

# **INFORMATION BROCHURE -2018**

**Common Entrance Test (CET)**  
**FOR**  
**ADMISSION TO B.E./B.TECH. (ENGINEERING) COURSES**  
**IN**  
**VARIOUS GOVERNMENT AND PRIVATE COLLEGES**



**THE JAMMU AND KASHMIR**  
**BOARD OF PROFESSIONAL ENTRANCE EXAMINATIONS**

*Email:* [helpdeskjakbopee@gmail.com](mailto:helpdeskjakbopee@gmail.com)  
*E-mail:* [coejakbopeeblq59@gmail.com](mailto:coejakbopeeblq59@gmail.com)

*Website:* <http://www.jakbopee.org>  
*Website:* <http://www.jkbopee.gov.in>

# THE J& K BOARD OF PROFESSIONAL ENTRANCE EXAMINATIONS

## BOARD EXECUTIVES

### Chairman

- Shri Mohammad Ashraf Bukhari, IAS (Rtd.)

### Secretary

- Shri Khurshid Ahmad (KAS)

### Controller of Examinations

- Prof. (Dr.) B. L. Gupta

### FA/CAO

- Shri Mohammad Shafeeq (KAS)

### Under Secretary

- Miss Saniya Malik (KAS)

### Under Secretary

- Mrs Shubi Tabasum

## MESSAGE

The Common Entrance Test for B.E./B. Tech. (Engineering) Courses is scheduled to be conducted on 22<sup>nd</sup> April, 2018 at various centres in Jammu and Srinagar. The importance of this test cannot be under estimated as the candidates appearing in the test have to compete for different engineering courses like Civil Engineering, Electrical Engineering, Mechanical Engineering, Computer Engineering, Electronics and Communication, Information technology, which would make them eligible to compete for employment after completion of the studies. The candidates have, therefore, to take the examination seriously and pursue studies vigorously so that they compete well after completion of the Degrees. It has been noticed in the past that the candidates do not perform quite well in this examination, apparently as they do not take the examination seriously. It would, therefore, be in the interest of the candidates that they take the examination seriously and improve their proficiency which will not only help them in future but will create a huge resource bank, which can be utilized optimally by the State in the public/private sector and will also enhance their employability at the national level. Board has launched a new candidate friendly website [www.jkbopee.gov.in](http://www.jkbopee.gov.in) also and is in the process of upgrading its I.T. infrastructure.



We would appreciate if the candidates remain in touch with the BOPEE website and also make suggestions, so as to further improve upon it and make it more users friendly. We would always value the inputs from the users and assure that we shall positively respond to the suggestions

I wish best of luck.

**Mohammad Ashraf Bukhari, IAS (Retd.)**  
**Chairman**

## MESSAGE

The J&K BOPEE is an organisation entrusted with the responsibility of conducting the Entrance Tests for various Professional Courses including Common Entrance Test (CET) for B.E./B.Tech. (Engineering) courses in Government and Private Colleges of the State for the session 2018-19. The Board has been striving constantly to enhance transparency and objectivity in conducting such tests.



The Board has introduced many measures to facilitate candidates from filling up the Application Forms to the stage of actual selection by switching over to the online mode which includes filling up of Application Forms, deposition of fee, declaration of result etc. In order to bring transparency and efficiency in the system of selection of candidates, BOPEE has undergone technological revolution for the speedy justice to the candidates on merit and has taken steps in this direction like, Speedy Result, Video Counselling, Online submission of application forms, Online counselling, launching of new candidate friendly website, regular updating of website for latest information, etc.

The 21<sup>st</sup> century is an era of technology and there is a great demand of technically trained youth in the state and country. The major Key to the nation's prosperity and security can be its leadership in technology and innovation and thus demands for skilled life training to engineering students. In the global market, only the best engineering education and educators can produce next generation technology driven society. The true importance in engineering education can be measured from the changes and success we have seen globally. In other words engineers secure the faith of growing economy. I offer my good wishes to the candidates for choosing Engineering as career in their life.

I wish you success in life.

**(Prof. (Dr.) Banwari Lal Gupta)**  
Controller of Examinations (COE)

## **INFORMATION AT A GLANCE**

### **Schedule of CET (Engineering)/Counselling – 2018**

<b>S.No.</b>	<b>Description</b>	<b>Date</b>
1.	Date of fillingup of application forms	<b>1<sup>st</sup> Feburary, 2018</b>
2.	Last date of fillingup of application forms	<b>3<sup>rd</sup> March, 2018</b>
3.	Downloading of Admit Cards	<b>10<sup>th</sup>April, 2018 onwards</b>
4.	Date of conduct of examination	<b>22<sup>nd</sup> April, 2018</b>
5.	Declaration of result	<b>By or before 10<sup>th</sup>May, 2018</b>
6.	Declaration of key	<b>By 6.00 PM of day of conduct of CET Examination or upto 12 Noon next day.</b>
7.	Representation against key	<b>Upto 3 days after the conduct of CET Examination.</b>
8.	Counselling Schedule	<b>Shall be notified seperately</b>
9.	Completion of the admission process	<b>By or before 15<sup>th</sup> August, 2018</b>

## CONTENTS

S. No.	Description	Page No.
1.	Introduction	08
2.	Terms and Expressions	08
3.	General Information and Instructions	09
4.	Eligibility for Admission	11
5.	Reservation Policy	11
6.	Fee Structure (Tentative)	14
7.	Application Form	15
8.	Admit Card	20
9.	Conduct of Entrance Examination	21
10.	Time Schedule for Candidates in the Examination Hall	23
11.	Syllabus	24
12.	Determination of Merit	34
13.	Declaration of Result	34
14.	Selection Process	35
	A. Counselling for Allotment of Discipline/Institution	35
	B. Procedure for online Counselling	38
	C. Procedure for Physical Counseling	39
	D. Clarification	39
	E. Upgradation/Allotment Round (2 <sup>nd</sup> round of Counselling)	40
	F. Third round of Counselling	42
	G. Conversion of Category seats, if any	42
	H. Final Round by Personal Counselling (Mopping up Round)	44
15.	Prohibition/Ban on Ragging	46
16.	Institutions with Courses and Tentative Intake Capacity	47
17.	List of Annexure	51

## ANNEXURES

**Annexure-I** Competent Authorities for Issuance of Reserved Category Certificates

**Annexure-II** Sample of OMR Answer Sheet

**Annexure-III** Undertaking and Authority Letter For Counselling

**Annexure-IV** Sample Counseling Form

**Annexure-V** Sample Representation Regarding Answer Key

**Annexure-VI** Certificate of being a Child of Defense Personnel (in-service)

**Annexure-VII** Certificate of being a Child of Defense Personnel (Ex-Servicemen)

**Annexure-VIII** Certificate of being a Child of Paramilitary Force/ Police Personnel (In-Service)

**Annexure-IX** Certificate of being a Child of Paramilitary Force/ Police Personnel (Retired Personnel)

**Annexure X** Income Certificate

### IMPORTANT NOTES:

- i) The candidates, in their own interest, are advised to go through the Information Brochure before filling up of Online Application Forms. Board shall not be responsible for any act of omission or commission in filling up of the Online Application Form by the candidate. It shall be presumed that the candidate has gone through the information contained in the Information Brochure and has agreed to follow the conditions contained therein. No candidate can claim any alteration in conditions which have been incorporated in the Information Brochure and notified in advance.*
- ii) The candidates are further advised to remain in touch with the BOPEE website(s) [www.jkbopee.gov.in](http://www.jkbopee.gov.in) / [www.jakbopee.org](http://www.jakbopee.org). The Board does not undertake any responsibility for any delay caused in publication of Notices/Notifications in the Print Media (newspapers) as delay, if any, in such publication(s) is not within the control of the Board, notwithstanding that the Board notifies the same on the official website(s) and for publication simultaneously on the date of issue of the said notifications/notices etc.*
- iii) Subject to availability of logistics, the Board may conduct online examination if so decided by the Board otherwise the examination shall be conducted in the offline mode.*

## 1. INTRODUCTION:

The Jammu and Kashmir Board of Professional Entrance Examinations (BOPEE) was established by an Act of the State Legislature (Act No. XXV of 2002). Under the Act, the Board is entrusted with the task of conducting entrance examinations and recommending selection of candidates for admission to various professional courses in the State of Jammu and Kashmir. These Programmes, inter alia, include B.E./B.Tech. (Engineering) Courses.

The Government of Jammu and Kashmir in its efforts to create skilled and technical manpower to meet demands of changing times, imparts technical education and develops technological skills through various courses at different levels. Full Time B.E./B.Tech. Engineering courses are offered in Civil Engineering, Electrical Engineering, Mechanical Engineering, Electronics and Communication Engineering, Computer Science Engineering, Information Technology, etc., are offered in various Government and Private Engineering Colleges of the State.

For the academic year 2018, the BOPEE shall recommend candidates for admission to the first semester of various full time Engineering Programmes either through entrance test or on the basis of academic merit of qualifying examination of the candidates depending upon the number of applications received. If the applications for admission are more in number than the seats available, the admission shall be recommended through entrance test. Entrance Test shall be conducted in accordance with the provisions of the J&K Board of Professional Entrance Examinations Act and Rules, Jammu and Kashmir Reservation Act, 2004 and the Rules/Regulations made there under and all other relevant rules, orders, notifications and directions issued/to be issued by the Government of Jammu and Kashmir from time to time concerning technical education. As of now, first priority is to conduct the written test, presuming that the number of candidates will be large, on the basis of past experience.

## 2. TERMS AND EXPRESSIONS:

Certain terms and expressions used in the information brochure have specific importance unless, of course, the context otherwise denotes. For the benefit of the candidates, these terms and expressions are briefly defined hereinafter:-

- ❖ **Advertisement Notification:** means the notification issued by the BOPEE for inviting online applications from eligible candidates for appearing in the Entrance Test;
- ❖ **Application Form:** means the online Application Form available on the official website of the BOPEE to be submitted by the eligible candidates for appearing in the Entrance Test for B.E./B.Tech. Engineering Courses;
- ❖ **Available Seats:** means the seats against which admissions for B.E./B.Tech. Engineering Courses are ordered by the Government of Jammu & Kashmir;
- ❖ **Eligible Candidate:** means a candidate who fulfils the requirements of eligibility as prescribed by the BOPEE and the State Government;
- ❖ **Incomplete Form:** means the Application Form which is wrongly filled in or contains false information of any kind or not having required and /or valid certificates or has any other deficiency and discrepancy whatsoever;
- ❖ **Late Receipt:** means the date after the last date fixed for submission of Online Application Form meant for B.E./B.Tech. Engineering Courses and notified in the admission notification;
- ❖ **Admit Card:** means online admit card issued to the eligible candidates indicating Name, Roll No and name of the test centre etc.;
- ❖ **Entrance Test:** Entrance Test as may be conducted by the BOPEE for selection of candidates;



- ❖ **Competent Authority:** means such authority which is competent under law to issue certificates/or issue such other directions as may be necessary for the conduct of examination;
- ❖ **Merit List:** means the list of candidates, who appear in the Entrance Test, drawn up in the descending order of inter-se-merit;
- ❖ **Private Technical Educational Institutes:** means the Institutions/Colleges established and/or administered by registered societies, public trusts or religious and charitable trusts offering professional courses and duly recognized by the Government of Jammu and Kashmir and other regulating bodies;
- ❖ **Qualifying Examination:** means the examination on the basis of which candidates become eligible to appear in the Entrance Test;
- ❖ **Regulations:** mean the Jammu and Kashmir Board of Professional Entrance Examination Regulations-2016,
- ❖ **Rules:** mean the Jammu and Kashmir Board of Professional Entrance Examination Rules-2014.

#### **ABBREVIATIONS USED:**

- ❖ **BOPEE:** means Board of Professional Entrance Examinations;
- ❖ **CET:** means Common Entrance Test;
- ❖ **NOC:** means No Objection Certificate;
- ❖ **DA:** means Designated Authority;
- ❖ **COE:** means Controller of Examinations;
- ❖ **OM:** means Open Merit candidates;
- ❖ **SC:** means scheduled caste candidates;
- ❖ **ST:** means scheduled tribe candidates;
- ❖ **RBA:** means Resident of Backward Area;
- ❖ **ALC:** means Actual Line of Control;
- ❖ **OSC:** means Other Social Caste;
- ❖ **PRC:** means Permanent Resident Certificate (State Subject);
- ❖ **MSQE:** means marks scored in Qualifying Examination;
- ❖ **RCC:** means Reserved Category Certificate;
- ❖ **DOB:** means Date of Birth.

### **3. GENERAL INFORMATION & INSTRUCTIONS:**

It is expected that the candidates shall be sincere, honest and behave responsibly while appearing in the Entrance Test and shall not resort to any unfair/fraudulent means or impersonation in the examination. In case a candidate is found resorting to any such act, criminal proceedings shall be initiated against him/her including his/her abettors/facilitators, besides debarring him / her permanently from appearing in the Entrance Test in future.

- ❖ The candidates seeking admission to Entrance Test are required to:
  - go through e- Information Brochure carefully and acquaint themselves with all the requirements;
  - satisfy the prescribed eligibility conditions; and
  - Submit online Application Form available on the official website of the BOPEE within the prescribed date.;

- ❖ The candidates applying for admission will be required to appear in the Entrance Test at their own expenses;
- ❖ The recommendation for selection of the candidates in all the categories shall be subject to production of all the relevant certificates in original by the candidates and the verification of the same by the BOPEE/College;
- ❖ No intimation, whatsoever, about non-selection will be sent individually and no correspondence in this regard shall be entertained. The result will, however, be available in both the offices of the BOPEE at Jammu and Srinagar for information and perusal of the candidates. The result will also be available on the BOPEE's website: [www.jakbopee.org](http://www.jakbopee.org) / [www.jkbopee.gov.in](http://www.jkbopee.gov.in)
- ❖ The selection made by the BOPEE to the professional course shall be provisional till final determination of eligibility of the candidates by the concerned Board/ College;
- ❖ The BOPEE shall have power to review the provisional selection list at any time, notwithstanding the fact that the selected candidate has completed his/her admission formalities, where any bonafide error, lapse, mistake, fraud, cheating, misrepresentation, misinterpretation, impersonation or glaring injustice is brought to its notice which has resulted in the inclusion of the candidate in the selection list. Mere selection in the list does not confer any right to admission of the candidate, if he/she is otherwise found ineligible;
- ❖ Complaints against certificates, including those of reserved categories, will not be entertained as the BOPEE is neither an appellate authority nor an investigating agency;
- ❖ Permission of candidates to appear in Entrance Test shall be provisional on the basis of the entries in the Application Form, subject to their being eligible for admission to the courses applied for with reference to certificate being valid on the date of e-filing of Application Form;
- ❖ The answer key will be displayed on the BOPEE'S website in the evening at about 6 PM on the conclusion of the Entrance Test or up to 12 noon next day and will remain there for three days and thereafter will be removed. The candidates who have any complaint against an answer of a question in the Question Paper are free to make written representation with fee of Rs. 1000/= paid at POS Machine Srinagar/Jammu) supported by documentary proof of standard text Books on the prescribed format available on the official website and in the BOPEE office at Srinagar/Jammu which should reach in the office (Srinagar/ Jammu) within three working days, after the Key is made available and thereafter no representation will be entertained/accepted;
- ❖ The Answer Key will be got re-examined by the BOPEE on the basis of the representations so received and the revised key, if any, will be final and no complaint will be then entertained regarding the revised key. The revised Key will be uploaded on the website of the BOPEE. The revised Answer Key, if any, will be applied to Answer Sheets of all the candidates no matter whether they have made such representations or not;
- ❖ OMR Answer Sheets of candidates are machine graded and scanned / scrutinized and double checked with extreme care. As such, there shall be no re-evaluation/ rechecking of OMR Answer Sheets. No correspondence in this regard shall be entertained,
- ❖ Re- Totalling of marks will be allowed on written request along with Payment Receipt of Rs. 1000/= per subject paid at POS Machine in BOPEE Office at Jammu / Srinagar. The application will be received within 5 days, after the declaration of result. Any application received after the stipulated time will not be entertained.

#### 4. ELIGIBILITY FOR ADMISSION:

Candidates applying for admission to B.E./B.Tech. Engineering Courses must fulfil the following eligibility conditions namely:

A candidate must:

- be permanent resident of J&K State as defined in section 6 of the Constitution of the J&K State;
- Have passed Hr. Sec. Part-II (12<sup>th</sup>/10+2) or an equivalent examination from a recognised statutory Board/University. The candidates appearing/appeared in 12<sup>th</sup> class examination can also apply for the Entrance Test;
- Be at least 17 years old on 31<sup>st</sup> December of the relevant year (2018) and have passed 10+2 or equivalent examination with at least 50% marks for Open Merit Category candidates, including the Children of Defence Personnel, Children of Para-Military Forces, Children of State Police Personnel and candidates possessing outstanding proficiency in Sports and 40% marks for the candidates belonging to SC/ST and other Backward Classes.
- Have passed 10+2 examination with English, Physics, Chemistry and Mathematics as their elective subjects in case of admission to B.E./B.Tech. Engineering Courses.
- The candidates appearing/appeared in 10+2 (12<sup>th</sup> Class) annual examination can also apply to appear in CET-2018. However, such candidates have to produce their original marks cards before or at the time of counselling/selection, if they figure in the list of the candidates qualified or called for counselling as the case may be. If a candidate has been called for counselling but has failed to secure required percentage of marks in the qualifying examination, he/she shall not be considered for admission.
- The candidates applying under TFW category are open merit candidates. They must fulfil eligibility conditions meant for open merit candidates.

**Note:** *There is no upper age bar for appearing in the Entrance Test for admission to Engineering Courses, both in Government and Private Colleges.*

#### 5. RESERVATION POLICY:

**The reservation of seats in the Government Engineering Colleges shall be as under:**

S. No.	Categories	Reservation in %age
1.	Open Merit (OM)	50
2.	Reserved Categories	
2.1	Scheduled Caste (SC)	08
2.2	Scheduled Tribes	
2.2.1	Scheduled Tribe, Gujjar & Bakerwal (STGB)	06
2.2.2	Scheduled Tribe, Leh District (STL)	02
2.2.3	Scheduled Tribe, Kargil District (STK)	02
2.2.4	Other Scheduled Tribes (STO)	01
2.3	Socially and Educationally Backward Classes	
2.3.1	Weak and Under Privileged Classes, Social Castes (OSC)	02
2.3.2	Residents of Backward Area (RBA)	20
2.3.3	Residents of Area Adjoining Actual Line of Control (ALC)	03
2.4	Children of Defense Personnel (CDP) *	03
3.	Tuition fee Waiver (TFW) *** (over and above intake capacity)	05

- ❖ The provisions of reservation are not applicable for admissions in Private Engineering Colleges but Tuition Fee Waiver (TFW) is applicable to all the Engineering Colleges, Private as well as Government. Benefit of reservation in Government Engineering Colleges, including Tuition Fee Waiver shall be available only if the category to which a candidate belongs is mentioned in the On-line Application Form. Request at any stage for change or inclusion of category shall not be entertained;
- ❖ Reserved category certificate in the name of the applicant duly issued by the Competent Authority (**Annexure-I**) shall have to be uploaded with the Online Application Form;
- ❖ All the sanctioned seats in the Government and Private Engineering Colleges shall be filled on the recommendation of the BOPEE. However, a specific percentage of seats approved by the J&K Government shall be filled by the management of Private institutions in accordance with the directives of the Hon'ble Supreme Court, under the supervision of the Chairman, Constitutional and Monitoring Committee constituted by the J&K Government. All the admissions in the Management quota of Private Engineering Colleges shall also be made only from the candidates who have appeared in the Entrance Test-2018.
- ❖ Rules 5 and 6 of the JK BOPEE Rules, 2014 deal with reservation of candidates for admission to various professional Courses. These Rules pertain to the candidates seeking admission in Engineering Courses who also claim benefit of the reserved category. These two rules have been reproduced verbatim hereinafter for the benefit of the candidates. They are advised to go through these Rules before they attempt to fill up their online Application Form.
- ❖ **Reservation for candidates for admission to various Professional Courses:**
  - The reservation of admissions shall be applicable only in Government-run Colleges as notified by the Government from time to time, unless otherwise prescribed specifically or notified for any private College;
  - The percentage of seats to be allotted to each category shall be such as notified by the Government from time to time;
  - The benefit of reservation shall be available to the concerned candidate only if the self-attested photo copy of the valid category certificate is uploaded with On-line Application Form;
  - Where a category certificate has not been issued by the designated authority, the candidate shall not be given an opportunity to validate it after the expiry of the last date for submission of the Application Form;
  - No notice shall be given to a candidate whose category certificate has been found invalid by the BOPEE and such a candidate shall be considered in open merit, if found otherwise eligible;
  - The category certificate issued after the expiry of the last date for submission of online Application Form shall in no case be accepted;
  - No under process certificate shall be accepted/ entertained at any cost. It includes under process certificate for the renewal of category certificate;
  - The category certificate must be valid at the time of submission of online Application Form as well as at the time of counseling. Where a candidate has valid category certificate at the time of submission of the form but its validity period is to expire before the date of counselling, such candidate shall get his certificate renewed by or before the date of counselling, otherwise he/she will not get benefit of the category. The date of counselling shall mean the last date for filling up of

online preference forms and such candidates, who have renewed their certificates shall have to inform the Board in person along with a copy of the certificate so renewed ;

- Where a candidate fails to submit reserved category certificate along with the “Application Form”, his/her application will be considered under Open Merit category, if found otherwise eligible;
- A candidate can apply/opt for one reserved category only and choice regarding reserved category once exercised shall be final and at no stage shall be allowed to be changed.
- A candidate will be considered only for one reserved category for selection against the seats reserved for that category even if he/she is eligible to be considered for seats available in more than one category;
- The BOPEE shall follow a rotational policy of odd / fractional seats of contiguous categories by clubbing them together to make it a whole number seat which shall be allotted to the candidate of the clubbed categories by following rotational policy between male and female candidates where such reservation is provided under rules and shall be allotted to higher rank candidate;
- The BOPEE shall try as far as possible to incorporate the seat matrix in the Brochure for each course in the year in which admission is made.

❖ **Competent Authority to Issue Certificate :**

- Authorities competent for issuing reserved category certificates shall be such as notified by the Government from time to time. Provided that in the case of Children of Defense Personnel other than core service, a candidate having a certificate that his/her father is working in Defense Establishment (Military Engineering Service or other service of like nature) where salary is paid out from Defense Estimates is not entitled to the benefit of CDP Category;
- Where this certificate is wrongly accepted and the candidate gets admission on the basis of this certificate, the admission of such candidate will be cancelled as and when this mistake comes to the knowledge of BOPEE or brought to its notice;
- Provided further that the candidates having “Outstanding Proficiency in Sports” must submit their certificates to the Secretary, J& K Sports Council for awarding points which will be then officially forwarded to the BOPEE by the Sports Council. The BOPEE shall not be responsible, where a candidate fails to submit certificates to the Council or Council fails to forward the points of a candidate to the BOPEE. It shall be the sole responsibility of the candidate to ensure that his/her sports points are forwarded by the Council to the BOPEE. **“The sports category candidates must upload one set of the sports certificates along with the Online Application Form within the last date prescribed for submission of the Form in the admission notification to be issued separately”;**
- The Children of serving BSF, CRPF, ITBP and CISF do not fall under CDP category but fall under the category of JKPM. The candidates claiming benefit of any of these categories must ensure under which category they fall and should enter the category details;
- The category candidates should ensure that their reserved category certificate is issued by the designated competent authority and is uploaded with the Online Application Form strictly in accordance with the Guidelines given in the E-Brochure. All the category certificates issued/dated after October, 2005 must be issued under

SRO – 294 of 2005 as amended from time to time. The certificates issued under earlier SRO will be accepted only if they are dated prior to October, 2005. The candidates should insist on the certificate issuing authority to make mention of SRO – 294 in their certificates if they are issued after October, 2005;

- Where a category certificate has not been issued by the designated competent authority, the candidate will not be given an opportunity to validate it after the expiry of the last date for submission of the online Application Form. No notice will be given to a candidate whose category certificate has been found invalid by the BOPEE and such a candidate will be considered in open merit, if found otherwise eligible;
- The certificate issued after the last date for submission of Application Form is over, will not be accepted;
- If a candidate feels aggrieved by the decisions of the BOPEE regarding distribution or clubbing together of fractional seats of reserved categories, he/ she is free to make representation to the Secretary of BOPEE on any working day within one month from the date of issuance of Advertisement Notice . Thereafter, no such representation will be entertained;
- The information furnished by the applicant in the online Application Form shall be deemed to have been given by him/ her;
- It has been observed that students often get confused with ‘SC’ and ‘OSC’ reserved categories. It is hereby made clear that ‘SC’ stands for Scheduled Caste category and ‘OSC’ stands for Other Social Castes, ;
- **\*\*\*These seats in every College and in each course are reserved for those open merit candidates whose annual income of the family from all sources is less than Rs. 4.50 lakh. The candidates having Poor & Backward (P&B) Certificate can use it as TFW Certificate also.**

## 6. FEE STRUCTURE (Tentative):

The fee structure has been furnished by the respective College authorities and the BOPEE is not in any way associated with it and has, therefore, no responsibility, if the fee is raised subsequently. The candidates are advised to enquire, in their own interest, the actual fee to be charged, from the College authorities.

S. No.	Name of the courses	Name of the Institution	Tuition Fee/Sem. (Govt. Engg. Colleges Seats)	Tuition Fee/year (Private Engg. Colleges Seats)
1.	B.E./B.Tech.,	<b>(i) GCET Jammu</b>		
		(a) For candidates of J&K Board of School Education	*Rs.11940/-	
		(b) For candidates other than J&K Board of School Education	*Rs. 12,670/-	
		<b>(ii) MIET, Jammu</b>	Nil	*Rs. 48,000/-
		<b>(iii) SSM College of Engineering, Srinagar</b>	Nil	*Rs. 45,000/-
		<b>(iv) MBS College of Engineering &amp; Technology, Jammu</b>	Nil	*Rs. 45,000/-
		<b>(v) Yogananda College of Engineering &amp; Technology, Jammu (YCET)</b>	Nil	*Rs. 45,000/-
<b>(vi) Bhargava College of Engineering and Technology (BCET), Samba</b>	Nil	*Rs. 48,000/-		

*\*Fee is subject to change from time to time as per Govt. order and is not the responsibility of BOPEE. The information given is only for the convenience of candidates.*

## 7. APPLICATION FORM:

- ❖ The Application Forms have to be **submitted online only** through BOPEE websites [www.jakbopee.org](http://www.jakbopee.org) / [www.jkbopee.gov.in](http://www.jkbopee.gov.in) (through URL's/ links provided for this purpose) within the prescribed date to be notified separately. The payment of Rs. **800/- (Rupees Eight hundred only)** only as fee is to be made online through "Integrated Payment Gateway" with the help of any National Credit Card/Debit Card/facility. The procedure for filing Application Form and eligibility etc. of the candidates have been given in detail in the e-Brochure. The students must necessarily, in their own interest, go through this Brochure before attempting to fill up the online Application Form. **The candidates can download admission notification, Brochure, instructions, Admit Card and all other relevant information from the official website of the BOPEE at any Common Service Centres of J&K State at nominal charges. They can also avail the services at any National Informatics Centre located at the office of the Deputy Commissioner of the concerned District**
- ❖ The applicants are advised to fill the online Application Forms on their own or through a responsible person. The applicants can also contact the "Help Desk" of I.T. Section of BOPEE on 9419150693/9419403272/9697383737/9419434133/9469012295 for any assistance/guidance in this regard on any working day within the last date prescribed for submitting Online Application Form.
- ❖ **Submission of Online Application Forms:**
  - The candidates (Both Open merit and Reserved Category) have to submit **Online Application Forms only** within the last date prescribed in the admission notification,
  - The candidates can change/ modify their online Application Form at any time before they submit it. Once the form is submitted, the entries made therein cannot be changed. It is in the interest of the candidate to make double check before submitting the online Application Form. They are advised, in their own interest, not to share their login details with anybody, lest he/she may get an opportunity to change important details in the Application Form. They can check the status of their Application Form on the official website of the BOPEE. If any form is not confirmed for want of required information, the candidate concerned must report in the BOPEE office by or before the stipulated date fixed for this purpose in the admission notification, failing which his/her Application Form shall be rejected.
- ❖ **The online Application Form has to be submitted as follows:-**

**NAME OF THE CANDIDATE (sample)**

V	A	R	I	N	D	E	R		S	H	A	R	M	A
---	---	---	---	---	---	---	---	--	---	---	---	---	---	---

**Father's Name**

T		R		S	H	A	R	M	A
---	--	---	--	---	---	---	---	---	---



- ❖ Enter the date, month and year of birth as per English Calendar as recorded in the Matriculation Certificate. Use numerals 01 to 12 for the month, 01 to 31 for the date, and last four digits for the year.

23<sup>rd</sup> of November, 1998

2	3	1	1	1	9	9	8
---	---	---	---	---	---	---	---

20<sup>th</sup> of February, 1999

2	0	0	2	1	9	9	9
---	---	---	---	---	---	---	---

- ❖ A candidate will be considered for selection under one reserved category only, even if he/she has more than one reserved category certificate and the category that will be considered will be the one chosen at relevant Serial No. of the Application Form. For example, if an applicant is a ward of a Police person and also hails from a Backward Area and belongs to Scheduled Caste too and he/she indicates 'SC' at the relevant Serial No. of the Application Form, the candidate shall be considered for selection against the available seat for Scheduled Caste category only and he/she will not be considered under any other category.
- ❖ At no stage the category option once exercised in the Application Form will be changed.

#### ❖ **Certificates to be Produced /Uploaded:**

- ❖ The candidates have to upload the following original scanned documents with their online Application Form.
  - Certificate of permanent residence;
  - Marks certificate of the qualifying examination issued by the concerned Board;
  - Matriculation or equivalent examination certificate indicating Date of Birth;
  - The category candidates claiming benefit of any reserved category including Sports and TFW have to upload self-attested copy of their category certificate along with Online Application Form within the prescribed last date.

#### ❖ **Photo/Signature/Thumb Impression:**

- The candidates have to upload a recent Photo, Scanned copy of the Signature and Thumb Impression also.

#### ❖ **Instruction for uploading Photographs/Thumb Impression/Signature:**

- ❖ Candidates must also follow the following instructions:
  - Please ensure that the photograph is taken in a light coloured background;
  - The photograph/signature/thumb-impression images to be uploaded in JPG/JPEG format;
  - The maximum size of the photograph/signature/thumb-impression to be from 10 - 50 KB;
  - Photographs must be snapped on or after 01-01-2018;
  - Photograph must be taken with name of candidate (as written in Application Form);
  - The photograph must be snapped with a placard indicating name of candidate and date of taking photograph. In case name and date are written on the photograph after taking it, the application will be rejected,



**Sample Photograph:**



Varinder sharma  
01-01-2018

- The name and date on the photograph must be clear and legible.
- ❖ Photograph should be without a cap and goggles. However, spectacles are allowed.

**WARNING:**

***The Candidates are warned not to resort to any unfair/fraudulent means or act of impersonation at the time of Entrance Test or upload any objectionable material including a photo of any object, other than his/her own photograph while submitting the online form. In case, a candidate is found taking recourse to such acts, criminal prosecution shall be launched against him/her and his/her abettors. He /she shall be permanently debarred from appearing in the Entrance Test in future.***

**❖ INSTRUCTIONS AND PROCEDURE FOR FILLING UP ONLINE APPLICATION FORM:**

The applicants are advised to:

1. Fill the Online Common Application Form on their own or through a responsible person in their presence. In case of any difficulty, they may approach the BOPEE offices Jammu / Srinagar along with the original documents with prior telephonic (**Help Line**) appointment and payment of a nominal service fee of Rs. 100/= (Rupees one hundred only) through POS machines available at the BOPEE office Jammu/Srinagar for filling the online Common Application Form.
2. Visit the BOPEE website [www.jakbopee.org](http://www.jakbopee.org) / [www.jkbopee.gov.in](http://www.jkbopee.gov.in) and click on the link/button “**Click to Apply**” under the heading **Online Applications** and section **Common Entrance Test** on the home page displayed to you.
3. A page with following Examination (CET) specific information will be displayed:
  1. Year and Month of Applying;
  2. Registration Schedule;
  3. Important Instructions;
  4. instructions for uploading images; (link/URL)
  5. instructions for uploading documents; (link/URL)
  6. steps to fill application form
    - i. Click here to fill application; (link/button)
    - ii. Make Payment; (link/button)
    - iii. Upload Documents; (link/button)
    - iv. Print Application Form; (link/button)
  7. if already applied
    - i. Check Application Status (link/button)
    - ii. Forgot Application No. (link/button)
    - iii. Edit Application Form (link/button)

4. Go through the **Registration Schedule** for this examination where start and last date for filling up the online application is given besides payment last date and documents uploading last date.
5. Read the instructions carefully given in the **Important Instructions** section.
6. Click on the link **instructions for uploading images** and follow the guidelines for scanning and Uploading of Photograph, Signature and Thumb Impression. It also provides links to compress the images to the desired size for uploading. Desired size of the JPEG images is as under:
  1. **Photograph** with **nameplate** and **date of taking the photo** with size from 10-50 KB
  2. **Signature** with size from 10-50 KB
  3. **Thumb Impression** with size from 10-50 KB
7. Click on the link **instructions for uploading documents** and follow the guidelines for Scanning your documents (Permanent Resident Certificate, Date of Birth Certificate, Marks Sheet, Category Certificate and/or any other certificate, if applicable) to PDF files for uploading. It also provides links to compress the pdf document files to the desired size for uploading. Desired size of the below mentioned PDF documents is from 100-200 KB
  - a. Permanent Residence Certificate (mandatory for all)
  - b. Date of Birth Certificate (mandatory for all)
  - c. Marks Sheet of the Qualifying Examination (mandatory for all except in whose case result is awaited)
  - d. Reserved Category Certificate (where ever applicable)
8. Before actually filling up the online form please make sure that you have soft copies of the following ready:
  1. Photograph, Signature and Thumb Impression In JPEG format of Specific size;
  2. All scanned documents in PDF format of Specific size and
  3. A valid Credit/Debit Card / Net Banking credentials for making online payment.
9. Now you are ready to fill the online application form in the following steps:
  1. Click the link/button **Click here to fill application**, a window will pop up with the important instruction and after reading these instructions click on the **I have read the instructions** check box and then click on the **Apply** button.
    - i. A page with all form details will be shown. After filling in the details of the form and uploading your PST Enter Verification Code in the text box given at the bottom as in the captcha image and then click on the Submit Button.
    - ii. If information provided by you is incomplete and invalid then the page will display the relevant messages otherwise a page with your submitted details will be show with options either to verify that your details for correctness or edit and correct the given details.
    - iii. Please note that your registration details are non-editable in normal circumstances once submitted.
    - iv. If you want to edit/correct your registration details then click on **Click Hereto edit your registration details** link. You can do the same as many times as you require.
    - v. If your registration details are correct then click the **Click Here** link
    - vi. An Application No. like (Your Application No:**21800400001**) will be generated

and page showing Application submitted Successfully, thank you for registering message and information “A confirmation email has been sent to your e-mail id.” will be displayed.

- vii. If you want to make payment at this time then click on [Step 2-Click here to Make Payment](#) otherwise close this popup window.
2. Click on the link/button **Make Payment** a page with some details will be shown. Enter your Application No., Date of Birth and Verification code and then click the Submit button.
  - i. If you details submitted are correct then a **Pay** button along with the title Make Payment Online will be displayed at the bottom.
  - ii. Clicking on this link/button will display a page with payment procedures and refunds etc. and click on **I have read the Instructions** check box and then click on proceed for payment button.
  - iii. Make payment by any desired mode:
    1. Debit Card
    2. Credit Card
    3. Net Banking
  - iv. After successful payment a Transaction Acknowledgement page with transaction details will be displayed which you can either note down or take a print out of.
  - v. If you want to upload you documents at this time then click on [Step 3-Click here to Upload Document](#) otherwise close this window.
3. Click on the link/button **Upload Documents** a page with some details will be shown. Enter your Application No., Date of Birth and Verification code and then click the Submit button.
  - i. If you details submitted are correct then a page with different types of documents and choose file buttons will be displayed.
  - ii. Click on each of the **choose file** buttons and choose the correct relevant pdf document for each, where ever and if applicable.
  - iii. After choosing these documents click on the check box given at the bottom and provide the verification code in the text box as given in caption image and then click on the upload button.
  - iv. If the documents are of the correct/specific size and type then the documents will be uploaded and links to view and delete these documents, if required, will be displayed.
  - v. Now you can close this window after ascertaining that the correct documents have been uploaded by viewing them.
4. Click on the link/button **Print Application Form** a page with the preview of the application form will be displayed with all the submitted details including payment details.
  - i. Click at the print button at the bottom to take a print out of the Application Form.
  - ii. Keep the Printed Application form safely for record and reference.
10. For those who have already applied use the section
  1. if already applied
    - i. To check the status of your application by clicking on the link/button **Check Application Status** a page with some details will be shown. Enter

your Application No., Date of Birth and Verification code and then click the Submit button.

1. If your details submitted are correct then following sections will be displayed
    - a. **Application Status** which shows whether the form has been checked by BOPEE, current status of the application and payment status along with the link to print the E-Receipt is shown.
    - b. **Documents Uploaded** which shows the documents uploaded, their status and buttons to view or upload the respective documents.
  2. After doing so, it is strongly recommended you close the browser window(s).
- ii. If at any point of time you forget your application number, click on the link/button **Forgot Application No.** A page with some details will be shown. Select your Examination Type, and enter your Name, Father's Name and Date of Birth and Verification code and then click the Submit button.
1. If your details submitted are correct, then you will be shown your Application No. e.g. **Your Application is : 21800400001**
  2. After doing so, it is strongly recommended you close the browser window(s).

**Note: For updated instruction (if any), please visit the website [jkbopee.gov.in](http://jkbopee.gov.in) or [jakbopee.org](http://jakbopee.org) and read the updated (if any) Instructions/e-Brochure carefully.**

## **8. ADMIT CARD:**

- ❖ No candidate shall be allowed to enter Test Centre/venue without valid Admit Card in original;
- ❖ Admit card can be downloaded within the prescribed date. However, mere possession of admit card shall not ipso-facto confer eligibility on a candidate who is otherwise ineligible to appear in the Entrance Test;
- ❖ The Admit Cards will be available online. The candidates are advised to download their Admit Cards from the BOPEE official Websites ([www.jakbopee.org](http://www.jakbopee.org) or [www.jkbopee.gov.in](http://www.jkbopee.gov.in)) on photo paper printed in colour. The candidates will be informed through a separate notification regarding the date for downloading of admit cards. Applicants are, therefore, advised to keep themselves updated with the information on the official website,
- ❖ Applicants, who don't have internet facility, may avail this facility at the **Help Desk** of I.T. Section of BOPEE with prior telephonic appointment, on nominal fee of Rs. 100/=, on any working day at the below mentioned BOPEE offices:
  - ❖ BOPEE Office, Bhagat-i-Barzullah, opposite J&K Bank, Srinagar-190005 (10 A.M. to 5 P.M.);
  - ❖ BOPEE Office, 4th Floor, South Block, Bahu Plaza, Jammu-180012 (10 A.M. to 5 P.M.);
  - ❖ Candidates shall have to preserve admit cards till the allotment of seats/completion of selection/admission process,
  - ❖ Admit card is an extremely important document. It should not be mutilated, defaced or changed in any manner which makes it doubtful.

## 9. CONDUCT OF ENTRANCE EXAMINATION:

### ❖ Centres of Examination:

- The Entrance Test shall be held at the centres as may be specified by the Board in the cities of Srinagar and Jammu only;
- Centres shall be allotted by the BOPEE and the information regarding this shall be provided to the candidates on the Admit Cards;
- The Test Centre once allotted shall not be changed under any circumstances;
- The medium of test will be English only,
- The Board shall not conduct another test in any circumstances whatsoever for those candidates who fail to appear in the test on the scheduled date.

### ❖ Nature of Question Paper:

- It shall be the sole responsibility of the candidate to check the Question Booklet before attempting to answer any question. Where a Question Booklet has any missing page, blank page, missed question or damaged or defaced page, it shall be the responsibility of the concerned candidate to bring it into the notice of the concerned invigilator and get it replaced by a new Booklet of the same series. The Question Booklet must have 180 questions. No complaint in this regard shall be entertained by the Board after the conclusion of the examination;
- CET shall consist of **Single Paper** with **three sections** comprising of **Physics, Chemistry and Mathematics** with **180 questions** (60 questions from each section) with time duration of 3.00 hours. The questions shall be multiple choice objective types with one mark each. There will be **0.25 negative marks** for each wrong answer;
- The broad distribution of questions in different subjects shall be:-

Name of the Stream	Number of papers	Subjects	No of Questions	Time Duration
CET (Engineering) 2018	Single	(i) Physics,	60	<b>3 Hours</b>
		(ii) Chemistry	60	
		(iii) Mathematics	60	

- The question paper shall be objective type containing multiple choice answers. It contains several pages stapled together in one cover. The questions are based on knowledge, understanding and application of the relevant subject that a student of 10+2 standard is expected to possess. All questions are compulsory. There are 0.25 negative marks for every wrong answer. A candidate having less than ten (10) marks or as may be fixed by the Board shall not be considered for admission.
- The Candidates should not make any type of marking on the Question Booklet. Paper for rough work is included in the Question Booklet. Each Question Booklet has four series, which are in alphabets i.e. A, B, C, D printed on the cover page of the Question Booklet. At the end of the Entrance Test, candidates can take the Question Booklets with them.

### ❖ Nature of OMR Answer Sheet:

- In order to maintain transparency of examination, candidates are provided OMR Answer Sheet (Optical Mark Reader Answer Sheet) having original copy and candidate's

copy(Annexure

II).

The candidates are directed to fold at perforation at the top of sheet, tear it after the Test is over and separate original copy and candidate's copy. Finally they shall have to hand over the original copy to

the invigilator and take along with them the candidate's copy;

- The OMR Answer Sheets are used in order to simplify the procedure of evaluation and also to ensure highest accuracy. Each circle on the OMR Sheet has an alphabetical or numerical value. So a small mistake in shading the round spot on the circle may make a big mistake;
- The OMR Answer Sheets will be supplied to the candidates in the examination hall;
- At the top of the OMR Sheet, there are few blanks which are to be filled in carefully;
- Write Question Booklet Number, Booklet series, and Roll Number in numerical and also darken the appropriate circles;
- Write the given certification statement in your running handwriting in English and append your signature and left hand thumb impression at the space provided for the purpose on your OMR Sheet. This certificate is to be authenticated by the invigilator and superintendent of the examination centre;
- Complete the formalities and wait for the signal to start, tear and open the seal of Question Booklet, begin reading and answering the questions;
- Recording of wrong Roll No. or Question Paper Series or its omission on the OMR Answer Sheet shall be done by the candidate at his/her own risk. The Board shall, in no case, entertain any complaint of the candidate regarding the same,
- Each question is followed by four responses i.e. 1, 2, 3, and 4; of which only one is correct or the most appropriate response. Indicate the correct response by darkening the appropriate circle completely with black or blue ball point pen on the Answer Sheet.

**For Example Q.11**

**Albert Einstein got the Noble Prize in:**

**1. Theory of Relativity**

**2. Photo Electric Effect**

**3. General Theory of Relativity**

**4. Laser**

The correct response is (2). Locate the Question Number in the OMR Answer

Sheet and darken the circle under column (2) as shown below:

Ensure that the circle is completely darkened. Incomplete or faintly darkened circle will be rejected by the Optical Scanner and consequently no marks/negative mark will be awarded for the same.

If more than one circle is darkened or if the response is marked in any other manner as shown at "B" it shall be treated as a wrong.

**A**

**B**

10	①	②	③	④
11	①	●	③	④
12	①	②	③	④
13	①	②	③	④

Correct way of answering

27	○	●	○	●
28	○	○	●	○
29	○	✓	○	○
30	○	○	×	○
31	●	○	○	○

Incorrect way of answering

### ❖ Instructions:

Candidates are required to go through the instructions given below carefully:-

- The examination centres will open 15 minutes before the reporting time of the Entrance Test on the day of examination,
- Candidates are expected to be in their seats at the reporting time of the Entrance Test;
- Candidates who do not possess the Admit Cards will not be allowed to sit in the examination hall under any circumstances. This card must be shown on demand;
- No textual material, printed/ handwritten will be allowed in the hall. Candidates are advised not to carry any such material in the examination hall;
- No candidate shall be allowed to enter examination hall for appearing in examination after the distribution of Answer Sheets;
- The candidates are not allowed to bring mobile phones/ calculators / pocket transistors/ electronic watches with facilities of calculator/slide rules, any form of table or any other such aid.
- Tea, coffee, cold drinks or snacks are not allowed in the examination hall during the Entrance Test;
- Smoking in the examination hall is not allowed;
- The candidate must sit in the seat allotted to him/ her;
- In no case a candidate can change his/ her seat;
- No candidate will leave the hall before the expiry of full time prescribed for the Entrance Test and without handing over Answer Sheet to the invigilator on duty;
- No person/ persons other than those authorized by the BOPEE shall be allowed to enter the examination hall;
- Amanuensis will not be allowed,
- The candidate's misbehaviour in any manner in the Examination Hall shall entail him/ her disqualification. Any disturbance in the examination hall shall be deemed as misbehaviour and the candidates shall forfeit the right to continue to sit in the examination hall. The decision of the centre superintendent shall be final.

## 10. TIME SCHEDULE FOR THE CANDIDATES IN THE EXAMINATION HALL:

<b>09:55 AM</b>	Reporting time in the Examination Hall.
<b>10:00 AM</b>	The Invigilator shall ascertain the identity of each candidate by comparing his/her facial appearance with the photograph given in the admit card and attendance sheet. The centre Supervisor shall also check the identity of the candidates and ensure that only the genuine candidates have been allowed to sit in the examination hall and there is no case of impersonation.
<b>10:15 AM</b>	Candidates will be given OMR Answer Sheet. They will go through instructions printed and fill in the particulars on the Answer Sheet.
<b>10:25 AM</b>	They will be given Question Booklet. The Question Booklet number is to be entered on the Answer Sheet.



<b>10:30 AM</b>	They will break open the seal of the Question Booklet and start attempting the questions.
<b>01:30 PM</b>	The candidates will remain in their seats. They will hand over the OMR Answer Sheets to the Invigilator, take the question answer booklet and OMR candidate's copy along with them and leave the examination hall only when they are asked to leave.

**Note:** After distribution of Answer Sheets, no candidate shall be allowed to go out of the examination hall under any circumstances.

## 11. SYLLABUS:

The entrance test is based on the courses of study and syllabi of 12<sup>th</sup> class. It is given as under along with broad weightage of each subject in the question paper of the Entrance Test.

**Note:** The marks distribution given in the syllabus is only illustrative. It will not accrue any right to the candidate, if this distribution of marks is not strictly reflected in the question paper.

## PHYSICS

### UNIT 1: PHYSICAL WORLD AND MEASUREMENT

**(Marks: 02)**

S.I. units, Fundamental and derived units. Accuracy and precision of measuring instruments, Errors in measurement, Significant figures. Dimensions of Physical quantities, dimensional analysis and its applications.

### UNIT 2: KINEMATICS

**(Marks: 03)**

Motion in a straight line: Position-time graph, speed and velocity. Elementary concepts of differentiation and integration for describing motion. Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity-time graph, position-time graphs, relations for uniformly accelerated motion, (graphical treatment and calculus approach). Scalar and Vector quantities, addition and Subtraction of vectors, general Vector and notation, Relative Velocity. Scalar and Vector products of two vectors with properties, Unit Vector, Resolution of a Vector in plane rectangular components, Motion in a plane, Projectile Motion.

### UNIT 3: LAWS OF MOTION

**(Marks: 02)**

Concept of force and Inertia, Newton's First Law of motion; Momentum and Newton's Second Law of motion, Impulse; Newton's Third Law of motion. Law of conservation of linear momentum and its applications, Equilibrium of concurrent forces. Friction, static and kinetic friction, laws of friction, rolling friction.

Dynamics of uniform circular motion: Centripetal force and examples of circular motion (vehicle on level circular road, vehicle on banked road.)

### UNIT 4: WORK, ENERGY AND POWER

**(Marks: 02)**

Concept of scalar products of vectors, Work done by a constant force and variable force; kinetic energy, work energy theorem, power. Potential energy, Potential energy of spring, conservative forces, conservation of mechanical energy (K.E. and P.E.), non-conservative forces; Elastic and inelastic collisions in one and two dimensions.



**UNIT 5: MOTION OF SYSTEM OF PARTICLES AND RIGID BODY (Marks: 02)**

Centre of mass of a two-particle system, Centre of mass of a rigid body; Concepts of vector product of vectors: moment of a force, torque, angular momentum, conservation of angular momentum with some examples. Moment of inertia, radius of gyration. Values of moment of inertia for simple geometric objects (no derivation), statement of parallel and perpendicular axes theorems and their applications. Rigid body rotation and equations of rotational motion.

**UNIT 6: GRAVITATION (Marks: 02)**

The universal law of gravitation. Acceleration due to gravity and its variation with altitude, depth and shape, Kepler's laws of planetary motion. Gravitational potential; gravitational potential energy. Escape velocity. Orbital velocity of satellite. Geo-stationary satellites.

**UNIT 7: PROPERTIES OF BULK MATTER (Marks: 02)**

Elastic behavior, Stress-strain relationship. Hooke's Law, Young's modulus, bulk modulus, shear modulus of rigidity. Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes) Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, Reynolds number. Bernoulli's theorem and its applications Surface energy and surface tension, angle of contact, applications of surface tension – ideas to drops, bubbles and capillary rise. Heat, temperature, thermal expansion; specific heat, calorimetry; change of state-latent heat. Heat transfer-conduction, convection and radiation, Newton's law of cooling.

**UNIT 8: THERMODYNAMICS (Marks: 02)**

Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), Heat work and internal energy. First law of thermodynamics. Second law of thermodynamics: reversible and irreversible processes. Heat engines and refrigerators (concept only)

**UNIT 9: BEHAVIOUR OF PERFECT GAS AND KINETIC THEORY (Marks: 02)**

Equation of state of a perfect gas, work done on compressing a gas. Kinetic theory of gases – assumptions, concept of pressure. Kinetic energy and temperature: rms speed of gas molecules; Degrees of freedom, Law of equipartition of energy (Statement only) and applications to specific heat capacities of gases; concept of Mean free path, Avagadro's number.

**UNIT 10: OSCILLATIONS AND WAVES (Marks: 04)**

Periodic motion – Period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M.) and its equation; phase; oscillations of a spring-restoring force and force constant; energy in S.H.M. – kinetic and potential energies; Simple pendulum-derivation of expression for its time period; Free, forced and damped oscillations, resonance. Wave motion. Longitudinal and transverse waves, speed of a wave. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, Standing waves in strings and organ pipes, fundamental mode and harmonics, Beats, Doppler effect.

**UNIT 11: ELECTROSTATICS (Marks: 04)**

Electric charges: Conservation of charge, Coulomb's law-forces between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field: Electric field due to a point charge, Electric field lines, Electric dipole, Electric field due to a dipole, Torque on a dipole in uniform electric field. Electric flux, Statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). Electric potential, electric potential due to a point charge, a dipole and system of charges; Equipotential surfaces, Electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, Dielectrics and electric polarization, capacitor and capacitance, combination of capacitors in series and in parallel, capacitance of parallel plate capacitor with and without dielectric medium between the plates, Energy stored in a capacitor. Van de Graff generator.

#### **UNIT 12: CURRENT ELECTRICITY**

**(Marks: 04)**

Electric current, Drift velocity, Ohm's law, Electrical resistance, V-I characteristics (linear & non-linear), Electrical energy and power, Electrical resistivity and conductivity, Carbon resistors, Colour code for carbon resistors; Temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchhoff's laws and their applications. Wheatstone bridge, Metre bridge. Potentiometer – principle and its application to measure the potential difference and for comparing e.m.f. of two cells; measurement of internal resistance of a cell.

#### **UNIT 13: MAGNETIC EFFECTS OF CURRENT AND MAGNETISM**

**(Marks: 05)**

Biot – Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long current carrying straight wire, straight and toroidal solenoids. Force on moving charge in uniform magnetic and electric fields. Cyclotron. Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; Moving coil galvanometer, its current sensitivity and conversion with examples. Current loop as a magnetic dipole and its magnetic dipole moment, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro-magnetic substances with examples. Electromagnets and factors affecting their strength, permanent magnets.

#### **UNIT 14: ELECTROMAGNETIC INDUCTION AND ALT. CURRENTS**

**(Marks: 04)**

Electromagnetic induction: Faraday's law, induced emf and current; Lenz's Law. Eddy currents. Self and mutual inductance. Alternating currents, peak and rms value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only) & LCR circuits series, resonance; power in AC circuits, wattless current. AC generators and transformer.

#### **UNIT 15: ELECTROMAGNETIC WAVES**

**(Marks: 02)**

Electromagnetic waves and their characteristics. Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

**UNIT 16: OPTICS****(Marks: 07)**

Ray optics-Reflection of light, spherical mirrors, mirror formula, refraction of light-Total internal reflection and its applications, Refraction at spherical surfaces, lenses, thin lens formula, Lens-makers Formula, Magnification, Power of a Lens. Combination of thin lenses in contact, Microscope and Astronomical Telescope (reflecting and refracting) and their magnifying powers. Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proofs of laws of reflection and refraction using Huygen's principle. Interferences, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes, Polarisation, plane polarized light; Brewster's law, uses of plane polarized light and Polaroid's.

**UNIT 17: DUAL NATURE OF MATTER AND RADIATION****(Marks: 02)**

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation; particle nature of light. Matter waves-wave nature of particle, de Broglie relation. Davission-Germer experiment.

**UNIT 18: ATOMS AND NUCLEI****(Marks: 03)**

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr's model of atom, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number, nuclear fission and fusion.

**UNIT 19: ELECTRONIC DEVICES****(Marks: 04)**

Quantitative ideas on Energy bands in solids, conductors, insulators and semiconductors. Semiconductors; Semiconductor diode: I-V characteristics in forward and reverse bias; diode as a rectifier; I-V characteristics of LED, photodiode, solar cell and Zener diode; Zener diode as a voltage regulator. Junction transistor and its action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT) concept of NAND and NOR gates. Transistor as a switch.

**UNIT 20: COMMUNICATION SYSTEM****(Marks: 02)**

Basic elements of communication system (block diagram only), Bandwidth of signals (speech, TV and digital data); Bandwidth of Transmission medium, Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation: Production and detection of an amplitude modulated wave.

## CHEMISTRY

**UNIT 1: CHEMICAL ARITHMETIC & ATOMIC STRUCTURE****(Marks: 03)**

Laws of chemical combination, Mole concept (numericals) Percentage composition, Chemical reactions, Stoichiometry and calculations based on stoichiometry.

Atomic structure:- Bohr's model of Hydrogen atom, Quantum numbers, Pauli's exclusion principle, Hund's rule and Aufbau principle. Heisenberg's uncertainty principle, de-Broglie wave equation and its significance.

#### **UNIT 2: CHEMICAL EQUILIBRIUM**

**(Marks: 04)**

Law of mass action, Le-Chatelier's principle, and its application to physical and chemical equilibria. Ionisation of weak electrolytes (Ostwald's dilution law)

Acids and bases: Acid base equilibria. Bronsted-Lowry and Lewis concept, of acids and bases. Ionic product of water. pH and pOH scales, pKa & pKb values, Solubility product, Buffer solutions Common ion effect, Hydrolysis of salts

#### **UNIT 3: CHEMICAL KINETICS**

**(Marks: 02)**

Rate of chemical reaction, Average and instantaneous rate, Factors effecting rate of reaction, Order and molecularity of reaction, Integrated rate equation and Half-life period (for zero and first order) reaction, Activation energy and Arrhenius equation.

#### **UNIT 4: SOLUTIONS**

**(Marks: 02)**

Vapour pressure, Raoult's law, Ideal and Non-ideal solutions, Colligative properties.

Determination of molecular mass of non-volatile solutes through colligative properties.

Abnormal molecular masses and Van't Hoff Factor.

#### **UNIT 5: CHEMICAL THERMODYNAMICS**

**(Marks: 04)**

Energy changes taking place during chemical reactions, Internal Energy and Enthalpy changes, Enthalpy of combustion, Solution and Neutralization.

Hess's Law (Numerical problems) Laws of thermodynamics-first, second & third, Concepts of Entropy and Free energy, Spontaneity of a chemical reaction and Thermodynamic equilibrium.

#### **UNIT 6: REDOX REACTIONS AND ELECTROCHEMISTRY**

**(Marks: 03)**

Dependence of electrode and cell potential on concentration (Nernst Equation), Electrode potential as a criteria for product formation in electrolysis. E.M.F. of Galvanic cell, Relationship between free energy change and E.M.F. of a cell. Definition and units of Equivalent, Molar and Specific conductivity.

#### **UNIT 7: SOLID STATE & STATES OF MATTER**

**(Marks: 04)**

Boyle's Law, Charle's law, Dalton's law of partial pressure, Graham's law of diffusion of gases.

Causes of deviation from ideal behaviour, ideal gas equation and nature of 'R', Vander Waal's equation, surface tension and viscosity of liquids.

Crystalline and amorphous solids, Crystal lattice, Crystal types, Packing efficiency, calculation of density of unit cell, Number of atoms per unit cell in a cubic cell. Co-ordination number, Stoichiometric defects: Schottky, Frenkel and interstitial.

Properties of solids: Electrical, Magnetic & Dielectric.

#### **UNIT 8: SURFACE CHEMISTRY**

**(Marks: 02)**

Freundlich Adsorption isotherm, preparation of colloidal solutions by physical and chemical method. Electrical properties (cataphoresis, electroosmosis, coagulation and protective colloids) Homogeneous and Heterogeneous Catalysis.

**UNIT 9: PERIODIC PROPERTIES****(Marks: 02)**

Classification of elements as s, p, d, and f block elements. Variation of Ionization energy, Electron affinity, Electronegativity, Atomic and Ionic radii along the period and down the group in the periodic table.

**UNIT 10: CHEMICAL BONDING AND MOLECULAR STRUCTURE****(Marks: 04)**

Types of chemical bonds, Ionic & covalent bonds, Bond parameters, Quantum theory of covalent bond, pi and sigma bonds, Hybridization involving s, p and d-orbitals, Dipole moments and hydrogen bond.

VSEPR: Shapes of simple molecules ( H<sub>2</sub>O, NH<sub>3</sub>, SO<sub>2</sub>, CO<sub>2</sub>, PCl<sub>3</sub>, PCl<sub>5</sub>, ClF<sub>3</sub>, BF<sub>3</sub>, SF<sub>4</sub>, XeF<sub>2</sub>, XeF<sub>4</sub> ).

Molecular orbital theory: Energy Levels and M.O. diagrams of H<sub>2</sub>, H<sub>2</sub><sup>+</sup>, He<sub>2</sub>, O<sub>2</sub>, O<sub>2</sub><sup>1-</sup>, O<sub>2</sub><sup>2-</sup> & F<sub>2</sub>.

Bond order and its significance.

**UNIT 11: CHEMISTRY OF REPRESENTATIVE ELEMENTS****(Marks: 04)**

**S and P Block Elements:** Electron configuration, Oxidation states and trends in various properties like ionization energy, electron affinity, atomic radii, electronegativity and diagonal relationship.

**Alkali metals:** Hydration of ions, action with ammonia, flame colouration, solubility of hydroxides, carbonates and sulphates.

**Alkaline Earth Metals:** Solubility of carbonates, hydroxides and sulphates.

**Boron Family:** Structure of halides, relative acid strength of trihalides of boron.

**Carbon family:** Hydrides and oxides.

**Nitrogen family:** Oxides of Nitrogen and Phosphorous, reducing nature, basic strength and boiling points of their halides.

**Oxygen family:** volatility, thermal stability, acid character, reducing character and bond angles of their hydrides, oxyacids of sulphur.

**Halogen family:** Bond energy, colour and oxidizing power, boiling point, acid strength and dipole moment, thermal stability, reducing power of hydrides, relative acidity and oxidizing power of oxyacids of halogens.

**UNIT 12: TRANSITION ELEMENTS INCLUDING LANTHANOIDES****(Marks: 02)**

Electron configuration, Oxidation states, Colour, and Magnetic properties.

Oxides of Vanadium, Chromium and Manganese Alloys of Copper, Silver and Iron.

Metallurgy of Iron, Copper and Zinc.

**UNIT 13: CO-ORDINATION CHEMISTRY****(Marks: 04)**

Introduction, Ligands, Co-ordination Number, IUPAC Nomenclature.

Bonding theories: Werner's, VBT and CFT.

Isomerism in Co-ordination compounds (Ionization, Linkage, Hydrate, Geometrical and Optical).

Applications of Co-ordination complexes in Biology, Medicine and Analytical Chemistry.

**UNIT 14: NOMENCLATURE AND BASIC CONCEPTS IN ORGANIC CHEMISTRY (Marks: 03)**

Nomenclature of organic compounds (monofunctional and polyfunctional groups), inductive, mesomeric resonance and hyperconjugation effects, reaction intermediates, carbocations, carbanions and free radicals with their general stability order, types of organic

reactions (addition, substitution, elimination and redox reactions), aromaticity on the basis of Huckel rule. Ortho, meta and para directing groups.

**UNIT 15: HYDROCARBONS**

**(Marks: 03)**

Structural isomerism in alkanes, alkenes, alkynes and arenes, stereoisomerism: geometrical and optical isomerism, chirality, origin of chirality, specific rotation, racemisation and resolution, conformations in ethane and cyclohexane, relative configuration (D,L-Nomenclature), absolute (R and S system of nomenclature).

**UNIT 16: ORGANIC CHEMISTRY BASED ON FUNCTIONAL GROUP-I**

**(Marks: 02)**

Haloalkanes, haloarenes, alcohols and phenols: General methods of preparation and properties. Chloroform and Iodoform.

**UNIT 17: ORGANIC CHEMISTRY BASED ON FUNCTION GROUP-II**

**(Marks: 03)**

Ethers, Aldehydes, Ketones, Monocarboxylic acids: General methods of preparation and properties. Derivatives of monocarboxylic acids like acid halides, acid anhydrides acid amides and esters.

Relative strength of carboxylic acids

**UNIT 18: ORGANIC CHEMISTRY BASED ON FUNCTIONAL GROUP-III**

**(Marks: 03)**

Cyanides, Isocyanides, Nitrocompounds and Amines: General methods of preparation and properties. Relative basic character of amines.

**UNIT 19: MOLECULES OF LIFE**

**(Marks: 03)**

Carbohydrates: Definition, Classification, Mutarotation, Structure of Amino-acids, Peptides and Proteins (Molish and ninhydrin tests). Classification and uses of vitamins. Chemicals in medicine and health care, Dyes and drugs. Chemical reactions in atmosphere, ozone depletion and its effects. Acid rain, Green House effect & Global warming.

**UNIT 20: POLYMERS**

**(Marks: 03)**

Introduction, Classification, Methods of Polymerisation (Addition, Condensation, Free Radical, Cationic & Anionic).

Natural & Synthetic Polymers: Polythene, Nylon, Polyster, Bakelite and Rubber.

Biodegradable and Non-Biodegradable Polymers.

## **MATHEMATICS**

**UNIT 1: SETS, RELATIONS AND FUNCTIONS**

**(Marks: 06)**

**Sets** and their representation, finite and infinite sets, empty set subsets, subset of real numbers especially intervals, power set, universal set. Venn diagram, union and intersection of sets. Difference of sets, Compliment of a set. Ordered pairs, Cartesian product of sets, number of elements in the Cartesian product of two finite sets.

**Relations**, Domain, co- domain and range of relation, types of relations, reflexive, symmetric, transitive and equivalence relations.

**Functions** as special kind of relations from one set to another, domain, co-domain and range of a function. One to one, onto functions. Real valued functions of the real variable; constant, identity, polynomial, rational, modulus, signum and the greatest integer functions with their graphs. Sum, difference, product and quotients of functions. Composition of functions, inverse of a function, binary operations.

#### **UNIT 2: COMPLEX NUMBER; LINEAR INEQUATION; LINEAR PROGRAMMING (Marks: 06)**

**Complex number:** Conjugate of a complex number, modulus and amplitude (argument) of a complex number, Argand's plane and polar representation of complex numbers, algebraic properties of complex numbers. Fundamental theorem of algebra, solution of Quadratic equation in the complex number system. Square root of a complex number.

**Linear inequation:** Algebraic solution of linear inequalities in one variable and two variables.

**Linear programming:** Introduction, definition of related terminology such as constraints, objective function, optimization, different type of linear programming problem (L.P), mathematical formulation of L.P problem, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions.

#### **UNIT 3: SEQUENCE AND SERIES, PERMUTATION AND COMBINATION & BINOMIAL THEOREM (Marks: 06)**

**Sequence and series:** Arithmetic progression (A.P), arithmetic mean (A.M), nth term, sum to n-terms of an A.P, Geometric progression (G.P), Geometric Mean (G.M), nth term, sum to n-terms and sum to infinity of a G.P. Relation between A.M and G.M. Sum to n terms of  $\sum n$ ,  $\sum n^2$  and  $\sum n^3$ .

**Permutation and combination:** Fundamental principle of counting, factorial n, permutations  $P(n,r)$  and combinations  $C(n,r)$ , simple applications.

**Binomial Theorem:** Binomial theorem for positive integral power. general and middle terms in the Binomial expansion. Pascal's triangle and simple applications.

#### **UNIT 4: TRIGONOMETRIC AND INVERSE TRIGONOMETRY FUNCTIONS (Marks: 06)**

Positive and negative angles, measuring angles in radians and in degrees, Conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Periodicity of Trigonometric functions. Basic Trigonometric identities  $\sin^2 x + \cos^2 x = 1$  for all Sign of  $x$  etc. Trigonometric functions and their graphs. Expressions for  $\sin(x \pm y)$ ,  $\cos(x \pm y)$ ,  $\tan(x \pm y)$ ,  $\cot(x \pm y)$ , sum and product formulae.

Identities related to  $\sin 2x$ ,  $\cos 2x$ ,  $\tan 2x$ ,  $\sin 3x$ ,  $\cos 3x$ , and  $\tan 3x$ . General and principal solutions of trigonometric equations of the type  $\sin x = \sin a$ ,  $\cos x = \cos a$ ,  $\tan x = \tan a$ .

**Inverse trigonometric functions,** range, domain, principal value branches. Graphs of inverse trigonometric functions, elementary properties of inverse trigonometric functions

#### **UNIT 5: MATRICES AND DETERMINANTS (Marks: 04)**

**Matrices,** concepts, notation, order, equality, types of matrices, Zero matrix, transpose of matrix, Symmetric and skew symmetric matrices. Addition, multiplication, scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication of matrices. Non-commutativity of multiplication of matrices and existence of

non-zero matrices whose product is the zero matrix (order 2x2). Concept of elementary row and column operation, Invertible matrices and uniqueness of inverse, if it exists. (Matrices with real entries).

**Determinants** of square matrix (upto 3x3 matrices) properties of determinants, minors, cofactors and applications of determinants in finding area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables using inverse of a matrix.

## UNIT 6: LIMIT, CONTINUITY AND DIFFERENTIATION

(Marks: 08)

Concept of limit of a function. Theorems on Limits, Evaluation of limits using standard results

$$\lim_{x \rightarrow 0} \frac{\sin x}{x}, \lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}, \lim_{x \rightarrow 0} \frac{1}{x}, \lim_{x \rightarrow \infty} \frac{1}{x}, \lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x$$

$$\lim_{x \rightarrow 0} (1 + x)^{1/x}, \lim_{x \rightarrow 0} \frac{\log_e(1 + x)}{x}, \lim_{x \rightarrow 0} \frac{e^x - 1}{x},$$

**Continuity** of a function at a point. Continuity of Sum, product and quotient of functions. **Derivative**: definition of a derivative of a function, geometrical interpretation of the derivative.

- Derivative of sum, difference, product and quotient of two or more functions.
- Derivative of algebraic and composite functions.
- Derivative of trigonometric and inverse trigonometric functions.
- Chain rule, derivative of implicit functions.
- Derivative of logarithmic and exponential functions.
- Logarithmic differentiation.
- Derivative of functions expressed in parametric forms.

Second order derivatives.

- Rolle's and Lagrange's Mean Value Theorem and their geometrical interpretation and their simple applications.

**Application of Derivative**: rate of change, increasing and decreasing functions, tangents and normals, approximation, maxima and minima (first derivative and second derivative test). Simple problems.

## UNIT 7: INTEGRATION AND DIFFERENTIAL EQUATIONS

(Marks: 07)

Integration as inverse process of differentiation. Integration of variety of functions by Substitution, by parts, by partial fractions. Simple integrals of the type:

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}},$$



$$\int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}, \int \frac{(px + q)}{ax^2 + bx + c} dx, \int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx,$$

$$\int \sqrt{a^2 \pm x^2} . dx, \int \sqrt{x^2 - a^2} . dx,$$

$$\int \sqrt{ax^2 + bx + c} dx, \int \frac{dx}{a + b \cos x}, \int \frac{dx}{a + b \sin x}, \int (px + q)\sqrt{ax^2 + bx + c} dx$$

Definite integrals as a Limit of a sum. Fundamental Theorem of calculus. Basic properties of definite integrals Evaluation of definite integrals.

**Application of integrals:** Application in finding the area under simple curves, especially lines. Areas of circles, parabolas and ellipses (in standard form) Area under the curve  $y = \sin x$ ,  $y = \cos x$ , area between the above two curves.

**Differential Equations:** Definition, order and degree of a differential equation. General and particular solutions of a differential equation. Formation of a differential equation whose general solution is given. Solution of differentiation equation by method of separation of variables. Solution of Homogeneous differential equation of first order and first degree. Solution of linear differential equation of the type:

$$\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ alone and}$$

$$\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y \text{ alone.}$$

#### UNIT 8: STRAIGHT LINES AND CONIC SECTIONS

(Marks: 05)

Distance between two points, section, slope of a line, angle between two lines, various forms of equations of lines, point-slope form, intercept form, two point form, and normal form. General equation of a line, distance of a point from a line. Conic Section: Sections of a cone, circles, parabola, ellipse, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of conic section. Standard equation of a circle, parabola, ellipse, and hyperbola and their simple properties.

#### UNIT 9: STATISTICS AND PROBABILITY

(Marks: 06)

**STATISTICS** Measure of dispersion, mean, deviation, variance and standard deviation of ungrouped/ grouped data. Analysis of frequency distribution with equal means but different variances.

**PROBABILITY** :Random Experiment: outcome, sample spaces.

Events: Mutually exclusive and exhaustive events. Axiomatic (set theoretic) probability, probability of an event, probability of “Not” and “Or” events. Multiplication theorem on probability, conditional probability, independent events, total probability, Baye’s theorem, random variable and its probability, distribution, mean and variance of a random variable. Repeated independent (Bernouli) trials and Binomial distribution.

#### UNIT 10: VECTORS AND THREE DIMENSIONAL GEOMETRY

(Marks: 06)

Vectors and scalars, magnitude and direction of a vector Direction Cosines and ratios of a vector. Types of vector, equal, zero, unit, parallel and collinear vectors. Position vector of a

point, negative of a vector, components of a vector, addition of vectors, Scalar multiplication, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors, Scalar triple product. Coordinate axes and Coordinate planes in three dimensions of a point, distance between two points and sectional formula.

**STRAIGHT LINES AND SPACE** Direction cosines and direction ratios of a line joining two points. Cartesian and vector equation of a line (in various forms), coplanar and skew-lines, shortest distance between two lines.

**PLANES** Cartesian and vector equation of a plane (in various forms). Distance of a point from a plane.

Angle between:

- i. Two lines
- ii. Two planes.
- iii. A line and a plane

## **12. DETERMINATION OF MERIT:**

- ❖ Merit list shall be prepared on the basis of aggregate marks obtained in qualifying examination (12<sup>th</sup> class) by the candidates, in case entrance examination is not conducted;
- ❖ If the entrance examination is conducted, the selection of candidates for admission to the programme will depend on their performance at the entrance test and eligibility. The Board shall prepare list in order of inter-se merit of candidates in the CET-2018 entrance test in descending order for the Open Merit Category and similarly for each Reserved Category separately;
- ❖ For the purposes of allotment of seats to the reserved category candidates in Government Engineering Colleges, inter-se-merit within each reserved category shall be taken into consideration;
- ❖ In the event of the number of candidates belonging to a reserved category being less than the number of seats available for the category, the resultant vacancies shall be filled from amongst the candidates figuring in the open merit category strictly in order of merit;
- ❖ In case two or more candidates have obtained the same number of marks in entrance test, the inter-se-merit of such candidates shall be determined by taking into account:
  - Marks obtained in Mathematics component of the Entrance test;
  - Marks obtained in Physics component of the Entrance test, if marks obtained in Mathematics component are equal;
  - Marks obtained in Chemistry component of the Entrance test if marks obtained in Mathematics and Physics components are equal;
  - Candidate older in age if marks obtained in Math, Physics and Chemistry are same.

## **13. DECLARATION OF RESULT:**

After the conclusion of Entrance Test, the answer key shall be displayed on BOPEE's website in the evening of date of conduct of CET -2018 or at 12 noon on next day and shall remain on website for three days so that a candidate finding any discrepancy in the Question Paper and Answer Key can submit representation along with proper proof from standard text book within three working days after the test is over in the BOPEE's

office at Srinagar or Jammu accompanied with the payment receipt of Rs. 1000/- per representation per paper paid by him or her at the POS terminal at J&K BOPEE office Jammu/Srinagar.

The representations will be consolidated and referred to the experts whose opinion will be final. The revised key, if any, will be uploaded on the BOPEE's website and thereafter no complaint will be entertained. However, re-totalling of marks will be allowed on written request accompanied by the payment receipt of rupees 1000 paid by him/her at POS terminal at J&K BOPEE Srinagar/Jammu. The application will be received within 03 (three) days after the declaration of result. Any application received after this date shall not be entertained.

The result will be published in two local dailies and will be uploaded on the website of the Board [www.jakbopee.org](http://www.jakbopee.org)/[www.ikbopee.gov.in](http://www.ikbopee.gov.in) The process of selection will be notified separately.

#### **14. SELECTION PROCESS:**

Subject to the qualifying Benchmarks as may be fixed by the Board, the allotment of seats shall be made on the basis of merit cum preference and reservation rules, as applicable for the course, through a process of counselling detailed as under:

##### **A. COUNSELLING FOR ALLOTMENT OF DISCIPLINE/INSTITUTION:**

- (i) The candidates, at times, take counselling very lightly and do not join the allotted streams/Institutions of their choice exercised by them during counselling which leads to repeated rounds of counselling, thus delaying the admission process abnormally. The candidates are, therefore, advised to fill in the online preference form with due care, diligence and application of mind, as any carelessness on his or her part may deprive him/her of a seat/institution of his/her choice notwithstanding his/her merit position.
- (ii) Counselling being an extremely important component in the process of selection it affords the candidates an opportunity of indicating their choices/ preferences about allotment of disciplines/institutions. The candidates should make a realistic assessment of the streams which they are likely to get and should exercise options accordingly during counselling on the option form during the online counselling and the online form. If physical round takes place, the candidates must come for counselling along with all documents in original; admit card and a payment receipt of **Rs. 1200/-** paid at the POS terminal at BOPEE office Srinagar/Jammu. The fee can also be paid through swap machine available at BOPEE office, Srinagar/Jammu. However, in exceptional cases, where the BOPEE is satisfied on the basis of documentary proof that the applicant is an orphan or is living in an abject poverty, the fee charged may be refunded if he/she fails to take admission due to some unavoidable reasons beyond his/her control;
- (iii) The candidates should indicate clearly multiple choices of disciplines / institutions in the counselling form which they want to join in order of preference.

##### **Note:**

- (i) ***The Board may follow online counselling or physical counselling as may be***

*decided by it.*

- (ii) The Board may resort to the filling up of Online Preference Form by the eligible candidates as part of the counselling and dispense with the physical presence of the candidate during the course of counselling. This is to avoid rush of the candidates and make the process a hassle free one. The details of online counselling shall be notified by the Board before hand if such a decision is taken by it.*
- (iii) Physical presence of the candidate at counselling in case (i) above is not followed.*

**Note:**

*In case of online counselling, General/Technical instructions for filling up the preferences shall be as under:-*

## **GENERAL AND TECHNICAL INSTRUCTIONS FOR FILLING UP ONLINE PREFERENCE FORM:**

### **(a) General Instructions:**

1. Candidates are advised, in their own interest, to go through the **Instructions** contained therein before actually submitting the **online Preference Form**;
2. BOPEE is seeking Preferences from such candidates who have qualified for CET -2018 and have been asked to fill in the Preference Form through online mode only;
3. The Online Preference Form enables a candidate to fill in the preferences for various disciplines/institutions for allotment of a seat for admission in B.E/B.Tech. Engineering Courses in the Govt. and Private Engineering Colleges of the state;
4. Candidates will initially be required to enter the requisite/mandatory details for registration and obtaining the password for subsequent logging in to the website;
5. During the online filling up of Preference Form, the candidates will get all the details of the disciplines available viz-a-viz the institutions;
6. Candidates are permitted to conduct dummy exercise (rehearsal) of filling up of the preferences and this shall be available till such time as may be notified by the Board. The objective of this is to give the candidate a clear idea with regard to his preferences;
7. While conducting dummy exercise, a candidate should also keep with him CET – 2018 Entrance Result details (Application No., Score, Rank, etc.);
8. This will facilitate candidates to fill up the final Preference Form in a hassle free and relaxed manner;
9. Candidate should select his/her most preferred preference first along with the College of preference followed by second, third, fourth and so on for the said course;

10. The second preference for the discipline shall be given by the candidate by choosing the college preference as above;
11. This preference shall be available till all the preferences/ colleges are exhausted by the candidate;
12. Candidate will be required to fill up at least one preference for a discipline/college and without entering any preference, the candidate will not be able to proceed further;
13. Candidates can modify the preferences selected by them till such time they do not finally submit/lock the Preference Form, after which the candidate will not be able to modify the same;
14. The candidate shall have to deposit a Fee of **Rs. 1200/- (non-refundable)** online and after submission of online fee, the preference form of the candidate will be locked.
15. Candidates will get sufficient time to fill in the Preference Form and should not be in a hurry while filling up the Form. This system has been evolved to facilitate candidates to fill in the form online without approaching the BOPEE office in person.
16. Candidates who have submitted the form online shall, however, be required to download/print at least one copy of the Preference Form for retention by the candidate ;
17. Candidates should remain in touch with the BOPEE website [www.jkbopee.gov.in/jakbopee.org](http://www.jkbopee.gov.in/jakbopee.org) for update, if any, in this regard;
18. For further information please see the Technical information as under:

### **(b) Technical Instructions:**

- **Please Read the Instructions Carefully.**
  - Keep following information ready before applying:
    - ✓ CET Roll No.
    - ✓ CET Score.
    - ✓ CET Rank.
  - Click on “**Sign Up**” link, user will be redirected to the “**Sign Up**” page where candidate needs to register by filling up the “**Sign Up**” form.
  - Click on “**Submit**” button after filling all the details asked in the Form.
  - Details entered in the previous step will show up for preview. If there is any mistake in information provided, click on “**Edit**” button shown at the bottom, make changes and then click on “**Submit**” button again.
  - If information given is correct as shown in the preview window, click on “**Submit**” button, your username will be shown which will be same as your **CET Roll No.** and an email will be sent to the same e-mail ID which was provided during filling of Online Application Form.

- Candidate must activate the account by clicking on the **activation link** provided in the mail sent and by entering the “**OTP**” given in the email and also enter new password for his/her account.
- Candidate will not be able to login unless the account is activated.
- After successfully completing the above process candidate will be able to login by clicking on “**Login**” link.
- Username: CET Roll No.
- Password: Same as set during account activation.
- After login, candidate can view their **Personal Details** and **CET Score** by clicking on **Personal Profile**.
- **Submitting Preferences:**
  - Candidate must lock the preferences before the *last date*; candidates will not be able to lock their choices after the *last date*.
  - Click on “**Subject**” link after logging in.
  - Select *disciplines* candidate wants to apply and then click on “**Select**” button.
  - Selected disciplines available in the college will be shown in the “**disciplines available box**”
  - Candidates are advised to select disciplines as per their preferences from “**disciplines available box**” and clicking on “>>” button to set their preferences, disciplines chosen will be shown in the “**disciplines assigned box**” with preference selected.
  - If a candidate wants to remove the preference he/she can do so by selecting the preference from “**disciplines assigned box**” and clicking on “<<” button.
  - Preferences select by the candidate will be saved *automatically*; candidate will get the operations performed by him/her whenever he/she logs in to the Application.
  - Candidate can also see the preview of the preferences selected by him/her by clicking on “**Preview**” button and can also take the print out of the same for their perusal.
  - Candidate can **add** and **delete** preferences anytime but before *lastdate* and before **locking** their preferences.
  - If candidate wants to lock his/her choices, click on “**Submit**” button; a preview of choices will be shown and if he/she is satisfied with his/her preferences locked him/her then by clicking on “**Submit**” button the *Preview Page of selected* choices will be *locked*.
  - Once a candidate locks his/her choices then no modification can be done in the preferences selected.
  - Candidates will be given the option to “**make payment**” of fee online only after the choices are locked, Fee must be paid before the last date of fee submission.
  - Candidates can submit fee after locking their choices and clicking on *subject tab*. Only those Applications will be accepted having choices locked and have fee submitted on time, Applications failing this criteria will be rejected.

➤ Candidates are advised to take **printout** of the preferences they have selected by clicking on “**Print Application Form**” after locking their choices, sign this Application Form and submit the same along with fee receipt to BOPEE.

• **Making Fee Payment:**

- Fee will only be paid online before the last date of fee submission.
- Fee payment option will be given only after candidate locks his/her preferences.
- Click on “**make payment**” button, candidate will be redirected to **Billdesk.page** and make payment by choosing any available option.
- **Payment Receipt** will be generated after payment is successful.
- Candidate can take **print** out of the payment receipt.

**B. PROCEDURE FOR ONLINE COUNSELLING:**

The following shall be the procedure for online counselling:

- (i) Subject to the limits fixed by the Board, candidates who have qualified the examination and figure in the State Merit List shall be eligible to participate in the online counselling, provided they have submitted necessary documents online/offline as may be notified by the Board;
- (ii) Such candidates shall be required to fill in online preference forms, as per the schedule as may be notified by the Board;
- (iii) The candidates shall be given time to conduct mock exercise to fill in the online preferences;
- (iv) The candidates shall be required to pay an online counselling fee of Rs.1200/- to be eligible for consideration for allotment of seat;

**C. PROCEDURE FOR PHYSICAL COUNSELLING:**

The following procedure shall be followed:

- (i) Subject to the limits fixed by the Board candidates, who have qualified the examination and figure in the State Merit List shall be eligible to participate in the Physical counselling, provided they have submitted necessary documents online/offline as may be notified by the Board;
- (ii) Such candidates shall be required to fill in preference forms, as per the schedule as may be notified by the Board. They shall be required to be present during the process of counselling and appear before the counseling committee.
- (iii) The candidates shall be required to pay an counselling fee of **Rs.1200/-** to be eligible for consideration for allotment of seat through POS machine in the BOPEE office;
- (iv) The procedure for allotment of the seat shall be the same as given herein above viz. on the basis of merit , preferences given by the candidates with due regard to the Reservation Rules. However, candidates will be called for counselling on their turn as per merit obtained in the examination.

After completion of the first round of counselling (either through online or Physical Counselling) a Notification indicating the allotment of seats to the candidates will be displayed on website of BOPEE i.e. [www.jkbopee.gov.in](http://www.jkbopee.gov.in) and **shall be published in the leading English dailies also.**

All candidates, to whom a seat has been allotted in the 1st round on the basis of

Merit-cum-Preference will have to compulsorily join college and course so allotted, within prescribed period by completing requisite formalities. i.e. submission of original educational & academic documents, like State Subject, category certificate etc) and by submission of such other documents/undertakings as may further be required.

#### **D. CLARIFICATION:**

A candidate, to whom a seat has been allotted in 1st round and stakes a claim for betterment of his/her choice, must initially accept allotment and join College by completing necessary formalities as set out by Rules, failing which such a candidate(s) will not be eligible to participate in second round of counselling but may be allowed subsequently to compete against such category seats which may remain vacant and the Board decides to fill the same from OM category candidates.

Seat so allotted to such a candidate who does not join, will be presumed to be a vacant seat as on and immediately after the date set out as last date for joining college in terms of such allotment. Such a vacant seat will be allotted in next round of admission process within prescribed period.

Any upgradation or revision in the allotment of seats/colleges as may become necessary due to resultant seats caused due to non-joining/resignation etc. of a seat etc. will be considered, on the basis of merit-cum-preference only.

#### **E. UPGRADATION/ALLOTMENT ROUND (2<sup>ND</sup> ROUND OF COUNSELLING)**

The following procedure shall be followed, in case it is decided by the Board to conduct upgradation/allotment(second round) through online counselling:-

- (i) The seats available due to non-joining, resignation etc. shall be notified by the Board. Only such candidates who have been allotted a seat during first round and have joined the College/Institution will be eligible to participate in the upgradation round of counselling;
- (ii) The candidates who participated in the first round of counselling but could not get a seat due to (SNA)/or CNA shall be eligible to participate in the counselling;
- (iii) Depending upon the number of seats available, Board may allow additional candidates to participate in the counselling by reducing the cut-off merit, if the Board is of the opinion to do so;
- (iv) The candidates eligible/desirous to participate in the upgradation/allotment round shall be required to indicate the fresh preferences for the seats proposed to be filled up (to be notified) during the said round of counselling caused due to non joining etc. of the candidates/resignation etc;
- (v) Their preferences indicated by the candidates earlier during the first round of counselling shall, therefore, be deemed to be cancelled and shall not be applicable for this round of upgradation/allotment;
- (vi) The seats vacated by the candidates during the upgradation process shall automatically be added to the seats available and allotted on the basis of merit-cum-preference during the online counselling.



- (vii) The seat left out by the OM candidate during the first round shall be allotted to the OM candidate and those left by the category candidates shall be allotted to the category candidate only during this round of counselling.
- (viii) The candidates who have paid the online fee during the first round shall not be required to pay any fee during this round of counselling but shall have to fill in the reference code of such fee paid earlier. Therefore, only such candidates who are participating in the online counselling for the first time shall be required to pay online fee of Rs.1200/-;

**Note:-(i) *Rule-17 of the Reservation Rules (SRO-294 of 2005) shall not apply during the upgradation/allotment round. The candidates upgraded/allotted a seat shall be required to join the college within the stipulated time as may be notified by the Board.***

**(ii) *The candidates who join the college on the basis of first round of counselling and wish to participate in the second round of counselling should, therefore, take a decision for participation in the second round, after considering that they may lose the seat allotted to them during the first round, as such seat shall become part of the seat matrix immediately he/she fills up the fresh preference form during the second round to participate in the upgradation round.***

**(iii) The candidates who are participating for the first time in counselling shall be required to pay an amount fee of Rs. 1200/- to become eligible for counselling for allotment.**

Following procedure shall be followed in case it is decided by the Board to conduct upgradation/allotment round (2nd round of counselling) through physical counselling:-

1. The seats available due to non joining, resignation etc shall be notified by the BOPEE. All candidates who have joined the course/college shall be eligible to participate in the process of counselling/upgradation and those who have not joined on allotment of the seat during the first round shall not be eligible;
2. The candidates who participated in the first round of counselling but could not get a seat due to (SNA)/or CNA shall be eligible to participate in the counselling;
3. Depending upon the number of seats available, Board may allow additional candidates to participate in the counselling by reducing the cut-off merit, if the Board is of the opinion to do so;
4. The candidates eligible and desirous of participating in the physical round of upgradation/allotment shall be required to fill in fresh preference forms and the preference forms filled online during first round shall be deemed to be cancelled;
5. The candidates shall have to appear during the upgradation/physical round in person before the counselling committee/Board as per the schedule notified by it. The candidates shall have to register themselves in the Board office in the morning and shall have to participate in the counselling process on their

turn. The seat shall be allotted to the candidates who participate in the counselling at relevant point of time on the basis of merit-cum-preference. In case any candidate fails to appear in the counselling at his/her turn he/she shall lose claim on the seat available, which shall be allotted to the next available candidate in order of merit. However, such a candidate who missed the counselling on his/her turn and reports at a later date/time of his/her turn during the counselling period as notified, shall only be considered against the seat(s), which are available at that point of time; and

6. The seats vacated by the candidates due to upgradation etc shall be added to the seat matrix during the day on minute to minute basis and the seat matrix shall undergo change on minute to minute basis, which shall be displayed on the monitors available in the BOPEE office.

**Note:-(i)Rule 17 of the ReservationRules (SRO-294 of 2005) shall not apply during the upgradation/allotment round. The candidates upgraded/allotted a seat shall be required to join the college within the stipulated time as may be notified by the Board; and**

**(ii) The physical round of counselling may either be conducted on a single day or on different dates/days as may be notified by the Board. Such seats as of the ReservationRules (SRO-294 of 2005) remain unfilled at the conclusion of first days of counselling may be carried to the next day/date of counselling as may be decided by the Board. However, the candidates who did not participate in the counselling process on a particular date/day notwithstanding his/her higher merit shall, subject to the above conditions, be eligible to compete for the seats as are carried forward to the next day/date of counselling. Such candidates shall have no claim on a seat which was allotted to a candidate during the previous day/date of counselling on the basis of his/her merit, preference and availability of seat at the time of counselling. In other words the candidates cannot stake a claim on a seat which has been allotted to another candidate on the grounds that the candidate could not participate in the physical round of counselling earlier when the seat was available. Such a process, if allowed, would mean re-opening of admission/allotment process and thereby result in no- completion of admissions within the stipulated/prescribed time limit by the AICTE/other regulating authority Hon'ble Supreme Court of India.**

**Note:-**

**The candidates, who are participating for the first time in counselling shall be required to pay counselling fee of Rs.1200/- to be eligible for consideration for allotment of seat;**

## **F. THIRD ROUND OF COUNSELLING:**

The Board may, if it decides to do so conduct 3rd round of online

counselling/physical round of counselling in the same manner as prescribed for 2nd round of counselling provided that:-

The candidates who did not join the college on allotment of a seat after first round of counselling or on upgradation of seat/allotment of seat during second round shall not be eligible to participate in the third round of counselling. Those candidates, who were upgraded during 2<sup>nd</sup> round and joined the institute shall also not be eligible to participate in the third round of counselling.

#### **G. CONVERSION OF CATEGORY SEATS, IF ANY:**

In case any category seat remains vacant even after the upgradation/allotment round(s) as above, the same shall be de-reserved and filled up from the OM candidates through physical counselling. The revised seat matrix shall be notified accordingly and candidates willing and eligible to participate in the counselling shall be required to fill preference forms against the seats notified. The process shall, however, be the same as indicated hereinabove.

The seats in the "OM" which have remained vacant on conclusion of the earlier rounds shall also form part of the seat matrix and filled up during the process.

The seats becoming available due to upgradation of candidates, if any, against said seats shall be added to the seat matrix on the same day and filled up during the same process of counselling.

During this round of counselling candidates (those in the Entrance Merit List) including those who did not join after the first/Second/ Third round of allotment of seats shall also be eligible to participate. Those who were upgraded during 2<sup>nd</sup>/3<sup>rd</sup> round etc. shall, however, not be eligible notwithstanding that they have joined the college. Further, the seat shall be allotted only on the basis of merit cum preference. The candidates who do not join the college/institution after upgradation of seat during the upgradation round (2nd round or 3rd round) as the case may be shall, however, not be eligible to participate in this round of counselling.

#### **Note-1:**

Every effort will be made to ensure that the candidate with higher merit gets seat of his/ her preference if available. However, this is possible only when every candidate reports on time and follows instructions in letter and spirit, as otherwise due to the late reporting he/she could be deprived of the seat of his/her preference due to its allotment to the next candidate in merit, failing which the candidate who reports on time but is with lower merit may get seat more in demand than the candidate with higher merit who does not report on time for which BOPEE will not be in any way responsible.

#### **Note-2:**

The candidates who do not participate in the process of counselling by not filling up of the fresh preference forms and not being physically present during the physical round of counselling shall in no case be considered for allotment of seat and they shall have no claim, whatsoever, on any seat filled up by the Board from amongst the candidates who

participate in the process.

**Note-3:**

During the physical round of counselling, the candidate shall be required to be present physically and participate in the process. No proxy shall be permitted by the Board to represent the candidate unless under exceptional/extra ordinary circumstances like ill health for which the candidate shall have to authorize a representative and only amongst the members of the family viz father, mother, brother, sister, who shall be allowed to represent the candidate. The candidate shall have to produce a medical certificate from the authorized medical authority to specifically certify that candidate is suffering from a disease that disables, movement of the candidate. However, the participation of such representatives shall be at the risk and responsibility of the candidate himself/herself and Board shall not be responsible for any decision taken by such a representative on behalf of the candidate. The authority shall be accepted only as on the prescribed Proforma by the Board. The procedure for allotment of seats shall, however, remain the same.

**Note-4:**

It is quite possible that a candidate may not find seat of his/her choice available at the time of his /her turn in second/or third round of (physical) counselling, as the casemay be but a seat may become vacant subsequently. It is, therefore, in the interest of the candidates to remain available outside counselling room and keep watching monitor on which seat matrix is constantly updated. As and when a seat of the choice of such candidate becomes available he/ she should immediately report in the counselling hall and stake a claim. The interested candidates are also advised to visit website of BOPEE every evening or next day in the morning (during counselling days) where latest seat matrix is displayed. This holds true for already counselled students who may find seat of their choice available and may get that because of their higher merit for which they shall have to report early in the next morning at 10.00 am so that such candidates can be considered in order of merit before the counselling starts for fresh candidates.

**Note-5:**

The decision of the BOPEE concerning allotment of streams and institutions shall be final. Choices of streams / institutions once exercised shall not be allowed to be changed subsequently;

## **H. FINAL ROUND BY PERSONAL COUNSELLING (MOPPING UP ROUND):**

If otherwise required, the Competent Authority will issue Notification of final round by Personal Counseling on its website [www.jakbopee.org](http://www.jakbopee.org) and [www.jkbopee.gov.in](http://www.jkbopee.gov.in) indicating schedule of selection process for final round for allotment of seats remaining vacant after completion of earlier round(s) of allotment of seats by way of Preference Forms. This final round of allotment of seats shall be conducted by way of personal counseling instead of allotment on the basis of Preference Forms to ensure that all the vacant seats are filled up before 15th August, 2018 and there will be instant seat allocation. All the candidates who have qualified the CET 2018 as per the cut-off score

fixed by the Board but could not be allocated seats in earlier rounds and have submitted the documents in BOPEE office will be eligible to appear in the final round of counselling. Those who had not submitted the documents shall, in no case, be considered, notwithstanding their merit position.

On account of allotment of seats in this final round of admission, no fresh vacancies consequent upon allotments made in this round will be created. This is principally because this final round of allotment is meant to fill up (as far as possible all) available vacant seats without creating a new or fresh vacant seat on account of such allotment.

During this round also, eligible candidates will appear personally (Proxy will not be permitted), seeking allotment of seats of their choice. Personal counseling for such allotment will be held strictly in order of State Merit List amongst the available candidates. Each candidate will be offered all seats that have remained vacant and are available for allotment as per merit and preference only at time of his/her turn of counseling i.e. State Merit Position. The available seats shall be offered to the next candidate in merit.

Before personal counseling round all available vacant seats (due to non- allotment / non-joining / resigning etc.) will be notified on website. Eligible candidates interested to participate in this round should carefully go through vacant seats as notified on website and decide whether to participate in the Final Personal Counseling round. Such candidates, in their own interest are advised however, to be available in the BOPEE office during the mopping up round to stake a claim on the available seats. For the purpose of this Personal Counselling round, following seats shall be considered as available for admission which will be displayed on website before commencement of Personal Counseling round :-

- a) All seats that have remained vacant, if any, at the end of previous admission round(s) on account of non-allotment;
- b) All seats that were allotted in previous round(s) but were rendered vacant on account of candidate to whom such seats were allotted but did not join or resigned;
- c) All such seats that may become additionally available on any account whatsoever, including but not limited to, seats if any additionally recognized by competent authority made additionally available on account of any Order that may be passed by Courts etc.

All candidates to whom seats will be allotted in accordance with choice and available seats at his/her merit position at the time of personal counseling, will be required to join concerned college and complete all necessary formalities (by submitting all original documents and paying prescribe fees) for taking admission accordingly within prescribed time.

Allotment of seat once made in this personal counseling round shall not be changed. At the time of this personal counseling round, candidates must consider available seats thoroughly and opt for a seat which they must join once allotted.

It is made hereby clear that in case such a candidate does not join concerned College and/or fails to comply with necessary formalities, his/her admission shall be cancelled.

**Note-1:**

Board reserves the right to allow the candidates to participate in the conversion round/last round of counseling/mopping-up rounds, who were earlier not allowed to participate, in case the number of unfilled seats is large and it is found expedient to allow such candidates to participate in the counselling for purposes of filling-up of the seats.

**Note-2:**

Where the number of the candidates, who turn for counselling, is more than the seats available, then, if the Board decides to do so may prepare a waiting list. The waiting list so prepared will be operated after receiving a list of vacant seats from the respective Colleges;

**Note-3:**

The candidates may be kept in the waiting list and the number of the candidates to be kept in the waiting list will be as decided by the BOPEE;

**Note-4:**

The number of the candidates to be called for counselling will be decided by the BOPEE keeping in view the response of the candidates to a particular course;

**Note-5:**

Subject to any change by the Regulatory Authorities or directions of Hon'ble Supreme court of India, the admission to B.E./B.Tech. Engineering courses in Engineering colleges will close on August 15, 2018. Thereafter no admission will be made to any of these courses even if any seat remains vacant.

## **15.PROHIBITION/BAN ONRAGGING:**

Ragging is totally banned/ prohibited in Medical/ Dental College/ Institutions and any one found guilty of ragging and / or abetting it, is liable to be punished. Accordingly, candidates have to sign an undertaking at time of counselling that they will not resort to ragging. Selected candidates have to follow strictly Medical Council of India (Prevention and Prohibition of Ragging in Medical Colleges/Institutions) Regulations, 2009 and or instructions on subject.

❖ **Ragging includes following:**

Any conduct where by words spoken or written or by an act which has effect of harassing, teasing, treating or handling with rudeness any other student, indulging in rowdy or undisciplined activities which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in a fresher or a junior student or asking students to do any act or perform something which such student will not do in ordinary course and which has effect of causing or generating a sense of shame or embarrassment so as to adversely affect physique or psyche of a fresher or a junior student.

❖ **PUNISHABLE INGREDIENTS OF RAGGING:**

- Abetment to ragging;
- Criminal conspiracy to rag;
- Unlawful assembly and rioting while ragging;
- Public nuisance created during ragging;
- Violation of decency and morals through ragging;
- Injury to body, causing hurt or grievous hurt;
- Wrongful restraint;
- Wrongful confinement;
- Use of criminal force;
- Assault as well as sexual offences or even unnatural offences;
- Extortion;
- Criminal trespass;
- Offences against property;
- Criminal intimidation;
- Attempts to commit any or all of above mentioned offences against victim(s);
- Physical or psychological humiliation.

***The guidelines to curb the menace of ragging in professional Colleges issued by the Hon'ble Supreme Court of India.***

- An annual undertaking signed by each student, whether fresher or senior and his/her parent(s) jointly stating that each of them has read the relevant instructions/regulations against ragging, as well as punishments, and that if the ward is found guilty, he/she shall be proceeded against and shall be prosecuted.
- Such an undertaking shall be furnished in English as well as vernacular language (mother tongue of the parent) at the beginning of each academic year by every student.
- An undertaking to the similar effect should be obtained every year from each student admitted to the hostel.
- The compliance to the above effect shall be ensured by each of the affiliating university to which the concerned institution is affiliated and would be verified by them annually.
- In order to ensure "the ragging free environment" in the campus, each institution shall compulsorily in their prospectus and other admission related documents, shall depict the earlier directions of the Hon'ble Apex Court and/or of the Central or State Governments as applicable, so that candidates and their parents are sensitised for the same.

**16. INSTITUTIONS WITH COURSES AND TENTATIVE INTAKE CAPACITY:**

Brief details of the courses offered and tentative intake capacity in various Polytechnic Colleges for the Academic year 2018-19 are as follows:

College / Stream-wise sanctioned No. of seats are shown against each College herein after. The Seat Matrix with actual seat details for all the Colleges will be notified at the time of counselling.

## GOVERNMENT AND PRIVATE ENGINEERING COLLEGES OF THE STATE

### 1. GOVT. COLLEGE OF ENGINEERING & TECHNOLOGY, JAMMU

Phone: 0191-2623087

Fax: 0191-2560359

Email: [gcet\\_jammu1994@rediffmail.com](mailto:gcet_jammu1994@rediffmail.com)

Mobile:

9419724322/9419213441

Courses	Intake Capacity*	5% seats for TFW candidates	Seats to be filled by BOPEE
Civil	60	3	63
E & C	60	3	63
Computer	60	3	63
Electrical	60	3	63
Mechanical	60	3	63
<b>Total</b>	<b>300</b>	<b>15</b>	<b>315</b>

\*Subject to Approval of the regulatory bodies, AICTE, state Government and University of Jammu.

### 2. MODEL INSTITUTE OF ENGINEERING & TECHNOLOGY (MIET), JAMMU

Phone: 0191-2623116, 2623180

Fax: 0191-2623181

Email: [principal@mietjammu.in](mailto:principal@mietjammu.in)

Mobile: 9797522100

Courses	Intake Capacity*	Seats to be filled by BOPEE		Management Quota Seats
		5% seats for TFW candidates	Open Merit Seats	
CIVIL	60	3	57	3
E & C	120	6	114	6
Computer	120	6	114	6
Electrical	60	3	57	3
I.T.	60	3	57	3
<b>Total</b>	<b>420</b>	<b>21</b>	<b>399</b>	<b>21</b>

\*Subject Approval from J&K Government, Jammu University and AICTE.

### 3. MBS COLLEGE OF ENGINEERING & TECHNOLOGY, JAMMU

Phone: 0191-2262896/2262897

Fax: 0191-2262896

Email: [principalmbcet@rediffmail.com](mailto:principalmbcet@rediffmail.com)

Mobile; 9419288486/9469210790

Courses	Intake Capacity*	Seats to be filled by BOPEE		Minority Quota Seats
		5% seats for TFW** Candidates	Open Merit Seats	
E & C	60	1.5	30	30
Mechanical	60	1.5	30	30
Computer	60	1.5	30	30
Electrical	60	1.5	30	30
I.T.	60	1.5	30	30
<b>Total</b>	<b>300</b>	<b>7.5</b>	<b>150</b>	<b>150</b>

\*Subject to Approval of the regulatory bodies, AICTE, state Government and University of Jammu.



#### 4. SSM COLLEGE OF ENGINEERING, PATTAN, KASHMIR

Phone: 0194-2496260/2137282

Fax: 0194-2496135

Email: [ssmkashmir@gmail.com](mailto:ssmkashmir@gmail.com)

Mobile:

9419009881/9419011492

Courses	Intake Capacity*	Seats to be filled by BOPEE		Management Quota Seats
		5% Seats for TFW** Candidates	Open Merit Seats	
Civil	180	9	171	9
Mechanical	120	6	114	6
E & C	120	6	114	6
Computer	120	6	114	6
Electrical	60	3	57	3
Total	600	30	570	30

\*Subject Approval of the regulatory bodies, AICTE, State Government and University of Kashmir.

#### 5. YOGANANDA COLLEGE OF ENGINEERING AND TECHNOLOGY, JAMMU\*\*

Phone: 0191-2605601/2605602/2605603

Fax: 0191-2605604

Email: [ycetjamwalgroup2013@gmail.com](mailto:ycetjamwalgroup2013@gmail.com)

Mobile: 9906002410

Courses	Intake Capacity	Seats to be filled by BOPEE		Management Quota Seats
		5% Seats for TFW* Candidates	Open Merit Seats	
Civil	120	6	114	6
Mechanical	120	6	114	6
IT	60	3	57	3
Computer	60	3	57	3
Electrical	60	3	57	3
Total	420	21	399	21

\*Subject to approval of the regulatory bodies. AICTE, State Government and University of Jammu

#### 6. BHARGAVA COLLEGE OF ENGINEERING & TECHNOLOGY SUPWAL (SAMBA)

Mobile No: 01923-292405/292406

Fax: 01923-246169

Email: [principal@bcetsamba.in/office@bcetsamba.in](mailto:principal@bcetsamba.in/office@bcetsamba.in)

Mobile:

9419227999/9419152952

Courses	Intake Capacity	Seats to be filled by BOPEE		Management Quota Seats
		5% Seats for TFW* Candidates	Open Merit Seats	
Civil Engg.	60	3	57	3

Mechanical Engg.	60	3	57	3
Computer Engg.	60	3	57	3
Electrical Engg.	60	3	57	3
E&C Engg.	60	3	57	3
Total	300	15	285	15

\*Subject to approval of the regulatory bodies. AICTE, State Government and University of Jammu

**Note 1:- TFW means Tuition Fee Waiver. A candidate whose father's annual income from all sources is less than 4.5lac is entitled to get this certificate.**

**Note 2:- The above intake of seats is tentative and subject to change, if any, as may be notified by the Board. Any change by way of addition of Engineering Colleges and consequent increase in the number of seats/courses shall also be notified.**

## 17. LIST OF ANNEXURES:

### ANNEXURE-I

#### COMPETENT AUTHORITIES FOR ISSUANCE OF RESERVED CATEGORY CERTIFICATES

S. No.	Categories	Competent Authorities to issue certificates
1	Scheduled Caste (SC)	Revenue Officer not below the rank of Tehsildar
2	<b>Scheduled Tribes</b>	
	i. Scheduled Tribe, Gujjar & Bakerwal (STGB)	
	ii. Scheduled Tribe, Leh District (STL)	
	iii. Scheduled Tribe, Kargil District (STK)	
	iv. Other Scheduled Tribes (STO)	
3	<b>Socially and Educationally Backward Classes</b>	
	i. Weak and Under Privileged Classes, Social Castes (OSC)	
	ii. Residents of Backward Area (RBA)	
	iii. Residents of Area Adjoining Actual Line of Control (ALC)	
4	Children of Defense Personnel Ex-servicemen. (CDP) (Navy, Army and Air force only)	Commanding Officer of the concerned Unit ZilaSainik Board
5	Candidates possessing outstanding proficiency in Sports (SP)	Secretary, J&K Sports Council (to be issued before the Date mentioned by BOPEE)
6	Children of Permanent Residents of Paramilitary Forces and State Police Personnel serving in the State (JKPM)	DIG Concerned
7	Tuition Fee Waiver Certificate	Revenue Officer not below the rank of Tehsildar



### ANNEXURE-III

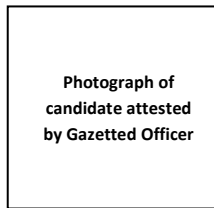
#### UNDERTAKING AND AUTHORITY LETTER FOR COUNSELLING

I, \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ age \_\_\_\_\_ years \_\_\_\_\_ months, bearing Roll No. \_\_\_\_\_ placed at Rank No. \_\_\_\_\_ in the Entrance Examination for admission to Three Year Diploma in Polytechnic, 2018 conducted by BOPEE do hereby solemnly affirm and undertake that the decision of my authorized representative, Mr./Mrs./Miss \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ age \_\_\_\_\_ years, regarding selection / rejection of seat on the date of personal appearance shall be binding on me and I shall not have any claim whatsoever, other than the decision taken by my authorized representative on my behalf

on \_\_\_\_\_  
Signature of candidate \_\_\_\_\_  
Name \_\_\_\_\_  
Roll No. \_\_\_\_\_  
Address \_\_\_\_\_

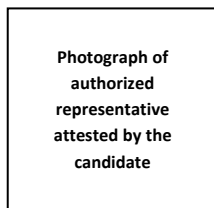
#### AUTHORITY LETTER

I, \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ bearing Roll No. \_\_\_\_\_ for Entrance Examination for admission to Three Year Diploma in Polytechnic, 2018 do hereby authorise Mr./Mrs./Miss \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ R/o \_\_\_\_\_ to represent me on \_\_\_\_\_ (Date) before the committee for allotment of a seat in Three Year Diploma in Polytechnic, 2016. The signatures and the photograph of above named Mr./Miss/Mrs. \_\_\_\_\_ are attested below.



Signature of candidate \_\_\_\_\_  
Name \_\_\_\_\_  
Roll No. \_\_\_\_\_  
Address \_\_\_\_\_

Photograph to be Attested by Gazette officer  
Address \_\_\_\_\_



Signature of candidate \_\_\_\_\_  
Name \_\_\_\_\_  
Roll No. \_\_\_\_\_  
Address \_\_\_\_\_

Photograph to be attested by the Candidate



## ANNEXURE-IV

### SAMPLE OF COUNSELLING FORM TO BE USED IN PHYSICAL ROUND -2018

Counselling Date: 4<sup>th</sup> July 2014

S. No. «SNO»

**THE J&K BOARD OF PROFESSIONAL ENTRANCE EXAMINATIONS**  
**DISCIPLINE/INSTITUTION PREFERENCE FORMAT FOR DIPLOMA POLYTECHNIC COUNSELLING-2014**  
*Notification No.: 00 – BOPEE of 2014 Dated: 00-00-2014*

Roll No.	402936	Name	SYED PEERZADA OWAIS JEELANI		
Category	OM	Marks	85	Rank	173
Telephone/Cell No.					

**OPTIONS/PREFERENCE FORMAT FOR ALLOTMENT**

S. No.	Name of the Discipline & Institute where you desire allotment (In order of preference)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
00	Civil Engineering in KGP Srinagar <span style="float: right;">(Sample Preference)</span>

Signature of the Candidate

I accept discipline in Institution \_\_\_\_\_ indicated by me at the preference No \_\_\_\_\_ in my option form. The discipline and institution preference has been exercised by me during the counseling on the basis of my rank secured by me in Entrance Test-2012 and availability of seat at my turn.

Signature of the Candidate

Admission approved in Discipline/institution \_\_\_\_\_

**Note:** This is indicative and subject to such modification as may be found necessary by the Board for purpose of transparency, like the time of participation/allotment of seat etc.

Approved  
Chairman, BOPEE

## ANNEXURE-V

### SAMPLE REPRESENTATION REGARDING ANSWER KEY

Name: **T. A. Khan**

Paper: **Diploma Polytechnic**

Series: **A**

Roll No: **4BOP9999**

Year: **2018**

S. No	QN	Answer Option in the Question Paper	Answer Suggested by the Candidate	Title of the Book	Author of the Book	Edition	Volume	Page No.	Additional Comments (if Required)
1	5	A	C	Conceptual Physics	Paul G. Hewitt	4TH ED.	II	28	QUESTION IS INCORRECTLY FRAMED
2	6	B	D	Do	Do	do	do	do	QUESTION IS INCORRECTLY FRAMED
3									
4									
5									
6									

Contact No:

Alternative Contact No

**Name and Signature of the Candidate**

**ANNEXURE VI**

**OFFICE OF THE COMMANDING OFFICER OF THE UNIT**

**CERTIFICATE OF BEING CHILD OF DEFENCE PERSONNEL (in-Service)**

This is to certify that Mr./ Miss/Mrs. -----is a son/ daughter of-----  
----- who is serving or has served as a member of Army/  
Navy or Air Force.

Competent Authority

With Name and Seal



**ANNEXURE-VII**

**OFFICE OF THE ZILA SAINIK BOARD**



**Ex-service Men**

**CERTIFICATE OF BEING A MEMBER OF DEFENCE PERSONNEL**

**SRO-272 DATED 3-7-82/SRO-314 DATED 9-5-85 AS AMENDED VIDE SRO-294 DATED  
21-10-05, PARA 2(VIII)**

This is to certify that Mr./Ms. \_\_\_\_\_ Son/Daughter of  
No. \_\_\_\_\_ Rank \_\_\_\_\_ Name \_\_\_\_\_ R/o \_\_\_\_\_  
\_PO \_\_\_\_\_ Tehsil \_\_\_\_\_ District \_\_\_\_\_, who is a  
member of Defence Forces. His/Her ward is beneficiary under the term of SRO-272 dated 3-7-82/SRO-  
314 dated: 9-5-85 as amended vide SRO-294 dated 21-10-05 being the son/daughter of the defence  
forces personnel.

It is certified that said Mr./Ms. \_\_\_\_\_ Son/Daughter  
of \_\_\_\_\_ submitted his/her application for grant of this certificate  
on \_\_\_\_\_ and the certificate has been issued to him/her under my seal and signature  
today the \_\_\_\_\_ after the suitable enquiry has been made in this office file  
No. \_\_\_\_\_ dated \_\_\_\_\_.

**Station:**

**Dated:**

**Zila Sainik Welfare Officer.**

**ANEEXURE–VIII**

**OFFICE OF THE DEPUTY INSPECTOR GENERAL OF POLICE**

**CERTIFICATE OF BEING A CHILD OF PARAMILITARY FORCE/POLICE PERSONNEL(In-service)**

This is to certify that Mr./ Miss/Mrs. -----is a son/ daughter of-----who is a J&K State Subject and is serving as -----in Para-military Force/Police Force in the state, Mr./Mrs.-----is not rendering engineering service or other service of civil nature which would disentitle his/her son/daughter from claiming the benefit of being child of Para-military Force/Police Personnel.

It is also certified that son/Daughter of Mr.----- is entitled to get Certificate of being a child of Paramilitary Force/Police Personnel as provided in Rule 2 (ix) of the Jammu and Kashmir Reservation Rules, 2005.

**Name, Signature and Office Stamp**

**DIG Concerned**

Space for  
photograph of  
the candidate to  
be duly attested

**ANNEXURE-IX**

**OFFICE OF THE DEPUTY INSPECTOR GENERAL OF POLICE**

**CERTIFICATE OF BEING A CHILD OF PARAMILITARY FORCE/POLICE PERSONNEL (Retired)**

This is to certify that Mr./ Miss/Mrs. -----is a son/ daughter of-----who is a J&K State Subject and has died while serving or has served in Para-military Force/Police Force in the state and had been honorably discharged or retired. Mr./Mrs.-----was not rendering engineering service or other service of civil nature which would disentitle his/her son/daughter from claiming the benefit of being child of Para-military Force/Police Personnel.

It is also certified that son/Daughter of Mr.----- is entitled to get Certificate of being a child of Paramilitary Force/Police Personnel as provided in Rule 2 (ix) of the Jammu and Kashmir Reservation Rules, 2005.

**Name, Signature and Office Stamp**

**DIG Concerned**

Space for  
photograph of  
the candidate to  
be duly attested

**ANNEXURE – X**

**Office of the Tehsildar \_\_\_\_\_**

**Income Certificate**

It is certified that the Annual income from all sources of

Mr./Mrs. \_\_\_\_\_ Father of \_\_\_\_\_

R/o: \_\_\_\_\_ Tehsil: \_\_\_\_\_ District: \_\_\_\_\_

\_\_\_\_\_ based on the inquiry conducted by this office does not exceed to

\_\_\_\_\_.

No. \_\_\_\_\_

Date:- \_\_\_\_\_

***Tehsildar***

**THE JAMMU AND KASHMIR  
BOARD OF PROFESSIONAL ENTRANCE EXAMINATIONS**



<b>JAMMU</b>	<ul style="list-style-type: none"><li>•4th Floor, South Block, Bahu Plaza, Jammu - 180012</li><li>•+91 191 - 2470102, +91 191 - 2479371</li></ul>
<b>SRINAGAR</b>	<ul style="list-style-type: none"><li>•Baghat-i-Barzulla, Opposite J&amp;K Bank, Srinagar - 190005</li><li>•+91 194 - 2433590, +91 194 2437647</li></ul>
<b>Website</b>	<ul style="list-style-type: none"><li>•<a href="http://www.jakbopee.org">http://www.jakbopee.org</a></li><li>•<a href="http://www.jkbopee.gov.in">http://www.jkbopee.gov.in</a></li></ul>
<b>E - MAIL</b>	<ul style="list-style-type: none"><li>•<a href="mailto:helpdeskjakbopee@gmail.com">helpdeskjakbopee@gmail.com</a></li><li>•<a href="mailto:coejakbopeeblg59@gmail.com">coejakbopeeblg59@gmail.com</a></li></ul>
<b>Help Desk</b>	<ul style="list-style-type: none"><li>•9419434133, 9419403272, 9906509387</li><li>•9469012295, 9697383737, 9419150693</li></ul>