-I and I-to- V converter. Op-Amp based active filters. Oscillators and signal generators.

Digital Electronics: Boolean algebra, minimization of Boolean functions; logic gates; digital IC families (DTL, TTL, ECL, MOS, CMOS). Combinatorial circuits: arithmetic circuits, code converters, multiplexers, decoders, Sequential circuits: latches and flip-flops, counters and shift-registers. Sample and hold circuits, ADCs, DACs. Semiconductor memories. Microprocessor (8085): architecture, programming, memory and I/O interfacing.

Signals, Systems and Communications: Periodic and aperiodic signals. continuous-time and discrete-time Fourier series, continuous-time and discrete-time Fourier Transform, DFT and FFT, z-transform., transfer function, Impulse and frequency response of first- and second order systems. Convolution, correlation and characteristics of linear time invariant systems. Pulse transfer function. IIR and FIR filters. Amplitude and frequency modulation and demodulation. Sampling theorem, pulse code modulation. Frequency and time division multiplexing. Amplitude shift keying, frequency shift keying and pulse shift keying for digital modulation.

Control Systems:

Open loop and closed loop (feedback) systems and stability analysis of these systems. Signal flow graphs and their use in determining transfer functions of systems; transient and steady state analysis of LTI control systems and frequency response. Tools and techniques for LTI control system analysis: root loci, Routh-Hurwitz

criterion, Bode and Nyquist plots. Control system compensators: elements of lead and lag compensation, elements of Proportional-Integral-Derivative (PID) control. State variable representation and solution of state equation of LTI control systems.

Electromagnetics:

Elements of vector calculus: divergence and curl; Gauss' and Stokes' theorems, Maxwell's equations: differential and integral forms. Wave equation, Poynting vector. Plane waves: propagation through various media; reflection and refraction; phase and group velocity; skin depth.

10. Syllabus for Biotechnology (BT)

Microbiology: Prokaryotic and eukaryotic cell structure; Microbial nutrition, growth; Microbial metabolism (aerobic and anaerobic respiration, photosynthesis); Nitrogen fixation; Chemical basis of mutations and mutagens; Microbial genetics (plasmids, transformation, transduction, conjugation); Viruses, Bacteria

Biochemistry: Biomolecules and their conformation; Weak inter-molecular interactions in biomacromolecules; Chemical and functional nature of enzymes; Kinetics of single substrate and bi-substrate enzyme catalyzed reactions; Bioenergetics; Metabolism (Glycolysis, TCA and Oxidative phosphorylation); Membrane transport and pumps; Cell cycle and cell growth control;

Molecular Biology and Genetics: Molecular structure of genes and chromosomes; DNA replication and control; Transcription and its control; Translational processes, Mendelian inheritance; Linkage, recombination and chromosome mapping; Chromosomal variation; Molecular basis of genetic diseases and applications.

Process Biotechnology: Bioprocess technology for the production of cell biomass and primary/secondary metabolites, such as baker's yeast, ethanol, citric acid, amino acids, , antibiotics; Chromatographic and membrane based bioseparation methods; Immobilization of enzymes and cells and their application for bioconversion processes. Aerobic and anaerobic biological processes for stabilization of solid / liquid wastes; Bioremediation.

Bioprocess Engineering: Kinetics of microbial growth, substrate utilization and product formation; Simple structured models; Sterilization; Batch, fed-batch and continuous processes; Mass transfer in bioreactors; Scale-up concepts; Various types of microbial and enzyme reactors; Instrumentation in bioreactors.

Plant and Animal Biotechnology: Special features and organization of plant cells; Totipotency; Regeneration of plants; Autotrophic and heterotrophic growth; Plant growth regulators and elicitors; Production of secondary metabolites by plant suspension cultures, Techniques in raising transgenics.

Characteristics of animal cells: Metabolism, regulation and nutritional requirements for mass cultivation of animal cell cultures; Kinetics of cell growth and product formation, Hybridoma technology; Live stock improvement; Cloning in animals; Genetic engineering in animal cell culture;

Immunology: The origin of immunology; Inherent immunity; Humoral and cell mediated immunity; Antigen; B and T cells and Macrophages; Major histocompatibility complex (MHC); Antigen processing and presentation; Molecular basis of antibody diversity; Polyclonal and monoclonal antibody; Complement; Antigen-antibody reaction; Immune tolerance; Hyper sensitivity; Autoimmunity;

Recombinant DNA Technology: Restriction and modification enzymes; Vectors: plasmid, bacteriophage and other viral vectors, cosmids, Ti plasmid, yeast artificial chromosome; cDNA and genomic DNA library; Gene isolation; Gene cloning; Expression of cloned gene; Transposons and gene targeting; DNA labeling; DNA sequencing; Polymerase chain reactions; DNA fingerprinting; Southern and northern blotting; In-situ hybridization; RAPD; RFLP; Site-directed mutagenesis; Gene transfer technologies; Gene therapy.

Bioinformatics: Major bioinformatics resources, Sequence and structure databases;

Sequence analysis (biomolecular sequence file formats, scoring matrices, sequence alignment, phylogeny); DNA microarrays ,Molecular modeling and simulations

11. ENVIRONMENTAL ENGINEERING (EVE)

Atmospheric chemistry: Pollutants, contaminants, receptors, sink, pathways of pollutants. Major regions of

atmosphere, particles, ions and radicals in atmosphere, Thermochemical and photochemical reaction in atmosphere, smog, NO_x, SO, hydrocarbons, suspended particulate matter, chemistry of action of pollutant and effects. Water quality parameters, pH, conductance, dissolved oxygen, B.O.D and C.O.D of waste water. Sanitary significance of sulphate, phosphate, nitrate fluoride and cyanide and their effects. Soil chemistry- Inorganic and organic components of soil, nitrogen pathway in soil, Fertilizers. Toxic chemicals in the environment: pesticides, arsenic, cadmium, lead, mercury, carbon monoxide, PAN, MIC, Radioactive wastes Microbial metabolism of heavy metals, pesticides etc. Ecology, Definition, Branches and Scope of ecology. Ecological adaptation & concept of limiting factor. Different types of ecosystem in India. Structural and functional attributes of an ecosystem. Biotic and Abiotic components, Food chain, Food web and energy flow. Ecological succession. Biogeochemical cycle. Concept of population & population attributes. Concept of carrying capacity and environmental resistance. Development and evolution of ecosystem. Population interaction. Qualitative and quantitative. Raw water collection and Treated water distribution System

Introduction and overview of urban and rural water supply system:- Sources selection, Population estimation, Design period, Domestic institution, commercial and industrial needs. Preliminary Hydraulic design of pressure conduits system (Dead end method and loop network method. Waste water collection systems, Waste water disposal, Septic tank, Types of surface and underground drainage system, their merits and demerits. Types of sewerage- lateral, sub main, Main intercepting and outfall sewers.

Hydraulic design of gravity sewerage system – Sources, rate of domestic sullage and waste water flow, infiltration, ex-filtration, pick factor, pressure sewers.

Appurtenances – Manhole, Street inlet, Inverted siphon, House drainage connection, Sewer junction and transition. Waste water pumping - types of pumps.

Water sanitation:- Sanitary consideration for location and construction of walls. Water impurities and biological contamination of water, Water pollution and health, water purification, Drinking water Standards & their significance. . Surface Water Treatment System . Waste water treatment system . Characterisation of sludge, Air pollution and measurement of Air Pollution. Atmospheric dispersion of stack effluents, Noise pollution. Composition and Properties of Municipal Solid Waste. Generation, Collection rates, waste handling and separation, storage and processing at the source.

Biomedical waste management :- Sources, Hazardous associated with bio-medical wastes, Biosafety, Storage of biomedical wastes, disposal and processing.

EIA under NEPA (National Environmental Policy Act), Methodologies screening and scoping criteria, Rapid and comprehensive EIA, Environmental health impact assessment. Environmental risk analysis.

12. Syllabus for Industrial Engineering (IE)

Engineering Materials: Structure and properties of engineering materials and their applications; effect of strain, strain rate and temperature on mechanical properties of metals and alloys; heat treatment of metals and alloys, its influence on mechanical properties.

Applied Mechanics: Engineering mechanics – equivalent force systems, free body concepts, equations of equilibrium; strength of materials – stress, strain and their relationship, Mohr's circle, deflection of beams, bending and shear stress, Euler's theory of columns.

Theory of Machines and Design: Analysis of planar mechanisms, cams and followers; governors and fly wheels; design of elements – failure theories; design of bolted, riveted and welded joints; design of shafts, keys, spur gears, belt drives, brakes and clutches.

Thermal Engineering: Fluid mechanics – fluid statics, Bernoulli's equation, flow through pipes, equations of continuity and momentum; thermodynamics – zeroth, first and second law of thermodynamics, thermodynamic system and processes, calculation of work and heat for systems and control volumes; air standard cycles; basics of internal combustion engines and steam turbines; heat transfer – fundamentals of conduction, convection and radiation, heat exchangers.

Machining and Machine Tool Operations: Basic machine tools; machining processes-turning, drilling, boring, milling, shaping, planing, gear cutting, thread production, broaching, grinding, lapping, honing,

super finishing; mechanics of machining – geometry of cutting tools, chip formation, cutting forces and power requirements, Merchant's analysis; selection of machining parameters; tool materials, tool wear and tool life, economics of machining, thermal aspects of machining, cutting fluids, machinability; principles and applications of nontraditional machining processes – USM, AJM, WJM, EDM and Wire cut EDM, LBM, EBM, PAM, CHM, ECM.

Tool Engineering: Jigs and fixtures – principles, applications, and design; press tools – configuration, design of die and punch; principles of forging die design.

Metrology and Inspection: Limits, fits, and tolerances, interchangeability, selective assembly; linear and angular measurements by mechanical and optical methods, comparators; design of limit gauges; interferometry; measurement of straightness, flatness, roundness, squareness and symmetry; surface finish measurement; inspection of screw threads and gears; alignment testing of machine tools.

Polymers and Composites: Introduction to polymers and composites; plastic processing – injection, compression and blow molding, extrusion, calendaring and thermoforming; molding of composites.

Manufacturing Analysis: Sources of errors in manufacturing; process capability; tolerance analysis in manufacturing and assembly; process planning; parameter selection and comparison of production alternatives; time and cost analysis; manufacturing technologies – strategies and selection.

Product Design and Development: Principles of good product design, tolerance design; quality and cost considerations; product life cycle; standardization, simplification, diversification, value engineering and analysis, concurrent engineering.

Engineering Economy and Costing: Elementary cost accounting and methods of depreciation; break-even analysis, techniques for evaluation of capital investments, financial statements.

Work System Design: Taylor's scientific management, Gilbreth's contributions; productivity – concepts and measurements; method study, micro-motion study, principles of motion economy; work measurement – stop watch time study, work sampling, standard data, PMTS; ergonomics; job evaluation, merit rating, incentive schemes, and wage administration; business process reengineering.

Facility Design: Facility location factors and evaluation of alternate locations; types of plant layout and their evaluation; computer aided layout design techniques; assembly line balancing; materials handling systems.

Production Planning and Inventory Control: Forecasting techniques – causal and time series models, moving average, exponential smoothing, trend and seasonality; aggregate production planning; master production scheduling; MRP and MRP-II; order control and flow control; routing, scheduling and priority dispatching; push and pull production systems, concept of JIT manufacturing system; logistics, distribution, and supply chain management; Inventory – functions, costs, classifications, deterministic and probabilistic inventory models, quantity discount; perpetual and periodic inventory control systems.

Operation Research: Linear programming – problem formulation, simplex method, duality and sensitivity analysis; transportation and assignment models; network flow models, constrained optimization and Lagrange multipliers; simple queuing models; dynamic programming; simulation – manufacturing applications; PERT and CPM, time-cost trade-off, resource leveling.

Quality Management: Quality – concept and costs, quality circles, quality assurance; statistical quality control, acceptance sampling, zero defects, six sigma; total quality management; ISO 9000; design of experiments – Taguchi method.

Reliability and Maintenance: Reliability, availability and maintainability; distribution of failure and repair times; determination of MTBF and MTTR, reliability models; system reliability determination; preventive maintenance and replacement, total productive maintenance – concept and applications.

Management Information System: Value of information; information storage and retrieval system – database and data structures; knowledge based systems.

Intellectual Property System: Definition of intellectual property, importance of IPR; TRIPS and its implications, patent, copyright, industrial design and trademark.

Finishing: Mechanical finishing of cotton. Stiff. Soft, wrinkle resistant, water repellent, flame retardant and enzyme (bio-polishing) finishing of cotton. Milling, decatizing and shrink resistant finishing of wool. Antistat finishing

synthetic fibre fabrics. Heat setting of polyester.

Energy Conservation: Minimum application techniques.

Pollution: Environment pollution during chemical processing of textiles. Treatment of textile effluents.

13. Syllabus for Plastic Engineering (PE)

As per B. Tech Plastic Engineering syllabus of BPUT, Odisha.

TABLES TO REFER FOR CHOICE FILLINGS DURING ONLINE APPLICATION SUBMISSION

TABLE-2

For Admission to First Year Programme (BHMS and BAMS, Pharmacy degree): Code (01 to 03)

Qualifying Exam.	Course	Course Code
10 +2 Sc	BAMS and BHMS	01
	PHARMACY ONLY	02
	PHARMANY and BAMS & BHMS	03

TABLE – 3 (A)

For Admission to First year MBA /MCA and Second year MCA Programme: Code (04 to 06)

Qualifying Exam.	Course	Course Code
BACHELOR DEGREE	MBA	04
	MCA	05
	(Second year MCA under Lateral Entry) LE-MCA	06

TABLE-3 (B)

Qualifying Exam.	Course	Course Code
BACHELOR DEGREE	MBA AND MCA	10
	MBA AND LE-MCA	11
	MBA AND PGAT (M.Tech/ M Arch/M Pharm)	See Table-3 (C)

Table -3 (C)

This table is for choosing the B Tech question along with MBA

(Only for the students who have opted for combination) Carefully read Table -12 before choosing the test code i, e B. Tech Question.

Qualifying Exam.	Entrance Test Graduation Course for PGAT	Test code
BACHELOR DEGREE	MBA + B Arch	32
	MBA + B Pharma	33
	MBA + Biotechnology	34
	MBA + Chemical Engineering	35
	MBA +Civil Engineering	36
	MBA + Computer Science Engineering / I T	37
	MBA + Electrical Engineering	38
	MBA + Electronics Engineering	39
	MBA + Environmental Engineering	40
	MBA + Industrial Engineering	41
	MBA + Mechanical Engineering	42
	MBA + Metallurgical Engineering	43
	MBA + Plastic Engineering	44
	MBA + Textile Engineering	45

TABLE - 4

For Admission to Second Year Programme (Under Lateral Entry): Code (51 to 76) CANDIDATE'S DIPLOMA STREAM STUDIED

Qualifying Examination: Diploma in	Qualifying Code
Mechanical Engineering / Tool & Die Making / Mechanical Maintenance / Mechanical (Production)/ Aeronautical Engineering / Automobile Engineering	51
Applied Electronics & Instrumentation / Electronics & Telecommunication Engineering	52
Rural Technology	53
Biotechnology	54
Metallurgical Engineering	55
Chemical Engineering	56
Computer Science & Engineering / Computer Application Programming / Information Technology	57
Drilling Technology / Drilling Engineering	58
Electrical and Electronics Engineering / Electrical Engineering	59
Electrical and Mechanical Engineering	60
Food Technology / Food Processing.	61
Garment Design & Fashion Technology / Beauty Culture	62
Mechatronics	63
Medical Lab Technician	64
Mining Engineering	65
Plastic Mould Engineering	66
Print Technology	67
Sound & TV Engineering	68
Textile Chemistry	69
Textile Technology / Textile Engineering	70
Three D Animation and Graphics	71
Architectural Assistanceship & Town Planning	72
Civil Engineering	73
Ceramic Engineering / Ceramic	74
Other Diploma courses in Engineering which is not mentioned above	75
D Pharmacy	76

TABLE - 5

For Admission to Second Year B. Tech Programme under Lateral Entry for +3 Sc / B.Sc. with mathematics as subject at XII standard Scheme: Code (50)

Qualifying Examination	COURSE Code
+3 Sc / B.Sc. with mathematics as subject at XII standard	50

TABLE – 6

For Admission to First Year M.Tech / M.Pharm / M.Arch: Code (16 – 29)

These are the available questions for which a candidate can appear. Please make correct choice based on your Graduation subject and M Tech you are interested in.

Carefully read Table -12 before choosing the test code.

Entrance Test Graduation Course Question for PGAT	Test code
B Arch	16
B Pharma	17
Biotechnology	18
Chemical Engineering	19
Civil Engineering	20
Computer Science Engineering / Information Technology	21
Electrical Engineering	22
Electronics Engineering	23
Environmental Engineering	24
Industrial Engineering	25
Mechanical Engineering	26
Metallurgical Engineering	27
Plastic Engineering	28
Textile Engineering	29

TABLE-7

For Admission to First year Integrated MBA(5years) Programme: Code (31)

Qualifying Examination	Course	course Code
10+2	Integrated MBA(5years)	31

TABLE-X

For Admission to First year Masters in Planning (M. PLAN): Code (81)

Qualifying Examination	Course	course Code
BACHELOR DEGREE	Masters in Planning (M. PLAN)	81

TABLE- 8**List of OJEE-2016 Centres with Centre Code**

Place of Centre	Code	Place of Centre	Code
Angul	10	Jeypore	21
Balasore	11	Jharsuguda	22
Baripada	12	Kendrapara	23
Bhawanipatna	13	Keonjhar	24
Berhampur	14	Phulbani	25
Bhadrak	15	Puri	26
Bhubaneswar	16	Rayagada	27
Bolangir	17	Rourkela	28
Cuttack	18	Sambalpur	29
Dhenkanal	19	Sarang	30
Jagatsinghpur	20		

TABLE-11**Mapping course-wise for Lateral Entry admission**

Diploma Course mapping for Lateral Entry admission		
I	II	III
	If the candidate has a Diploma in the discipline:	Eligible for admission to the Degree course in:
1	Mechanical Engineering / Tool & Die Making / Mechanical Maintenance / Mechanical (Production)/ Aeronautical Engineering / Automobile Engineering	Aeronautical Engineering / Environmental Engineering / Mechanical Engineering / Production Engineering / Manufacturing Sc. and Engineering / Automobile engineering / Manufacturing Engineering and Technology/Textile Engineering
2	Applied Electronics & Instrumentation / Electronics & Telecommunication Engineering / Electrical and Electronics Engineering	Applied Electronics and Instrumentation / Instrumentation and Electronics Engineering / Electronics and Communication Engineering / Electronics & Instrumentation Engineering / Electronics & Tele Communication Engineering / Bio-Medical Engineering / Electrical & Electronics Engineering
3	Rural Technology / Architectural Assistanceship & Town Planning	Civil Engineering / Environmental Engineering
4	Biotechnology	Biotechnology / Bio-Medical Engineering / Chemical Engineering / Plastic Engineering / Textile Engineering / Environmental Engineering
5	Metallurgical Engineering	Metallurgical Engineering / Metallurgical and Materials Engineering / Plastic Engineering / Environmental Engineering/Mineral engineering
6	Chemical Engineering	Chemical Engineering / Biotechnology / Plastic Engineering / Mineral Engineering / Textile Engineering / Environmental Engineering
7	Computer Science & Engineering / Computer Application Programming / Information Technology	Computer Science & Engineering / Information Technology / Information Technology & Engineering / Bio-Medical Engineering

8	Drilling Technology / Drilling Engineering	Mining Engineering / Mechanical Engineering / Manufacturing Sc. and Engineering / Production Engineering / Manufacturing Engineering and Technology
9	Electrical and Electronics Engineering / Electrical Engineering	Electrical Engineering / Electrical & Electronics Engineering / Bio-Medical Engineering / Applied Electronics and Instrumentation/ Instrumentation and Electronics Engineering / Electronics & Instrumentation Engineering
10	Electrical and Mechanical Engineering	Electrical Engineering / Electrical & Electronics Engineering / Bio-Medical Engineering / Mechanical Engineering / Manufacturing Sc. and Engineering / Production Engineering /Aeronautical Engineering / Automobile Engineering / Manufacturing Engineering and Technology/Textile Engineering
11	Food Technology / Food Processing.	Chemical Engineering / Biotechnology / Bio Medical Engineering / Environmental Engineering
12	Garment Design & Fashion Technology / Beauty Culture	Fashion and Apparel Technology
13	Mechatronics	Mechanical Engineering / Bio-medical Engineering / Applied Electronics and Instrumentation/ Instrumentation and Electronics Engineering / Electronics and Communication Engineering / Electronics and Telecommunication Engineering/ Electronics & Instrumentation Engineering / Automobile Engineering / Manufacturing Sc. and Engineering / Production Engineering / Manufacturing Engineering and Technology / Aeronautical Engineering
14	Medical Lab Technician	Bio-medical Engineering / Bio Technology
15	Mining Engineering	Mining Engineering / Environmental Engineering
16	Plastic Mould Engineering	Plastics Engineering / Mechanical Engineering / Production Engineering / Chemical Engineering / Manufacturing Sc. and Engineering / Manufacturing Engineering and Technology / Biotechnology
17	Print Technology	Fashion and Apparel Technology / Textile Engineering / Chemical Engineering / Manufacturing Sc. and Engineering / Production Engineering / Manufacturing Engineering and Technology
18	Sound Engineering	Bio-medical Engineering / Applied Electronics and Instrumentation/ Instrumentation and Electronics Engineering / Electronics and Communication Engineering / Electronics and Telecommunication Engineering/ Electronics & Instrumentation Engineering
19	Textile Chemistry	Textile Engineering / Chemical Engineering / Biotechnology
20	Textile Technology / Textile Engineering	Textile Engineering / Fashion and Apparel Technology / Production Engineering / Manufacturing Sc. and Engineering / Manufacturing Engineering and Technology / Biotechnology

21	Three D Animation and Graphics	Mechanical Engineering / Production Engineering / Manufacturing Sc. and Engineering / Manufacturing Engineering and Technology / Computer Science & Engineering / Information Technology / Information Technology & Engineering
22		
23	Civil Engineering	Civil Engineering / Environmental Engineering / Aeronautical Engineering
24	Ceramic Engineering / Ceramic	Metallurgical Engineering /Metallurgical and Material Engineering
25	D. Pharm	B. Pharm

TABLE-12

Mapping course-wise for PGAT (M.Tech / M. ARCH/ M. PHARM) admission:

Please make correct choice based on your Graduation subject and M Tech you are interested in.

Column 3 about candidate basic degree. Column 4 M Tech available for admission.

Column 2 the question one should attempt based on basic degree and preferred M Tech course.

Mapping course-wise for PGAT (M. Tech / M. ARCH / M. PHARM) admission			
I	II	III	IV
SL NO	BRANCH QUESTION PAPER TO APPEAR IN ENTRANCE TEST	IF YOU HAVE DEGREE IN THE DISCIPLINE	YOU ARE ELIGIBLE FOR 1ST YEAR MASTER DEGREE COURSES
1	COMPUTER SCIENCE AND ENGINEERING / INFORMATION TECHNOLOGY (CSE/IT)	1.COMPUTER SCIENCE AND ENGINEERING	COMPUTER SCIENCE / COMPUTER SCIENCE AND ENGINEERING / INFORMATION TECHNOLOGY/ COMPUTER SCIENCE AND TECHNOLOGY/ COMPUTER ENGINEERING / ELECTRONICS INFORMATION SYSTEMS / VLSI & EMBEDDED SYSTEMS/ VLSI DESIGN AND EMBEDDED SYSTEM/ VLSI AND EMBEDDED SYSTEM DESIGN / AUTOMATION AND ROBOTICS / CAD CAM / NANO TECHNOLOGY / WIRELESS COMMUNICATION TECHNOLOGY / WIRELESS COMMUNICATION SYSTEMS
		2.INFORMATION TECHNOLOGY	
		3.INFORMATION TECHNOLOGY AND ENGINEERING	
		4.APPLIED ELECTRONICS AND INSTRUMENTATION	
		5.ELECTRONICS & COMMUNICATION ENGINEERING	
		6.ELECTRONICS AND TELECOMMUNICATION ENGINEERING	
		7.ELECTRONICS AND INSTRUMENTATION ENGINEERING	
		8.INSTRUMENTATION AND ELECTRONICS ENGINEERING	
		9. ELECTRICAL AND ELECTRONICS ENGINEERING	
		10.ELECTRONICS ENGINEERING	
		11.INSTRUMENTATION	

		ENGINEERING	
		12.ELECTRICAL ENGINEERING / TECHNOLOGY	
		1.MASTER IN COMPUTER APPLICATION (MCA)	COMPUTER SCIENCE / COMPUTER SCIENCE AND ENGINEERING / INFORMATION TECHNOLOGY/ COMPUTER SCIENCE AND TECHNOLOGY/ COMPUTER ENGINEERING
		2.COMPUTER SCIENCE	
		3. MSc. In (Comp. Sc / IT)	
2	CIVIL ENGINEERING (CE)	1.CIVIL ENGINEERING	CIVIL ENGINEERING / WATER RESOURCES ENGINEERING AND MANAGEMENT / GEOTECHNICAL ENGINEERING / WATER RESOURCES ENGINEERING /ENVIRONMENTAL SCIENCE AND ENGINEERING /ENVIRONMENTAL SCIENCE AND ENGINEERING (PT) /ENVIRONMENTAL ENGINEERING / SOIL MECHANICS AND FOUNDATION ENGINEERING / ARCHITECTURE AND TOWN PLANNING / CONSTRUCTION TECHNOLOGY AND MANAGEMENT / STRUCTURAL AND FOUNDATION ENGINEERING / STRUCTURAL ENGINEERING / CAD CAM / THERMAL AND FLUID ENGINEERING / NANO TECHNOLOGY
		2. STRUCTURAL ENGINEERING	
		3. AEROSPACE ENGINEERING	
3	MECHANICAL ENGINEERING (ME)	1. AUTOMOBILE ENGINEERING	MECHANICAL ENGINEERING / PRODUCTION ENGINEERING / HEAT POWER AND THERMAL ENGINEERING / MACHINE DESIGN /PRODUCTION ENGINEERING AND OPERATIONAL MANAGEMENT / THERMAL ENGINEERING / DESIGN AND DYNAMICS / MECHANICAL SYSTEM DESIGN / MECHANICAL SYSTEM DESIGN AND DYNAMICS / MACHINE DESIGN
		2. AERONAUTICAL ENGINEERING	NDROBOTICS / HEAT POWER ENGINEERING / THERMAL POWER ENGINEERING / MECHATRONICS
		3. AEROSPACE ENGINEERING	/ AUTOMATION AND ROBOTICS/ CAD CAM
		4.MECHANICAL ENGINEERING	/ THERMAL AND FLUID ENGINEERING / ENERGY SYSTEM ENGINEERING / INDUSTRIAL ENGINEERING AND MANAGEMENT / INDUSTRIAL ENGINEERING / NANO TECHNOLOGY
		5.MANUFACTURING ENGINEERING AND TECHNOLOGY	
		6.PRODUCTION ENGINEERING	
		7.MANUFACTURING SCIENCE AND ENGINEERING	
		8.MECHATRONICS	
4	ELECTRICAL ENGINEERING (EE)	1.ELECTRICAL ENGINEERING / TECHNOLOGY	ELECTRICAL ENGINEERING / POWER ELECTRONICS AND DRIVES

		2.ELECTRICAL AND ELECTRONICS ENGINEERING	/ POWER SYSTEM ENGINEERING / INDUSTRIAL POWER CONTROL AND DRIVES / ELECTRICAL POWER SYSTEM /POWER SYSTEMS / POWER ELECTRONICS AND ELECTRICAL DRIVES / POWER ELECTRONICS AND ELECTRICAL DRIVESIN EE/ POWER ELECTRONICS AND POWER SYSTEMS / POWER ELECTRONICS / AUTOMATION AND ROBOTICS / CAD CAM / POWER ENGINEERING AND ENERGY SYSTEM / POWER AND ENERGY / ENERGY SYSTEM ENGINEERING / ELECTRICAL AND ELECTRONICS ENGINEERING /NANO TECHNOLOGY /MECHATRONICS / INDUSTRIALPOWER CONTROL AND DRIVES(PT)/POWER AND ENERGY / VLSI & EMBEDDED SYSTEMS/ VLSI DESIGN AND EMBEDDED SYSTEM/ VLSI AND EMBEDDED SYSTEM DESIGN
		3. APPLIED ELECTRONICS AND INSTRUMENTATION	
		4. ELECTRONICS AND INSTRUMENTATION ENGINEERING	
		5. INSTRUMENTATION AND ELECTRONICS ENGINEERING	
		6. INSTRUMENTATION AND CONTROL	
		7. INSTRUMENTATION ENGINEERING	
5	BIO TECHNOLOGY (BT)	1.BIO TECHNOLOGY	BIO TECHNOLOGY / PLASTIC ENGINEERING / POLYMER AND NANO TECHNOLOGY / TEXTILE CHEMICAL PROCESSING / FOOD TECHNOLOGY / ENERGY SYSTEM ENGINEERING / NANO TECHNOLOGY/ CHEMICAL ENGINEERING
		2. BIO MEDICAL ENGINEERING	
		3.INDUSTRIAL BIOTECHNOLOGY	
		4. BIO ENGINEERING	
		5.BIO CHEMICAL ENGINEERING	
		6. AGRICULTURAL BIOTECHNOLOGY	
		7. AGRICULTURAL ENGINEERING	
		8. BIO INFORMATICS	
		9. LEATHER TECHNOLOGY	
		10. MINING ENGINEERING	
		11. MINERAL ENGINEERING	
		12. B. PHARM	
		13. ENVIRONMENTAL ENGINEERING	
		14. MSc. In (Life Sc. / Botany / Zoology / Biochemistry / Molecular Biology / Genetics / Nature and conservation Biology / Micro-Biology / Bio-Technology / Food Technology / Food Processing / Nano Technology / Marine Biology / Bio-Physics / Biology / Agriculture / Veterinary Sc. / Environmental Sc.)	
6	ELECTRONICS ENGINEERING (ELE)	1.APPLIED ELECTRONICS AND INSTRUMENTATION	COMMUNICATION SYSTEMS / COMMUNICATION ENGINEERING / SIGNAL PROCESSING AND COMMUNICATION / SIGNAL PROSESSING ENGINEERING / WIRELESS
		2.ELECTRONICS & COMMUNICATION ENGINEERING	
		3.ELECTRONICS AND TELECOMMUNICATION ENGINEERING	

		<p>4.ELECTRONICS AND INSTRUMENTATION ENGINEERING</p> <p>5.INSTRUMENTATION AND ELECTRONICS ENGINEERING</p> <p>6. ELECTRICAL AND ELECTRONICS ENGINEERING</p> <p>7.ELECTRONICS ENGINEERING</p> <p>8.INSTRUMENTATION ENGINEERING</p> <p>9. BIOMEDICAL ENGINEERING</p> <p>10. ELECTRICAL ENGG./TECHNOLOGY</p> <p>11.MECHATRONICS</p>	<p>COMMUNICATION TECHNOLOGY / WIRELESS COMMUNICATION SYSTEMS / ELECTRONICS INFORMATION SYSTEMS / VLSI & EMBEDDED SYSTEMS/ VLSI DESIGN AND EMBEDDED SYSTEM/ VLSI AND EMBEDDED SYSTEM DESIGN / AUTOMATION AND ROBOTICS / ELECTRONICS AND INSTRUMENTATION ENGINEERING /ELECTRONICS AND COMMUNICATION ENGINEERING / ELECTRONICS AND TELECOMMUNICATION ENGINEERING / APPLIED ELECTRONICS AND INSTRUMENTATION ENGINEERING / MECHATRONICS / CAD CAM / ELECTRICAL AND ELECTRONICS ENGINEERING /NANO TECHNOLOGY /INDUSTRIALPOWER CONTROL AND DRIVES (PT) / ENERGY SYSTEM ENGINEERING</p>
7	PLASTIC ENGINEERING (PE)	<p>1. PLASTIC ENGG. / TECH.</p> <p>2. MECHANICAL ENGINEERING</p> <p>3.MANUFACTURING ENGINEERING AND TECHNOLOGY</p> <p>4.PRODUCTION ENGINEERING</p> <p>5.MANUFACTURING SCIENCE AND ENGINEERING</p> <p>6.POLYMER ENGG./TECH.</p> <p>7. MATERIAL SCIENCE / ENGG</p> <p>8. POLYMER SC. AND TECHNOLOGY</p> <p>9. RUBBER AND PLASTIC TECHNOLOGY</p> <p>10. MSc. In (Polymer Sc. / Polymer Chemistry/ Polymer Physics / Chemistry / Applied Chemistry)</p>	<p>PLASTIC ENGINEERING / POLYMER NANO TECHNOLOGY / BIO TECHNOLOGY / CHEMICAL ENGINEERING / NANO TECHNOLOGY / METALLURGICAL AND MATERIALS ENGINEERING / PRODUCTION ENGINEERING / CAD CAM</p>
8	TEXTILE ENGINEERING(TE)	<p>1. TEXTILE ENGG. / TECH.</p> <p>2.MANUFACTURING SCIENCE AND ENGINEERING</p> <p>3.PRODUCTION ENGINEERING</p> <p>4.MANUFACTURING ENGINEERING AND TECHNOLOGY</p> <p>5.FASHION AND APPAREL TECHNOLOGY</p> <p>6.POLYMER ENGG./ TECH.</p> <p>7. MATERIAL SCIENCE / ENGG</p> <p>8. TEXTILE CHEMISTRY</p>	<p>TEXTILE CHEMICAL PROCESSING / BIO TECHNOLOGY / POLYMER NANO TECHNOLOGY / CHEMICAL ENGINEERING / NANO TECHNOLOGY/PRODUCTION ENGINEERING / CAD CAM/ PLASTIC ENGINEERING</p>

		9. APPAREL TECHNOLOGY	
		10. FASHION TECHNOLOGY	
		11. TEXTILE CHEMICAL PROCESSING	
		12. MAN MADE FIBER TECHNOLOGY	
		13. FIBER TECHNOLOGY	
		14. MSc. In (Clothing Sc. / Chemistry / Applied Chemistry / Polymer Sc / Nano Technology / Polymer Chemistry/ Polymer Physics)	
9	B. ARCH	B. ARCH	ARCHITECTURE AND TOWN PLANNING / CONSTRUCTION TECHNOLOGY AND MANAGEMENT /EXECUTIVE M. ARCH / CAD CAM
10	METALLURGICAL ENGINEERING (MTE)	1. METALLURGICAL ENGINEERING	METALLURGICAL & MATERIAL ENGINEERING / POLYMER NANO TECHNOLOGY / NANO TECHNOLOGY / PLASTIC ENGINEERING /MANUFACTURING ENGINEERING/ MANUFACTURING ENGINEERING AND TECHNOLOGY/ PRODUCTION ENGINEERING
		2. METALLURGICAL AND MATERIALS ENGINEERING	
		3. MATERIAL SCIENCE / ENGG.	
		4. WELDING SCIENCE / ENGG.	
		5. MINERAL ENGINEERING	
		6. CERAMIC ENGINEERING AND TECHNOLOGY	
		7. CHEMICAL ENGINEERING	
		8. MECHANICAL ENGINEERING	
		9.PRODUCTION ENGINEERING	
		10. MANUFACTURING ENGINEERING/MANUFACTURING ENGG. & TECHNOLOGY	
		11. PLASTIC ENGINEERING	
11	CHEMICAL ENGINEERING (CHE)	1. MINERAL ENGINEERING	BIO TECHNOLOGY / PLASTIC ENGINEERING / TEXTILE CHEMICAL PROCESSING / METALLURGICAL & MATERIAL ENGINEERING /CHEMICAL ENGINEERING / FOOD TECHNOLOGY / NANO TECHNOLOGY / POLYMER NANO TECHNOLOGY
		2. CHEMICAL ENGINEERING	
		3.POLYMER ENGG./TECH.	
		4. MATERIAL SCIENCE / ENGG	
		5. CHEMICALS AND ELECTROCHEMICALS	
		6. RUBBER AND PLASTIC TECHNOLOGY	
		7. RUBBER TECHNOLOGY	
		8. MSc. In (Botany / Zoology / Biology / Biochemistry / Molecular Biology / Genetics / Food Technology / Food Processing /	

		Nano Technology / Agriculture / Chemistry / Applied Chemistry / Micro Biology)	
12	ENVIRONMENTAL ENGINEERING (EVE)	1. All Branches of Engineering / Technology 2. MSc. In (Environmental Sc. / Chemistry / Bio Chemistry / Earth Sc. / Life Sc. / Microbiology / Physics / Bio Physics / Geology / Nature and conservation Biology / Food Technology / Food Processing / Marine Biology / Bio-Physics / Applied Chemistry / Agriculture)	ENVIRONMENTAL SCIENCE AND ENGINEERING / ENVIRONMENTAL ENGINEERING / ENVIRONMENTAL SCIENCE AND ENGINEERING (PT)
13	INDUSTRIAL ENGINEERING (IE)	All Branches of Engineering / Technology	INDUSTRIAL ENGINEERING AND MANAGEMENT / INDUSTRIAL ENGINEERING
14	B. PHARM	B. PHARM	ALL BRANCHES OF M. PHARM

LIST OF TABLES SHOWING DIFFERENT COLLEGES FOR DIFFERENT COURSE

TABLE-13 Private Colleges offering B.Pharm Programme

Sr No	COLLEGE/UNIVERSITY(PVT.)	TOTAL
1	College of Pharmaceutical Science, Puri	60
2	College of Pharmaceutical Sciences, Berhampur, Mohuda	120
3	Dadhichi College of Pharmacy, Cuttack	60
4	Gayatri College of Pharmacy, Sambalpur	60
5	Gayatri Institute of Science and Technology (GIST), Gunupur	60
6	HI-Tech College of Pharmacy, Bhubaneswar	60
7	IMT Pharmacy College, Puri	60
8	Indira Gandhi Institute of Pharmaceutical Science, BBSR	60
9	Institute of Pharmacy & Technology, Salipur	120
10	Jeypore College of Pharmacy, Jeypore	60
11	Kanak Manjari Institute of Pharmaceutical Sciences, Rourkela	60
12	Roland Institute of Pharmaceutical Sciences, Berhampur	120
13	Royal College of Pharmacy & Health Science, Berhampur	60
14	Seemanta Institute of Pharmaceutical Sciences, Jharpokharia	60
15	Sri Jayadev College of Pharmaceutical Sciences, Bhubaneswar	60
16	The Pharmaceutical College, Barpali	60

TABLE - 14 Government Colleges offering MCA Programme

For fee structure and status of course please contact concerned institute.

S/N	Name of the College /University(GOVT.)	Total No. of Seats
1	Berhampur University, Bhanja Vihar	30
2	College of IT & Management Education, Bhubaneswar , SSC*	60
3	College of Engineering & Technology, Bhubaneswar	30
4	Fakirmohan University, Balasore	30
5	Gangadhar Meher College (Autonomous), Sambalpur, SSC*	30
6	Indira Gandhi Institute of Technology, Sarang	30
7	Institute of Management & Information Technology , Cuttack	90
8	Khalikote College (Autonomous), Khalikot	30
9	MPC (Auto) College, Takhatpur, Baripada	60
10	North Odisha University, Baripada	30
11	Ravenshaw University, Cuttack, SSC*	30
12	Veer Surendra Sai University of Technology, Burla,SSC*	30

SSC* = self sustaining course

TABLE – 15 Private Colleges offering MCA Programme

1	Academy of Business Administration, HARIDA, KURUDA, BALASORE -756056	60
2	Ajay Binay Institute of Technology, SECTOR-I,CDA , CUTTACK-753014	60
3	Balasore College of Engineering and Technology, SERGARH BALASORE ODISHA PIN-756060	60
4	Bhadrak Institute of Engineering & Technology, AT/PO- BARAPADA, BHADRAK DIST- BHADRAK PIN - 756113 ODISHA, INDIA	60
5	BRM Institute of Management and Information Technology, PUBA SASAN, KOUSHLYA GANGA, BHUBANESWAR	60
6	College of Engineering Bhubaneswar	60
7	CV Raman Computer Academy, BIDYA NAGAR, MAHURA, JANLA	120
8	Dr. Ambedkar Memorial Institute of Information Technology & Management Science, JAGDA, ROURKELA-769042 DIST-SUNDARGARH ODISHA	120
9	Gandhi Engineering College, AT: BADARAGHUNATHPUR, PO: MADANPUR OFF NH 5 ON GAHIRA SQUARE	60
10	Gandhi Institute for Technological Advancement (GITA) Bhubaneswar, AT: BADARAGHUNATHPUR, PO: MADANPUR VIA: JAANLA	60
11	Gandhi Institute for Technology, Bhubaneswar, AT-GRAMADIHA PO-GANGAPADA VIA- JANLA DT-KHURDA STATE:ODISHA	60
12	Gandhi Institute of Advanced Computer and Research, PRAJUKTI VIHAR AUROBINDO MARG	60
13	Gandhi Institute of Technology and Management (GITAM), SARASWATI VIHAR, AT-GRAMADIHA, P.O- GANGAPADA, VIA- JANALA, BHUBANESWAR, DIST- KHORDA, STATE- ODISHA, PIN- 752054	60

14	Gayatri Institute of Computer and Management Studies (GICMS), GYAN VIHAR AT : REGEDA PO: GUNUPUR DIST: RAYAGADA (ODISHA) PIN - 765022	45
15	Indus College of Engineering Bhubaneswar	45
16	Institute of Professional studies and Research	60
17	Koustuv Institute of Self Domain	60
18	Kushagra Institute of Information and Management Science, PIRA BAZAR, GOPALPUR, IN FRONT OF SADAR POLICE STATION	120
19	Mahavir Institute of Engineering and Technology	45
20	Nalanda Institute of Technology, BHUDHIST VILLA, NEBAD BHUASANI TEMPLE SQUARE, SIMILIPATNA, CHANDAKA, BHUBANESWAR, ODISHA.	60
21	National Institute of Science and Technology, National Institute of Science & Technology, PALUR HILLS BERHAMPUR, ODISHA - 761008	60
22	NIIS Institute of Business Administration, SARADA VIHAR MADANPUR BHUBANESWAR DIST: KHURDA PIN: 752054	60
23	PJ College of Management & Technology, SWATIK NAGAR, KESORA, BHUBANESWAR, ODISHA	60
24	Purushottam Institute of Engineering & Technology, PURUSHOTTAM VIHAR, 10TH KM., HIGHWAY 10, MANDIAKUDAR, KANSBAHAL	60
25	Raajdhani Engineering College, NEAR MANCHESWAR RLY.STATION MANCHESWAR BHUBANESWAR, KHORDHA 751017 ODISHA	60
26	Roland Institute of Technology, SURYA VIHAR, KOTHARI SINGHI, GOLANTHARA, BERHAMPUR-761008. GANJAM, ODISHA, INDIA.	60
27	Rourkela Institute of Management Studies, INSTITUTIONAL AREA GOPABANDHU NAGAR CHHEND ROURKELA-769015	60
28	Rourkela Institute of Technology, Kolunga	60
29	Seemanta Engineering College, MAYURBHANJ AT- MAYURVIHAR, VILLAGE- JAUNTI, PO.- JHARPOKHARIA, MAYURBHANJ, PIN-757086.	60
30	Silicon Institute of Technology, SILICON HILLS, PATIA, BHUBANESWAR, KHORDHA, ODISHA PIN-751024	60
31	Srusti Academy of Management, PLOT NO: 38/1 CHANDAKA INDUSTRIAL ESTATE, NEAR INFOCITY PO: PATIA, BHUBANESWAR DIST: KHURDA	60
32	The Techno School, 361-A, PATRAPADA, BHUBANESWAR, PIN CODE- 751019, KHURDA, ODISHA	60
33	Trident Academy of Creative Technology, F2/B, CHANDAKA INDUSTRIAL ESTATE, INFRONT OF INFOCITY, CHANDRASEKHARPUR, BHUBANESWAR, PIN-751024	120
34	Trident Academy of Technology, F2A, INFRONT OF INFOCITY, CHANDAKA INDUSTRIAL ESTATE, CHANDRASEKHARPUR, BHUBANESWAR-751 024	60
35	United School of Business Management, PLOT NO. 37/A CHANDAKA I.E PATIA BHUBANESWAR	60
36	Indian Institute of Science and Information Technology, BBSR	90

TABLE – 16 (A) Government Colleges offering MBA Programme

For fee structure and status, of course please contact concerned institute.

Sl. No.	Name of The College	Total No. of Seats
1	Berhampur University, Bhanja Vihar	30
2	College of IT & Management Education, Bhubaneswar (Self Sustaining Course)	120
3	Fakirmohan University, Balesore	40
4	Institute of Management & Information Technology, Cuttack	120
5	Madhusudhan Institute of Cooperative Management, Bhubaneswar	60
6	North Odisha University, Baripada	30

(B) Colleges offering MBA under Public Private Partnership Mode

1	Dhenkanal Autonomous College, Dhenkanal	60
2	Gangadhar Meher College (Autonomous), Sambalpur	60
3	MPC (Auto) College , Baripada	60
4	SCS Autonomous College, Puri	60

TABLE - 17 Private Colleges offering MBA Programme

Sr no	COLLEGE/UNIVERSITY(PVT.)	Total
1	Academy of Business Administration, HARIDA, KURUDA, BALASORE -756056	120
2	Academy of Management & Information Technology, 67, IID CENTER,	60
3	Ajay Binay Institute of Technology, SECTOR-I,CDA , CUTTACK-753014	60
4	Apex Institute of Technology and Management, JOHALA PO: PAHALA BALIANTA, BHUBANESWAR DIST: KHURDA	60
5	Astha School of Management, 261,ATALA,BALIANTA BHUBANESWAR, DIST-KHURDA ODISHA PIN-752101	120
6	Balasore College of Engineering and Technology, SERGARH BALASORE ODISHA PIN-756060	60
7	Barabati Institute of Management Studies, PLOT NO : 242, BISWALPADA PO: KHADEITA VIA: GOPALPUR DIST : CUTTACK PIN: 753 011	60
8	Bhadrak Institute of Engineering & Technology, AT/PO- BARAPADA, BHADRAK DIST- BHADRAK PIN - 756113 ODISHA,	60
9	Bhubaneswar Engineering College,	60
10	Biju Patnaik Institute of Information Technology and Management Studies, PLOT NO. -F/4, CHANDAKA IND. ESTATE, OPP. OF INFOCITY, PATIA, BHUBANESWAR-751024	180

11	BRM Institute of Management and Information Technology, PUBA SASAN, KOUSHLYA GANGA, BHUBANESWAR	120
12	Capital Institute of Management and Science, 1309, PADHANSAHI SQUARE	60
13	Centre for Management Studies, ODISHA Engineering College, NABAJYOTI VIHAR, NIJIGARH KURKI, P.O. - HARIRAJPUR, JATNI	60
14	College of Engineering Bhubaneswar	60
15	C.V. Raman College of Engineering, BIDYANAGAR MAHURA JANLA BHUBANESWAR - 752054	60
16	Dhaneswar Rath Institute of Engineering and Management Studies (DRIEMS) MBA, AT- KAIRAPARI, PO- KOTSAHI (TANGI), DIST- CUTTACK	180
17	Dr. Ambedkar Memorial Institute of Information Technology & Management Science, JAGDA, ROURKELA-769042 DIST-SUNDARGARH ODISSA	60
18	Gandhi Engineering College, AT: BADARAGHUNATHPUR, PO: MADANPUR OFF NH 5 ON GAHIRA SQUARE	60
19	Gandhi Institute for Technological Advancement (GITA) Bhubaneswar, AT: BADARAGHUNATHPUR, PO: MADANPUR VIA: JAANLA	60
20	Gandhi Institute for Technology, Bhubaneswar, AT-GRAMADIHA PO-GANGAPADA VIA-JANLA DT-KHURDA STATE:ODISHA	120
21	Gandhi Institute of Advanced Computer and Research, PRAJUKTI VIHAR AUROBINDO MARG	60
22	Gandhi Institute of Management Studies, VILLAGE - GOBIRIGUDA, PO - KHARLING, DISTRICT - RAYAGADA	120
23	Gayatri College of Management	60
24	Gayatri Institute of Computer and Management Studies (GICMS), GYAN VIHAR AT : REGEDA PO: GUNUPUR DIST: RAYAGADA (ODISHA) PIN - 765022	60
25	Global Institute of Management, AT:-HANSPAL PO:-NAHARKANTA BHUBANESWAR PIN- 752101 ODISHA	120
26	Gurukula Institute of Technology, JAMUJHARI, CHHATABAR	45
27	Hi-Tech Institute of Technology, INDUSTRIAL ESTATE,KHURDA, BHUBANESWAR	60
28	Indus College of Engineering, BARAKUDA HEIGHT BHUBANESWAR PIN-752050	45
29	Institute of Professional Studies & Research	120
30	IIPM School of Management, AT/PO: KANSBAHAL NEAR ROURKELA DIST. SUNDARGARH ODISHA, PIN-770034	60
31	Kalam Institute of Technology, GOVINDA VIHAR, GOVINDA PUR,PO: LAXMIPUR, BERHAMPUR, DIST:GANJAM	120
32	Konark Institute of Science and Technology, PO. BOX NO. 21, TECHNOPARK, JATNI, BHUBANESWAR.	60
33	Koustuv Institute of Self Domain	60
34	Krupajal Management Studies, PUBA SASANA, KAUSALYA GANGA,	240
35	Kushagra Institute of Information & Management Science, PIRA BAZAR, GOPALPUR, IN FRONT OF SADAR POLICE STATION	60
36	Mahavir Institute of Engineering and Technology	45
37	Modern Engineering & Management Studies, BANAPARIA, KURUDA, BALASORE ODISHA. PIN CODE : 756056	60
38	Modern Institute of Technology and Management, AT-BHAGABATIPUR BHUBANESWAR, PO-KANTABADA,VIA - JANLA, DIST-KHURDA, ODISHA 752054	60

39	National Institute of Science & Technology, PALUR HILLS BERHAMPUR, ODISHA - 761008	60
40	NIIS Institute of Business Administration, SARADA VIHAR MADANPUR BHUBANESWAR DIST: KHURDA PIN: 752054	120
41	NIIST International Institute of Management, 3840 , BARIMUNDA , MANCHASWAR, BHUBANASWAR , KHURDA , ODISHA.	60
42	NM Institute of Engineering & Technology, SIJUA, PATRAPADA, BHUBANESWAR ODISHA - 751019	60
43	PJ College of Management & Technology, SWATIK NAGAR, KESORA, BHUBANESWAR, ODISHA	60
44	Purushottam Institute of Engineering & Technology, PURUSHOTTAM VIHAR, 10TH KM., HIGHWAY 10, MANDIAKUDAR, KANSBAHAL	60
45	Raajdhani Engineering College, NEAR MANCHESWAR RLY.STATION MANCHESWAR BHUBANESWAR, KHORDHA 751017 ODISHA	60
46	Rajdhani College of Engineering and Management, PLOT NO. -18, SECTOR-A, ZONE-B, MANCHESWAR INDUSTRIAL ESTATE	180
47	RJ School of Management Studies, RJ VIDYA VIHAR,TIGIRIA, TENTULIPURA, PO : PUNJIBAG, VIA : SUNHAT, DIST : BALASORE, PIN : 756002	60
48	Rourkela Institute of Management Studies, INSTITUTIONAL AREA GOPABANDHU NAGAR CHHEND ROURKELA-769015	180
49	Rourkela Institute of Technology, Kalunga	60
50	S.M.Institute of Technology, Post Graduate Centre for Management Studies	60
51	Saraswat Institute of Management, KERANDA, BAJPUR, BHUBANESWAR - 752060	60
52	Srusti Academy of Management, PLOT NO: 38/1 CHANDAKA INDUSTRIAL ESTATE, NEAR INFOCITY PO: PATIA, BHUBANESWAR DIST: KHURDA	120
53	Suddhananda School of Management and Computer Science, NACHHIPUR, BHATAPATNA, BHUBANESWAR, KHURDA, ODISHA	60
54	The Techno School, 361-A, PATRAPADA, BHUBANESWAR, PIN CODE- 751019, KHURDA, ODISHA	60
55	Trident Academy of Creative Technology, F2/B, CHANDAKA INDUSTRIAL ESTATE, INFRONT OF INFOCITY, CHANDRASEKHARPUR, BHUBANESWAR, PIN-751024	60
56	Trident Academy of Technology, F2A, INFRONT OF INFOCITY, CHANDAKA INDUSTRIAL ESTATE, CHANDRASEKHARPUR, BHUBANESWAR-751 024	60
57	United School of Business Management, PLOT NO. 37/A CHANDAKA I.E PATIA BHUBANESWAR	120
58	Vignan Institute of Technology & Management, BHAIRAVI VIHAR, HARADANGA VILLAGE, PO: MANTRIDI,BERHAMPUR, GANJAM DISTRICT, ODISHA PIN: 761008	60
59	Koustuv Business School (second shift)	30

TABLE- 19 A. Government Colleges offering M.Tech / M. Arch Programme

Regarding GATE scholarship and fee structure please contact concerned institute.

Sl. No.	CODE	COLLEGE/UNIVERSITY (GOV.)	Specialisation	TOTAL
1	BPUT	BPUT, Rourkela, Odisha	Machine Design	18
			VLSI & Embedded Systems	18
			Power System Engineering	18
			Bio-Technology	18
			Computer Science and Engineering	18
			Power Electronics & Drives	18
			Signal Processing & Communication	18
			Heat Power & Thermal Engineering	18
			Production Engg. & Operational Management	18
			Structural Engineering	18
			Water Resource Engg. & Management	18
2	BU	Berhampur University	Computer Science	20
			Electronic Information Systems	20
3	CPT	Central Institute of Plastic Engineering and Technology, Bhubaneswar	Plastic Engineering	18
			Polymer Nanotechnology	18
4	CET	College of Engineering and Technology, Bhubaneswar	Computer Science and Engineering	13
			Industrial Engineering & Management	18
			Information Technology	18
			Structural Engineering	18
			Power System Engineering	18
			Electronics & Instrumentation Engineering	18
			Bio-Technology	18
			Water Resource Engineering	18
			Geotechnical Engineering	18
			Power Electronics & Drives	18
			Energy System Engineering	18
			Electronics & Communication Engineering	18

			Signal Processing Engineering	18
			Thermal Engineering	18
			Design and Dynamics	18
			Textile chemical processing	18
			M Arch	20
5	FMU	F.M. University, Balasore	Computer Science	15
6	IMT	Institute of Management & Information Technology, Cuttack	Information Technology	18
			Computer Science	18
7	IGT	Indira Gandhi Institute of Technology, Sarang	Structural Engineering	18
			Mechanical System Design	18
			Production Engineering	18
			Power System Engineering	18
			Geotechnical Engineering	18
			Power Electronics & Drives	18
			Computer Science & Engineering.	18
			Metallurgical & Materials Engg.	18
			Electronics & Telecomm. Engg.	18
8	IGIT	Indira Gandhi Institute of Technology, Sarang (PT)	Industrial Power Control & Drives(PT)	18
			Environmental Science and Engineering(PT)	18
9	PMEC	Parala Maharaj Engg. College, Berhampur, (PMEC)	Mechanical System Design	18
10	CIME	College of IT & Management Education (CIME), BBSR	Computer Science	18

B. Private Colleges offering M.Tech Programme

1	ACE	Adarsha College of Engineering	Production Engineering	24
			Power Systems Engineering	24
			Computer Science & Engg.	24
			Environmental Sc. & Engg,	24
2	ABT	Ajay Binay Institute of Technology, Cuttack, PVT	Computer Science and Engineering	18

3	AIE	Aryan Institute of Engineering & Technology	Structural Engineering	30
4	BRM	Barrister Ranjit Mohanty International Institute of Technology, Bhubaneswar	Power Electronics and Drives	24
			Electronics and Telecommunications Engineering	24
			Mechnaical Engineering	24
5	BCET	Balasure College of Engineering & Technology, Balasure	Communication Engineering	18
			Heat Power and Thermal Engineering	18
6	BIET	Bhadrak Institute of Engineering & Technology, Bhadrak	Mechanical Engineering	24
			Electronics and Telecommunications Engineering	24
			Civil Engineering	24
			Computer Science and Engineering	24
7	BEC	Bhubaneswar Engineering College	Computer Science & Engineering	18
			Thermal Power Engineering	24
			Electrical Power Systems	24
8	CVR	C. V. Raman College of Engineering, Bhubaneswar	Electronics and Telecommunications Engineering	18
			Chemical Engineering	18
			Information Technology	18
			Mechatronics	18
			Heat Power Engineering	18
			Electrical Engineering	18
			Computer Science and Engineering	18
			Food Technology	18
		2nd shift	Electronics and Telecommunications Engineering	18
			Computer Science and Engineering	18
9	CEB		Computer Science	18

		College of Engineering Bhubaneswar	Communication Systems	18
			Heat Power Engineering	18
			Power Systems Engineering	18
		2nd shift	Soil Mechanics and Foundation Engineering	18
			Heat Power Engineering	18
			Structural & Foundation Engineering	18
10	DRM	Dhaneswar Rath Institute of Engineering and Management Studies, Cuttack	Electronics and Telecommunications Engineering	18
			Electrical Power System	18
			Computer Science and Engineering	18
			VLSI Design and Embedded Systems	18
			Power Electronics and Drives	18
11	EAS	Eastern Academy of Science and Technology, Phulnakhara	Enviornmental Engineering	18
			Electronics & Communication Engineering	18
			Computer Science and Engineering	18
			Machine Design	18
12	EAT	Einstein Academy of Technology & Management	Mechanical System Design	18
			Structural Engineering	18
13	GATE	Gandhi Academy of Technology and Engineering, Berhampur	Industrial Engg.& management	18
			Structural Engineering	18
14	GEC	Gandhi Engineering College, Bhubaneswar	Structural Engg.	18
			Thermal Engg.	18
			Electronics & Communication Engineering	18
			Computer Science and Engineering	18
		2nd shift	Power Electronics and Drives	18
			Mechanical System Design	18
			VLSI and Embedded Systems Design	18
15	GIET		Mechanical System Design	18

		Gandhi Institute for Education and Technology, AT : BANATANGI PO : BAJPUR DIST : KHURDA	Structural Engineering	18
			Power Electronics & Drives	18
			Communication Systems	18
16	GIB	Gandhi Institute for Technological Advancement, (GITA) Bhubaneswar	Production Engg.	18
			Power Systems Engineering	18
			Thermal Engineering	18
			Computer Science and Engineering	18
17	GIF	Gandhi Institute for Technology, Bhubaneswar	Power Electronics and Power Systems	24
			Construction Technology & Management	24
			Computer Science and Engineering	24
			Electronics & Communication Engineering	24
		2nd shift	Automation & Robotics	24
18	GIT	Gandhi Institute of Engineering and Technology, Gunupur	Structural Engineering	18
			Applied Electronics & Instrumentation Engineering	18
			Electronics & Communication Engineering	18
			Computer Science and Engineering	18
			Industrial Engineering	18
			Power Electronics	18
			CAD CAM	18
			Heat Power and Thermal Engineering	18
			Machine Design	18
19	GIEX	Gandhi Institute of Excellent Technocrats, PRINCES AVENUE, GHANGAPATNA, BHUBANESWAR, PO:KANTABADA, VIA:JANLA, DIST:KHURDA	Mechanical System Design	18
			VLSI and Embedded Systems Design	18
20	GIIT	Gandhi Institute of Industrial Technology, Berhampur	Power Electronics and Drives	18
			Electronics & Communication Engineering	18
21	GITM		Mechanical Engineering	18

		Gandhi Institute of Technology & Management	Computer Science & Engineering	18
22	HIT	Hi-Tech Institute of Technology, Bhubaneswar	Power Electronics and Drives	18
			VLSI and Embedded Systems Design	18
			Computer Science & Engineering	18
			Structural Engineering	18
23	KIT	Kalam Institute of Technology	Machine Design & Robotics	24
			Power Electronics & Electrical Drives	24
24	KIS	Konark Institute of Science and Technology, Bhubaneswar	Computer Science and Engineering	18
			Electronics and Telecommunications Engineering	18
			Thermal & Fluid Engineering	18
			Power Engineering and Energy Systems	18
			Nano Technology	18
25	KISD	Koustuv Institute of Self Domain	Computer Science & Engineering	18
			Communication Systems	18
			Information Technology	18
			Power Systems	18
		2nd Shift	Electrical and Electronics Engineering	18
26	KEC	Krupajala Engineering College, Bhubaneswar	Heat Power Engineering	18
			Power Electronics and Drives	18
			Electronics & Communication Engineering	18
			Computer Science and Engineering	18
			Computer Science and Technology	18
27	MIET	Mahavir Institute of Engineering and Technology	Electronics and Telecommunication Engineering	13

			Computer Science and Engineering	13
			Power Systems Engineering	13
			Computer Engineering	13
28	MITS	Majhighariani Institute of Technology and Science	Biotechnology	9
			Mechanical Engineering	9
29	NIT	Nalanda Institute of Technology, Bhubaneswar	Electronics & Communication Engineering	18
			Power Electronics & Drives	18
			Computer Science and Engineering	18
			Thermal Engineering	18
30	NST	National Institute of Science and Technology, Berhampur	Electronics & Communications Engineering	18
			Computer Science and Engineering	18
			Electrical Engineering	18
			Wireless Communication Technology	18
			VLSI and Embedded Systems Design	18
			Electronics and Instrumentation Engineering	18
31	NIE	Nigam Institute of Engineering & Technology	Thermal Engineering	18
			Power Electronics and Drives	18
32	NMI	NM Institute of Engineering and Technology, Bhubaneswar	Mechanical Engineering	18
			Electronics & Communications Engineering	18
			Electrical and Electronics Engineering	18
			Computer Science and Engineering	18
33	OEC	Odisha Engineering College, Bhubaneswar	Computer Science and Engineering	18
			Mechanical Engineering	18
34	REC	Raajdhani Engineering College, Bhubaneswar	Communication Systems	18
			Power System Engineering	18

			Production Engineering	18
			Structural Engineering	18
			Computer Science & Engineering	18
35	SAT	Satyasai Engineering College, Balasore	Electronics & Communication Engg	18
			Mechanical Engineering	18
			Computer Science & Engg.	18
36	SEC	Seemanta Engineering College, Jharpokharia	Electrical Engineering	18
			Mechanical Engineering	18
37	SIT	Shivani Institute of Technology	Power Electronics & Electrical Drives in Electrical Engg.	18
			Thermal Engineering	18
38	SIT	Silicon Institute of Technology, Bhubaneswar	Electronics and Communication Engineering	18
			Computer Science and Engineering	18
			Electrical and Electronics Engineering	18
39	STA	Spintronic Technology & Advanced Research	Computer Science & Engineering	18
			Electronics & Communication Engineering	18
40	SER	Suddhananda Engineering & Research Centre	Power & Energy Engineering	18
			Structural Engineering	18
41	SYN	Synergy Institute of Engineering and Technology, Dhenkanal	Power Electronics and Drives	18
			VLSI and Embedded Systems	18
			Electronics & Communication Engineering	18
			Production Engineering	18
			Computer Science and Engineering	36
42	TCT	TempleCity Institute of Technology and Engineering (TITE), Khurda	Computer Science and Engineering	18

43	TAT	Trident Academy of Technology, Bhubaneswar	Computer Science and Engineering	18
			Electronics and Telecommunications Engineering	18
44	TTS	The Techno School, Bhubaneswar	Electronics & Communication Engineering	18
			Computer Science and Engineering	18
			Electrical and Electronics Engineering	18
45	VIT	Vignan Institute of Technology & Management	Machine Design	18
			Electronics & Telecommunication Engineering	18
46	PIL	Piloo Modi College of Architecture	Executive M Arch	20

TABLE- 20 A. Government Colleges offering M. Pharm Programme

COLLEGE/ UNIVERSITY (GOVT.)	Specialisation	TOTAL seat
Berhampur University	PHARMACEUTICAL TECHNOLOGY	20
	PHARMACEUTICS	20
	PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	20
UNIVERSITY DEPARTMENT OF PHARMACEUTICAL SCIENCES, UTKAL UNIVERSITY	PHARMACEUTICAL CHEMISTRY	10
	PHARMACEUTICS	10
	PHARMACOGNOSY	10
	HOSPITAL & CLINICAL PHARMA.	18
	PHARMACOLOGY	10
	PHARMACEUTICAL BIOTECHNOLOGY	18

B. Private Colleges offering M. Pharm Programme

1	College of Pharmaceutical Science, Puri	PHARMACEUTICS	18.00
2	College of Pharmaceutical Science, Mohuda	PHARMACEUTICS	18.00
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18.00
		PHARMACEUTICAL CHEMISTRY	.00
3	Dadhichi College of Pharmacy, Cuttack	PHARMACOLOGY	18.00
		PHARMACEUTICS	18.00
4	Gayatri College of Pharmacy, Sambalpur	PHARMACEUTICS	18.00
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18.00
		PHARMACOGNOSY	18.00
		PHARMACOLOGY	18.00
5	Gayatri Institute of Science and Technology, Gunupur	PHARMACEUTICS	18
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
6	IMT Pharmacy College, Puri	PHARMACEUTICS	18
7	Indira Gandhi Institute of Pharmaceutical Science, Bhubaneswar	PHARMACEUTICS	24
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
		PHARMACOGNOSY	18
		PHARMACEUTICAL CHEMISTRY	18
		PHARMACEUTICS (DRUG REGULATORY AFFAIRS)	18
		PHARMACOLOGY	24
8	Institute of Pharmacy & Technology, Salipur	PHARMACEUTICAL CHEMISTRY	12
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
		PHARMACEUTICS	18
9	Jeypore College of Pharmacy, Jeypore	PHARMA TECHNOLOGY	18
		PHARMACOGNOSY	10
		PHARMACOLOGY	18

		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
10	Kanak Manjari Institute of Pharmaceutical Sciences, Rourkela	PHARMACEUTICS	18
		PHARMACOLOGY	18
		PHARMACEUTICAL BIOTECHNOLOGY	18
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	10
		PHARMACEUTICAL CHEMISTRY	18
11	Roland Institute of Pharmaceutical Sciences, Berhampur	PHARMACEUTICS	18
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	24
		PHARMACOLOGY	24
	2nd shift *Subject to the result of the Writ Petition No WP(C) 2 in the Hon'ble High Court of Odisha	PHARMACEUTICS*	18
12	Royal College of Pharmacy & Health Science, Berhampur	PHARMACEUTICAL TECHNOLOGY	18
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
		PHARMACOLOGY	18
		PHARMACEUTICS	18
13	Seemanta Institute of Pharmaceutical Sciences, Jharpokharia	PHARMACEUTICS	18
		PHARMACEUTICAL CHEMISTRY	18
14	Sri Jayadev College of Pharmaceutical Sciences, Bhubaneswar	PHARMACEUTICS	18
		PHARMACEUTICAL CHEMISTRY	10
		PHARMACOLOGY	18
		PHARMACEUTICAL ANALYSIS AND QUALITY ASSURANCE	18
15	The Pharmaceutical College, Barpali	PHARMACEUTICS	18
		PHARMACOLOGY	18
		PHARMACOGNOSY	10

*** The tuition fee will be communicated before the counselling for admission through OJEE website and in the counselling brochure after due approval from Government.**

***All the seats mentioned above are as approved by AICTE/UGC/ GOVT. OF ODISHA for the previous academic year, which should only be used as an indicator.**

***Counselling through OJEE-2016 will be done for admission to these courses subject to approval of AICTE / UGC / Government of Odisha / Government of India / BPUT / Other Universities of Odisha / Central Council of Homoeopathy and Central Council of Indian Medicine / Other affiliating Councils.**

APPENDIX – I(See Rule-3)

**Office of the.....Miscellaneous Certificate Case No.of 2016
'RESIDENT/NATIVITY CERTIFICATE OF ODISHA'**

This is to certify that Shri/ Smt/ Miss..... son/ daughter/wife of Shriis a native of the District ofin the State of Odisha and he/his family ordinarily reside in Village/TownP.S....., Tahasil..... in the District of.....

The certificate is being granted only for the purpose of OJEE, 2016 Odisha.

Full Signature of the Applicant

Signature of Revenue Officer
Date :

Round Seal of the Office

Designation with Seal of Office

- Note:**
1. Revenue Officer means the Chief Officer in charge of Revenue Administrative in the District, Sub-Division of Tahasil and includes an Additional District Magistrate and Additional Tahasildar.
 2. No part of the form should be mutilated in any manner. In case of mutilation the certificate is liable to be rejected.

APPENDIX – II

CERTIFICATE OF EMPLOYMENT OF CANDIDATE'S PARENT / SPOUSE

Employer - Government of Odisha / Government of India / Government of India Undertakings and Government of Odisha Undertakings located in Odisha at the time of application (Strike off whichever is not applicable). This shall not be considered as a proof of residentcertificate for candidates opting for admission under any reserved category.

1. Name and Address of Organisation / Office in which employed
2. Name and Designation of the certifying authority (Employer / Head of Office / Organisation)
3. a) Name in full and designation of employee to whom certificate is being issued.
b) Whether in permanent employment
c) Present Place and State of posting
d) Permanent address as per service records
4. Name of the candidate in full
5. Relationship of the employee with the candidate: Father / Mother / Husband / Wife
(Strike out whichever is not applicable)
6. Details of the Institution from which the candidate has passed / appeared at 10+2 /+3, any other Examination
7. Particulars of employment of the employee

Place Date of Joining Period of Service

Full Signature of Employee
Date.....

Signature of the Employer / Head of Office / Organization
Date:

Round Seal of the Office

Designation with Seal of Office

Note : In case the employee is on deputation either from Government of Odisha or India, the above certificate should be signed by the original employer.

APPENDIX – III
‘SC/ST CERTIFICATE BY BIRTH’ (See Rule-8(I))

This is to certify that Sri / Smt / Kumari
Son / daughter of..... of
Village / Town P.S Tahasil
in the district of of the State of Odisha belongs to the
Caste / Tribe which is recognized as Scheduled Caste / Tribe under Constitution (Scheduled Castes) Order 1950 / the
Constitution (Scheduled Tribes) Order, 1950 as amended by the Scheduled Castes and Scheduled Tribes (Amendment)
Orders Act 1976.

Sri / Smt / Kumari and his/her family ordinarily reside(s) in
Village/Town..... of District of the State of Odisha.

Full Signature of the Applicant

Signature of Revenue Officer

Round Seal of Office

Designation with seal of the office
Date

Note : This certificate should be issued by Tahasildar of the place of residence of parent in Odisha. No part of the
form should be mutilated in any manner. In case of mutilation, the certificate is liable to be rejected.

**APPENDIX – IV(Clause 2.1.5 of Information Brochure of JEE - 2016, Odisha)
Certificate of Ex-Servicemen**

1. Name of the Candidate
2. Full name of employee / person
3. Permanent address as per service records
4. Rank in Defence Service
5. Full name of the Candidate
6. Relationship of the employee / person with the Candidate
7. Last place of posting including details of unit
8. Awards received if any

Round Seal of Office

**Full Signature of
Candidate's Parent**

Date

**Full Signature of
Secretary Rajya Sainik Board**

Designation with Seal of Office

ODISHA JOINT ENTRANCE EXAMINATION (OJEE-2016)
APPENDIX – V
CERTIFICATE OF AUTHENTICITY OF ORIYAS (ODIAS) BELONGING TO OUTLYING ORIYA (ODIA)
SPEAKING TRACT [OL CATEGORY]

This is to certify that Mr./Ms.
Son / Daughter / Spouse of Mr./Mrs of
Village / TownP.S Tahasil
in the district ofof the State of whose full signature is given below is an Oriya(Odia) and
belongs to an outlying Oriya(Odia) speaking tract as defined in resolution No-13411-Gen. Dated 8th August ,1969, of
Government of Odisha erstwhile political & services Department (Now: G.A Department) as specified below.

Full Signature of the Applicant

**Signature of the officer not below the
Rank of Tahasildar (Outside Odisha)**
Date

Round Seal of Office

Designation with Seal of Office

APPENDIX – VII
INCOME CERTIFICATE(See Rule- 3)

Office of the
Miscellaneous Certificate Case No.of 2016.

This is to certify that, Sri / Smt / Miss Son /
Wife/Daughter of.....Village.....
P.O.....P.S.....Tahasil In the
District ofIn the state of Odisha has an annual
income Rs.
(Rupees.....) only
from the sources specified below.

SOURCE ANNUAL INCOME

Agriculture Land----- Rs.
Salaries ----- Rs.
Business----- Rs.
Any other sources
to be specified----- Rs.

Total Rs.

This Certificate is being granted only for purpose of

Full Signature of the Applicant

Signature of Revenue Officer
Date :

Round Seal of the Office

Designation with Seal of Office

- Note:** 1. Revenue Officer means the Chief Officer in charge of Revenue Administrative in the District, Sub-Division of Tahasil and includes an Additional District Magistrate and Additional Tahasildar.
2. No part of the form should be mutilated in any manner. In case of mutilation, the certificate is liable to be rejected.

ODISHA JOINT ENTRANCE EXAMINATION (OJEE – 2016)

APPENDIX – VIII

(To be deposited at the Institution/University level)

DECLARATION

Name of the candidateOJEE -
2016 Roll No..... Rank No. Category
Stream

1. This is to undertake that I have taken admission in the College/Institute
..... in
..... out of my own accord.
This allotment is based on the choice exercised by me during counselling process.
2. I have surrendered my OJEE-2016, Odisha Rank Card. I also understand that the Rank
card is no more valid and against the same, I cannot take admission in other discipline
in the same college or in another college in any discipline.
3. I understand that no change of branch or choice of college is permitted in the first year.
Subject to regulation of the University and performance in first year branch change may
be permitted in second year only.
4. I understand that out of Rs..... paid by me after deducting Rs. 4,500/- (for
under graduate / post graduate) towards University and Insurance Fees, the balance
amount will be adjusted towards the fees, payable at college level while joining the
college.
5. We understand that, we will not claim any refund of Rs.....(in full or Part)
deposited at the time of counselling process, even in the case of not joining/withdrawal
from the allotted college/course.
6. I also understand that the fee that I am paying during admission is provisional. I have to
pay the balance if the actual fee is more or will be refunded if the fee is less.
7. I understand that I shall report to the college within the dates mentioned in the allotment
letter of OJEE-2016.
8. We declared that, we have read and understood the above provisions completely and
will also abide by them.

Further, this is to certify that, I have downloaded the correct allotment letter for admission.

Date:

Signature of the Guardian

Signature of the Candidate

ODISHA JOINT ENTRANCE EXAMINATION (OJEE – 2016)
APPENDIX – IX
FACILITATION CENTRE

JEE Cell, Gandamunda, Khandagiri-751030

Bhubaneswar

ODISHA JOINT ENTRANCE EXAMINATION (OJEE – 2016)

SPECIAL INSTRUCTIONS

Guidelines to Candidates:

1. Please check the Admit Card carefully for your Name, Paper, Date of Birth, Gender, Test Center Name, and Category. In case of any discrepancy, communicate to OJEE -14 office immediately for necessary action.
2. The Admit Card is issued provisionally to the candidate subject to his/her satisfying the eligibility conditions.
3. The examination rooms/hall will be opened 30 minutes before the commencement of the test. Candidates should take their seats immediately after opening of the examination hall. If the candidates do not report in time, they are likely to miss some of the general instructions to be announced in the Examination Hall.
4. The candidate must show, on demand, the Admit Card for admission in the examination room/hall. A candidate who does not possess the Admit Card issued by the OJEE-14 shall not be permitted for the examination under any circumstances by the Centre Superintendent.
5. Candidates are advised to bring with them a cardboard or a clip board on which nothing should be written, so that they have no difficulty in filling responses in the Answer Sheet even if the tables provided in the examination room/hall do have smooth surface or uneven surface. They should also bring with them their own Ball Point Pens (Black/Blue) of good quality.
6. No candidate, under any circumstances, will be allowed to enter the Examination Center after the commencement of the examination.
7. A seat indicating roll number will be allocated to each candidate. Candidate should find out and occupy their allotted seat only. Any candidate found to have changed room or the seat on his/her own other than allotted, his/her candidature shall be cancelled and no plea would be accepted for it.
8. Ten minutes before the commencement of the paper, each candidate will be given sealed Test Booklet with an Answer Sheet placed inside it.
9. Immediately on receipt of the Test Booklet the candidate will fill in the required particulars on the cover page of the Test Booklet with Ball Point Pen only. He/She will not open the Test Booklet until asked to do so by the Invigilator. Do not open/break the seal before the announcement. Student is advised to read the instructions written on the booklet regarding the examination.
10. No candidate, without the special permission of the Centre Superintendent or the Invigilator concerned, will leave his/her seat or Examination Room until the full duration of the paper. Candidates must follow the instructions strictly as instructed by the Centre Superintendent/Invigilators.
11. No Candidate will be allowed to carry any baggage inside the Examination Center. OJEE officials/ Center Superintendent will not be responsible for any belongings stolen or lost at the premises.
12. Candidates are not allowed to carry any textual material, Calculators, Docu Pen, Slide Rules, Log Tables, Electronic Watches with facilities of calculator, printed or written material, bits of papers, mobile phone, pager or any other device
13. Smoking and eating is strictly prohibited in the examination room.
14. Tea, coffee, cold drinks or snacks are not allowed to be taken into the examination rooms during examination hours.
15. No candidate, without the special permission of the Centre Superintendent or the Invigilator concerned, will leave his/her seat or Examination Room until the full duration of the paper. Candidates should not leave the room/hall without handing over their Answer Sheets to the Invigilators on duty.

Instructions for Examination

1. Five minutes before the commencement of the paper the candidate will be asked to break/open the seal of the Test Booklet. He/She will take out the Answer Sheet carefully. The candidate should check carefully that the Test Booklet Code printed on left top of the Answer Sheet is the same as printed on the Question Booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet or Answer Sheet or both
2. Candidate will then write particulars with Blue/Black ball point pen only on the Answer Sheet(OMR). Use of pencil is strictly prohibited. If one uses the pencil, his/her answer sheet will be rejected and no correspondence will be entertained in this regard. After completing this step, the candidates will wait for the instruction by the invigilator.
3. The test will start exactly at the time mentioned in the Admit Card and an announcement to this effect will be made by the invigilator.
4. The test will be of 2 hrs or 1 hr duration for different papers. It is clearly notified in the information brochure/booklet and will be mentioned in admit card.
5. The test paper will be consisting questions of equal weightage.
6. Each question is allotted 4 (four) marks for the correct response. No deduction or addition is made from the total score if no response is indicated for a question. Blank OMR submitted without any response will be treated cancelled and no rank will be awarded to the student.
7. There is only one correct response for each question out of four responses given
8. During the examination time, the invigilator will check Admit Card of the candidate to satisfy himself/herself about the identity of each candidate. The invigilator will also put his/her signatures in the place provided in the Answer Sheet / attendance sheet.
10. Candidate shall bring his/her own Ball Point Pens of good quality. These will not be supplied by the OJEE.
11. A signal will be given at the beginning of the examination and at end of the examination. No warning bell or any other bell will be before commencement or before end of examination.
12. The candidate will check that the Test-booklet contains as many numbers of pages as are written on the bottom of the first page of the Test Booklet. The candidates should also verify the series of the Test Booklet with the series of OMR sheet. In case of any variation, the Test Booklet/ OMR sheet should be immediately returned to the invigilator for the replacement with another set of same series available in the examination hall/centre.
13. The candidates must sign on the Attendance Sheet at the appropriate place. The candidates are also required to put their left hand thumb impression in the space provided in the Attendance Sheet.
14. The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per rules.

CODE OF CONDUCT FOR CANDIDATES DURING OJEE – 2016

Candidates shall maintain perfect silence and attend to their Question Paper only. Any conversation, gesture, or disturbance in the Examination Room/Hall shall be deemed as misbehavior. If a candidate is found using unfair means or impersonating, his/her candidature shall be cancelled and he/she will be liable to be debarred for taking examination either permanently or for a specified period according to the nature of offence. Candidates are not allowed to carry any textual material, Calculators, Docu Pen, Slide Rules, Log Tables, Electronic Watches with facilities of calculator, printed or written material, bits of papers, mobile phone, pager or any other device. Possession of any of the above item, his/her candidature will be treated as unfair means and his/her current examination will be cancelled. The candidate shall not remove any page(s) from the Test-Booklet and if he/she is found to have removed any page(s) from his/her Test Booklet, he/she will be presumed to have used unfair means and shall be liable for criminal action.

Candidate must ensure that he/she has returned the OMR sheet to the invigilator keeping the carbon copy with himself/ herself. Leaving the examination hall without submitting the OMR sheet knowingly/ unknowingly will be treated as criminal offence and action will be taken as per law. He/She need not return the question booklet to the invigilator.

IMPORTANT NOTES FOR THE APPLICANT REGARDING ADMISSION

1. **Nativity certificate is mandatory for taking admission against any reserve category like:**
 - i. Schedule Caste (SC), Schedule Tribe (ST),
 - ii. children/wards of Ex-Servicemen (ES),
 - iii. Physically Challenged (PC),
 - iv. Women (WO),
 - v. Green Card (GC),
 - vi. Tuition Fee Waiver (TFW) in all courses.

Nativity certificate is to be produced at the time of document verification during counselling. All such applicants are required to keep the up-to-date nativity certificate ready well in advance before counselling. The candidate has to submit the nativity certificate in the prescribed format i.e., Appendix-I issued not earlier than January 2016. The nativity certificate is mandatory for admission under Lateral Entry for the candidates who are natives of Odisha. The aforesaid condition on nativity certificate is not applicable for outside state candidates.

2. **Mark sheet and Certificate/Provisional Certificate of the qualifying examination must be produced on the day of document verification at the nodal center without which the applicant will not be allowed to participate in the counselling process.**
3. Original certificates, mark sheets and other documents will be verified at the time of document verification at nodal center with respect to eligibility, category and reservation that are claimed and shall be returned to the applicant immediately after the verification. However, original certificates made from appendices and photocopies of the certificates, marksheets, and other relevant documents will be kept during document verification at the nodal center. The candidate has to submit the required certificate in the prescribed format i.e., in given in the Appendix – I to VIII issued not earlier than January 2016.
4. **Claim for admission will be rejected if the candidate cannot submit the original certificates, mark sheets, other necessary documents at the time of document verification or if one has filled the form wrongly.**
5. **Admission may be cancelled at any time, if certificates/ mark sheets/ other documents are found to be forged or manipulated. A candidate will not be considered for admission if he/she fails to substantiate the claim with respect to reservation, category, nativity, date of birth, qualification etc.**

Salient Dates for OJEE-2016

1. Last date for fill-up of online Application forms. : 10th March, 2016
2. Date of download of Admit Card begins from : 20th April, 2016
3. Date of Examination : 8th May, 2016 (Sunday)
4. Probable Date of Declaration of Result : 1st week of June 2016

ADDRESS FOR COMMUNICATION

Chairman,

Odisha Joint Entrance Examination-2016

JEE Cell, Gandamunda, Khandagiri,

DIST- Khordha. Bhubaneswar -751030

Website : www.ojee.nic.in/ www.odishajee.com

E-Mail : odishajee2015@gmail.com

Phone: 0674- 6552455, 6552456, 6552457, 6552458

Fax : 0674-2352457

Ragging in any form is strictly prohibited in an institute as per the order of the Hon'ble Supreme Court of India.