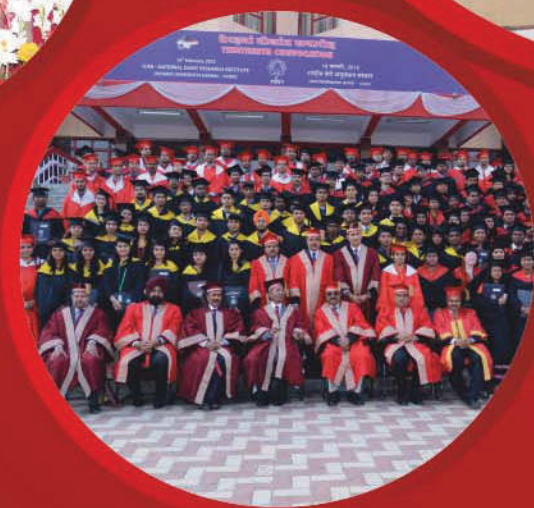


सूचना विवरणिका Information Bulletin

2016-17

with Application Form
For B.Tech (Dairy Technology)



भा.कृ.अ.प.- राष्ट्रीय डेरी अनुसंधान संस्थान

(मान्य विश्वविद्यालय) करनाल 132001 भारत

ICAR-NATIONAL DAIRY RESEARCH INSTITUTE

(Deemed University) KARNAL-132001 (Haryana) India



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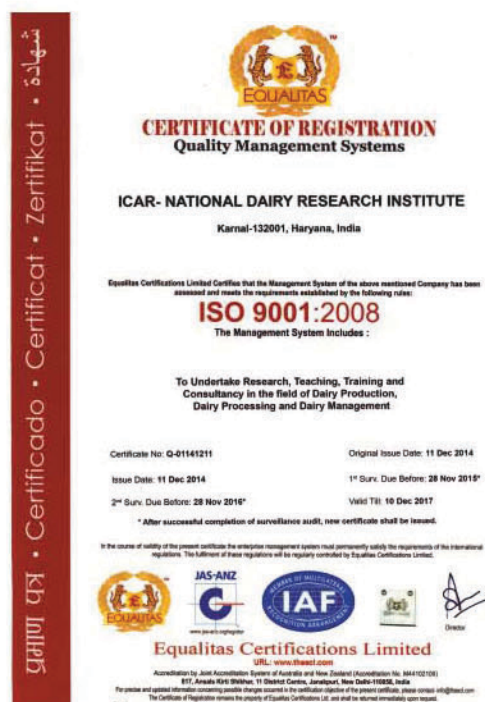
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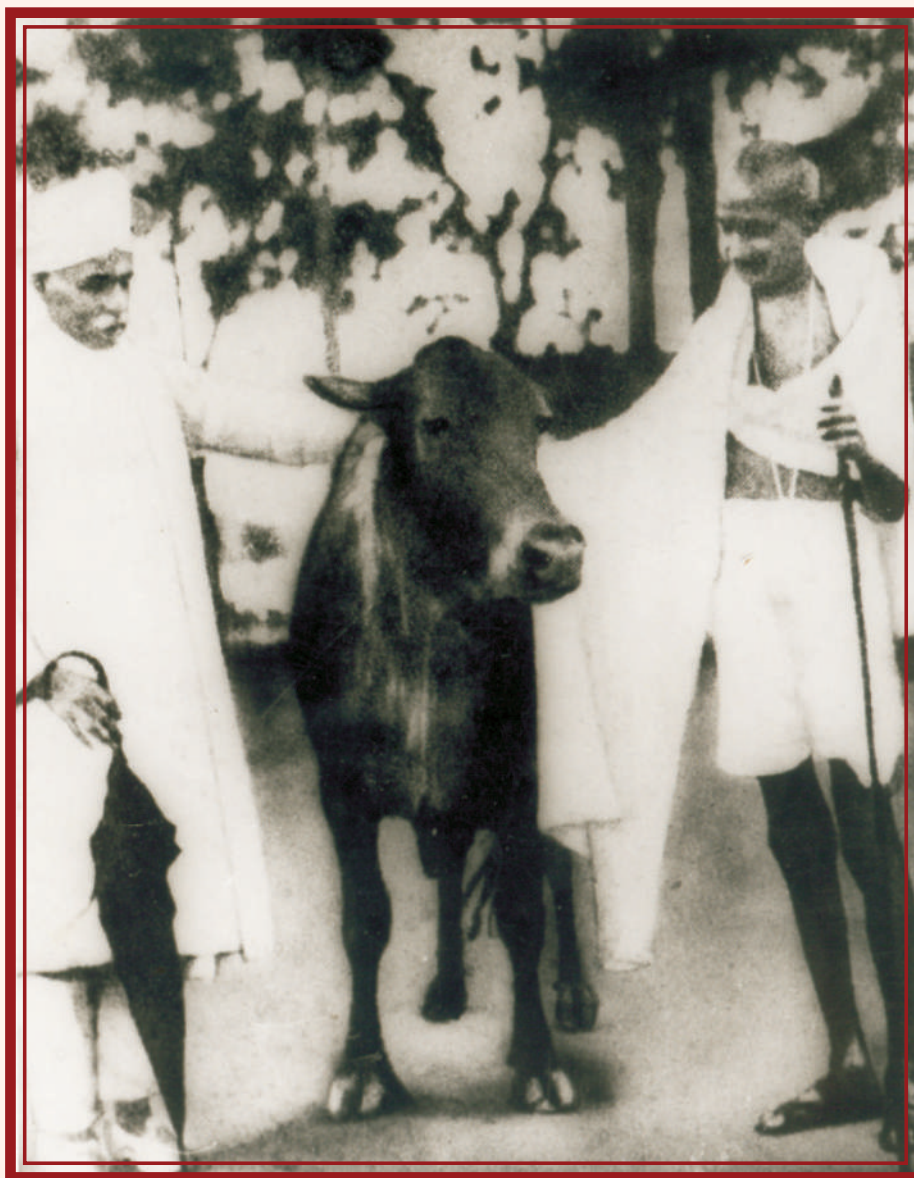
ISO 9001 : 2008

National Dairy Research Institute, Karnal enjoys the status of Deemed University vide Gazette of India Part-1 Notification No. F.9-15/85-U.E. Dated 28th March, 1989 issued by the Govt. of India, Ministry of Human Resource Development (Deptt. of Education)



INFORMATION BULLETIN

2016-17



ICAR-National Dairy Research Institute

(Deemed University)

(ICAR), Karnal - 132 001, INDIA

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1.0**INTRODUCTION**

- 1.1 National Dairy Research Institute, Deemed University (here-in-after referred to as the Institute), serves as the prime centre for Research, Extension and Manpower Development Programmes of the country in the field of Dairying. The Institute has developed from the erstwhile Imperial Institute of Animal Husbandry and Dairying established at Bangalore in 1923. The main campus of NDRI is now located at Karnal in Haryana State. It has two regional stations: Southern Regional Station at Bangalore and Eastern Regional Station located at Kalyani (West Bengal).
- 1.2.4 Study and Survey of Economics, Management and Extension: Economics of milk production and processing under farm and field conditions; dissemination of new technologies to farms and industry.
- 1.2.5 Training and Demonstration: Organizing short period training programmes and demonstration of package of practices for field applications.
- 1.2.6 Collaboration: Collaborating with national and international research and training institutions in dairying and allied fields for

1.2 Objectives of the Institute*Administrative Block NDRI, Karnal*

- 1.2.1 Dairy Education: Organizing and conducting programmes both at the undergraduate and post-graduate levels in various branches of dairy science to meet manpower needs of the country.
- 1.2.2 Study of Dairy Production: Research on livestock nutrition, growth, reproduction, physiology, genetics/ breeding and management to produce milk efficiently and economically.
- 1.2.3 Study of Milk and its Processing: Chemistry, microbiology, quality control and
- exchange of information and advancing new knowledge, both in basic and applied fields of dairy science.
- 1.3 Location and climate**
- 1.3.1 National Dairy Research Institute is located on the northern outskirts of Karnal city in Haryana, on the National Highway No. 1, about 125 kms North of Delhi. It is well connected by road and rail being on the main trunk route connecting Delhi with Amritsar and Chandigarh.

- 1.3.2 The elevation of Karnal is 250 meters, above mean sea level, latitude 29.43 N and longitude 77.2 E. Minimum temperature falls to near freezing point in winter and maximum goes upto 45°C in summer. The annual rainfall is about 70 cms.

1.4 Organization

- 1.4.1 The Director is the administrative Head of the Institute and its regional stations. He is assisted by three Joint Directors in administration, coordination of academic, research and extension activities of various divisions and regional stations.
- 1.4.2 Various research, academic and consultancy activities of the Institute are organized in the areas of dairy production, processing and management on the subject-matter basis through different Division/ Sections, namely, Dairy Cattle Breeding, Livestock Production and Management, Dairy Cattle Nutrition, Dairy Cattle Physiology, Dairy Chemistry, Dairy Engineering, Dairy Microbiology, Dairy Technology, Animal Biochemistry, Forage Research & Management, Dairy Economics, Statistics & Management, Dairy Extension and Animal Biotechnology.

1.5 Facilities in Education

There are modern facilities for delivery of lectures as the classrooms are provided with internet & multimedia gadgets. Each Division has well equipped UG & PG Laboratories for conduct of practical classes. For Post-graduate research work, well equipped specialized laboratories are available in different divisions. Most of faculty have international exposure and possess degrees earned from reputed Indian and foreign universities. Additionally subject-matter specialists from the different countries of the world come to the Institute as consultants on teaching/ research/ assignments. The teaching curricula are

periodically updated keeping in view the recent scientific developments and to fulfil the needs of the fast developing dairy industry. Centres of excellence in milk production, milk processing and biotechnology have been established at the Institute under the financial assistance from UNDP/ICAR/DBT. The Institute has seven hostels with modern facilities, of which two are exclusively for girl students. Married students are also provided with separate hostel facilities. An International Hostel is also available for the students coming from abroad.

1.6 Facilities in Dairy Production

The Institute maintains a Livestock herd having about 1700 animals consisting of different breeds of cattle (Karan Swiss, Karan Fries, Tharparkar, Sahiwal), Murrah buffaloes and goats. The animals are being maintained and fed as per standard scientific practices. Several programmes are being carried out for attaining higher productivity per animal. Modern State of Art Milking Parlours – Flat Barn and Vario-Tendom systems have been commissioned for efficient and clean milk production. The average production of milk per day in the Cattle Yard varies between 3500 to 4500 liters during different months. The animals are managed under loose housing system. To manage the elite cows and buffaloes, the State of Art shelter system with facilities of individual animal feeding and data recording are available. A fodder farm of approximately 400 hectares supplies fresh green fodders like Maize, Cowpea, Berseem and Oats. A well equipped workshop is available for maintaining the farm equipment and machinery. Model dairy units for demonstration of package of practices with high producing dairy cows and buffaloes are also maintained for the benefit of farmers and trainees.



A view of Animal Biotechnology Centre

1.7 Facilities in Milk Processing

A well equipped dairy plant for handling 10,000 litres milk per day was installed in 1962 and renovated in the year 1984. Basic equipments are available for processing different type of milk, fat rich products, indigenous milk products, condensed and dried milk products, various types of cheese and fermented milk products. Facilities are available for the product development and to give practical training to the students for familiarizing them with the operational aspects of a commercial dairy. During the year 1989 a Revolving Fund Scheme was introduced in Experimental Dairy under AP cess Fund Project by the Ministry of Agriculture. In the year 2004, Experimental

Dairy has been granted International Standards Certification for its quality and Food Safety Policy i.e. ISO 90012000 HACCP-15000. In March 2010, Experimental Dairy has been certified for ISO 9001-2008 & HACCP-15000.

1.8 Model Dairy Plant

With the objective of providing facilities for imparting in-plant training to the students of NDRI Deemed University, a commercial dairy has been established in the campus of NDRI under the auspices of Operation Flood Programme. The dairy plant has state of the Art Facilities for various processes. The plant has been designed to handle 60,000 liters of milk per day with the capital



A view of Model Dairy Plant

investment of Rs. 11 crore. In the first phase of the project, the dairy plant is equipped with facilities for processing and packing of market milk, ice cream, cheese, paneer and ghee. Students of NDRI are trained in the various operations in the plant so that they get necessary exposure of managing the manufacturing operations under commercial environment. This gives them necessary skills and self confidence to manage middle level managerial position in the Dairy Industry.

1.9 Business Planning and Development (BPD)

The BPD unit at ICAR-National Dairy Research Institute (NDRI), Karnal is established with the objective to promote dairy and food agribusiness entrepreneurs through enhancing their technical and business skills, commercialization of dairy and food technologies; provide services on marketing assistance, quality evaluation, research and development for business development and assist small

through the consultancy services. The BPD extends help for strengthening the dairy industry in the country by providing R&D support towards new product/process development, equipment development, problem solving research and also undertaking sponsored research programs. The consultancy services are also provided for the preparation of techno - economic feasibility reports for new projects, vetting of project proposals received through financial institutions, testing of dairy products for export/import etc. Specialized training programs are also conducted at this Institute from time to time for imparting training to the students/ entrepreneurs. The revenue earned through the consultancy services is utilized for strengthening the R&D infrastructure of the institute.

1.10 National Library in Dairying

The Institute Library has an impressive collection of literature on Dairy Science and related subjects. More than 100 periodicals



A view of National Library in Dairying

entrepreneurs for setting up their business ventures. The reservoir of technology developed on the basis of R&D work done at the Institute is transferred for the infusion of science and technology in the area of Dairy Production, Dairy Processing and Dairy Management on professional basis

are subscribed to keep track of the current scientific/technical developments. There are 91,766 volumes which includes 51,994 books, 33,358 bound journals, 4,646 theses, 268 microfiches and 1500 CDs. Library has an excellent computer section having fifty workstations for students and staff of the

institute. Students use these to get current information in the advanced research areas and for communication.

The Library provides Internet, Email, Documentation, Reference, Current Awareness Services, CD- ROM Literature scanning through CD-ROM of CAB Abstract, Food Science Technology Abstract, AGRIS, Derwent Biotechnology Abstract, Indian Standards and ISO Standards on food products including milk and dairy products on CD-ROM. The Library also provides Photocopying, Document Scanning, Printing and Computerised Issue-Return and reservation facilities. The Library, NDRI is an active partner of Agricat (a sub-portal under WorldCat). Presently ~50,250 catalogue records of Library, NDRI available on Agricat/WorldCat. Library digitized ~2000 contents/records of institute outputs, which includes valuable books, publications, reports, conference proceedings and reprints etc. available on KrishiKosh-Institutional Repository of Indian National Agricultural Research System. In addition of above complete online library catalogue is also available on URL: library.ndri.res.in by using Koha-Library Management System.

Computer Centre is a central facility to provide computational support and training to the scientists, students, research scholars and the administration. There is a well established Computer Laboratory equipped with latest computer systems together with laser printers. The computer systems support FORTRAN, C, C++ and Visual Programming languages. A large number of software packages such as LIMDEP, LSML-76, MATLAB, MS-Office 2003/2007, MySQL Server 2008, SAS 9.3, SPSS 18, SYSTAT, TORA, etc., are available in different environments, i.e., LINUX, Windows/Windows Server (98, 2000, 2008, XP, NT). The Agriculture Knowledge Management Unit (AKMU) cell established with the help of ICAR is fully functional with the Internet and e-mail connectivity through National Knowledge Network (NKN) node (1 Gbps) provided by the National Informatics Centre (NIC) Govt. of India and through leased line provided by ERNET India Ltd. The Institute has a Local Area Network (LAN) connecting all the divisions/ sections through optical fiber/ UTP cable to cover the main buildings and through ADSL switches for distantly located buildings, providing connectivity to all the Scientists, Technical/Administrative Officers/ Students. Student hostels are also connected to Institute LAN through Wi-Fi network to enable the students to access these Internet

1.11 Computer Facilities



Students working in Computer Lab

and library resources round the clock. AKMU cell is also undertaking the implementation of ICAR sponsored programs like Personnel Management Information System (PERMISNet), National Information System for Agriculture Education Network (NISAGENet) and Half yearly Progress Monitoring System (HYPM). Also, statistical Cell is functioning under Computer Centre, which disseminates university related information to various state and national-level government agencies. Computer Centre continued to prepare daily fortnightly and monthly MIS reports relating to milk production, supply of feeds and fodders, herd performance, animal management system, etc. for decision support to the appropriate authorities using in-house developed software. The Computer Centre is also extending its technical and ICT infrastructure support for smooth functioning of this ERP system. An online examination centre is also operational for conducting various exams of ICAR-ASRB such as Net/ARS-Preliminary Examinations.

1.12 Students Counselling and Placement Cell

The Institute has a Student's Counselling and Placement Cell, of which a senior

faculty member acts as Chairman. The main objective of the Cell is to collect and disseminate the information related to the job opportunities in private and government sectors and to invite various organizations for campus interviews. Students' counselling is also done at times on the advancement of their career in respective subject matter/discipline areas. The university has a very impressive track record of placement in highly competitive professions both within and outside the country.

1.13 Society for Innovation & Entrepreneurship in Dairying-Technology Business Incubator (SINED-TBI)

Technology Business Incubator has been established at NDRI, Karnal with the broad objective of promoting knowledge - based and innovation - driven dairy enterprises in the country. NDRI TBI has state of the art start - up friendly infrastructure, with common resource sharing arrangement to support budding entrepreneurs among students and technocrats from all over the country. The facility already available including pilot scale plant at Experimental dairy as well as Model Dairy Plant. The Centre



A view of Technology Business Incubator Building

has full time management team that has extensive experience in entrepreneurship, product development, and marketing, securing venture capital funding and organizational development.

1.14 Experimental Dairy

A well equipped dairy plant for handling 10,000 litres of milk per day was installed in 1962 and renovated in the year 1984. Basic equipments are available for processing different type of milk, fat rich product, indigenous milk products, condensed and dried milk products. Facilities are available

for the product development and to give practical training to the students for familiarizing them with the operational aspects of a commercial dairy. During the year 1989 revolving fund scheme was introduced in Experimental Dairy under AP cess Fund Project by the ministry of Agriculture. In the year 2004, Experimental Dairy has been granted international standards Certification for its quality and Food Safety Policy i.e. ISO 9001 2000 HACCP-15000. In March 2010, Experimental Dairy has been certified for ISO 9001-2008 & HACCP-15000.

2.0 REGIONAL STATIONS

2.1 Southern Regional Station

2.1.1 Southern Campus of NDRI is located in Aduvudi, Hosur Road, National Highway No.7 about 7 Kms far from Bangalore City and Cantonment Railway Stations. Bangalore is well known for its salubrious climate with the maximum temperature at around 37°C and minimum temperature at about 8°C. The average rainfall of the city is about 100 cm per year.

2.1.2 The Campus is engaged in research, teaching, training, transfer of technology and consultancy activities through following sections: Dairy Chemistry & Microbiology, Dairy Technology, Dairy Engineering, Dairy Production, Education & Training, Economics and Extension.

2.1.3 The Campus has the necessary infrastructure needed for milk production, processing of milk; transfer of technology and to impart education and training. The fodder farm of 21 hectares raises high yielding fodder crops round the year for a herd of about 195 animals. The experimental dairy plant has the capacity to process 1000 lit. of milk/day. A variety of dairy products are manufactured and sold through the milk

parlour. The library holds 12590 books, 10,857 bound volumes, 2464 thesis and 1,259 reprints and subscribes 75 Indian journals relevant to various disciplines of dairy science. The Campus has good hostel and guest house facilities for the students and visitors. The staff dispensary meets the medical needs of the staff and students.

2.2 Eastern Regional Station

2.2.1 The Eastern Regional Station (ERS) of National Dairy Research Institute (NDRI), established in 1964, is located at Kalyani in the district of Nadia in West Bengal. It serves as a vital link between the main Institute and the distant Eastern and North Eastern parts of the country. Kalyani is well linked by rail and road with Kolkata and is situated at a distance of nearly 50 km from the heart of the city (Kolkata). The nearest railway station is Kalyani of the Eastern Railway, located at a distance of 2 km from the institute campus.

ERS is established on a plot of 100 acres of land with good infrastructure in terms of Laboratories, Cattle Farm, Fodder Farm, Library, Hostel, Guest House etc.



A view of ERS Building, Kalyani

2.2.2 There are six sections which are engaged in research work on various aspects of Dairy Cattle Production viz. Animal Nutrition, Animal Breeding, Animal Biotechnology, Livestock Production Management, Dairy Extension and Animal Physiology & Reproduction. Since 2014-15 Academic Session, three years Diploma in Animal Husbandry and Dairying (DAHD) course has been introduced. Beside this, dissertation work of postgraduate and Ph.D students in different discipline are also being offered at this campus.

2.2.3 The Cattle Yard maintains around 150 crossbred cattle with machine milking facility. The station maintains a fodder field of 27 hectares where round the year fodders are cultivated. The Library, though small, contains 1500 books, 3225 volumes of bound journals and other periodicals, 23 regular journals in the field of Dairying. Besides, Annual Reports

of different Institutes and proceedings of various workshops and seminars are also available for reference. It serves as a referral library for the research scholars of various Universities, Research Institutes and Dairy Organizations in the region. The computer center has adequate facilities for the maintenance of data-bases. The VSAT connectivity offers instant internet access.

2.2.4 The round the year extension services are conducted by the ERS which includes Training programmes, Exhibitions, Health & fertility camps, Off-campus training camps etc. Training Programmes on "Scientific Dairy Farming" and "Artificial insemination and Veterinary first aid " for educated unemployed rural youth are organized at regular intervals. Field visits, capsule courses and orientation programmes are also organized for the farmers of Dairy Cooperative Societies and NGOs on request.

3.0

ACADEMIC PROGRAMMES

The following educational programmes are being offered at NDRI, Karnal and its Southern Regional Campus, Bangalore:

- | | |
|---|-------------------------------|
| 1. Diploma in Dairy Technology | 3. B.Tech. (Dairy Technology) |
| 2. Diploma in Animal Husbandry & Dairying | 4. Master's Programme |
| | 5. Doctor of Philosophy |

Accreditation

- All the academic programmes of NDRI Deemed University have been reviewed and accredited by the ICAR Accreditation Board for a period of five years from August 2008 to July 2013.

Academic Highlights

- Admissions strictly through Entrance Examinations.
- Institute follows a semester system. Each semester is of 18 to 19 week duration.
- Summer vacation is of approximately 6 to 7 week duration.

- Regular academic sessions.
- Strict adherence of academic calendar and academic regulations.
- Strict discipline. Violation of regulations may lead to permanent dismissal of the student.
- Following 10 point scale evaluation system.
- Each student is evaluated in each course continuously throughout the semester.
- More and more emphasis on practical training.
- Updating of syllabi according to need.

3.1**B.TECH (DAIRY TECHNOLOGY)**

- 3.1.1 This degree programme offers intensive training in processing and quality control of milk and dairy products and engineering aspects of dairy processing equipment.
- 3.1.2 The duration of the B.Tech. (Dairy Technology) is four years. The course is run under semester system. One academic year consists of two semesters each of about 18 week's duration. The students are given one year In-plant Training at Model Dairy Plant located at Institute's premises.
- 3.1.3 The candidate must have passed 10+2 Senior Secondary Examination of the Central Board of Secondary Education or any other examination within scope and standard found to be equivalent to the Senior Secondary Examination of an Indian University/Board after a period of

12 years of study. The last two years of such 10+2 examination should have papers in Physics, Chemistry and Mathematics as a core subject. Candidate must have passed the qualifying examinations as enumerated above securing not less than 50% of the total marks for General, OBC and UPS categories and 40% of the total marks for SC/ST and Physically handicapped categories.

- 3.1.4 Admission shall be made on the basis of merit through All India Entrance Examination conducted by the National Dairy Research Institute, Karnal.
- 3.1.5 One who is appearing for 10+2 examination in the year 2016 can also apply subject to his/her producing 10+2 passing certificate on the date of counselling.

4.0**PROCEDURE FOR APPLICATION****4.1 B. Tech (Dairy Technology)**

- (1) Application for admission shall be made in the prescribed form meant for the purpose.
- (2) The application form bears a serial number at the top left corner on page 1. This number, as well as the main subject to

- which the admission is sought, must be quoted in all correspondence regarding admission to this Institute.
- (3) All correspondence for admission should be addressed to the Academic Coordinator, National Dairy Research Institute, Karnal-132001 (Haryana). For all important

dates please see important instructions on the back of cover page.

- (4) The application form and information bulletin can also be downloaded from NDRI Website: <http://www.ndri.res.in>. The completed form may be submitted to the Academic Coordinator, University Office, National Dairy Research Institute, Karnal-132001 along with the bank draft of Rs. 1200/- (600/- in case of ST, SC & PH candidates) on or before 30th of March 2016. The Bank draft must be drawn in favour of "ICAR Unit, NDRI, Karnal" payable at Karnal.
- (5) In order to obtain acknowledgement for the receipt of the application by the Institute, candidates are advised to send their applications by registered/speed post.
- (6) Application for admission must be completed in block letters. All entries in the application form must be filled up and attested copies of the following certificates and documents (original certificate should not be sent with the application).
 - a) Certificate for date of birth.
 - b) Certificates of all examinations passed starting from Matriculation.
 - c) Mark lists indicating percentage of marks, total marks and division/OGPA etc. obtained. of all examinations passed.
 - d) A certificate from the Principal/school indicating the marks/ division obtained in the examination passed.
 - e) In case of SC/ST and OBC candidate, a certificate as per annexure V & VI from a first class Magistrate of a District/ Competent Authority indicating that the candidate belongs to a particular category.
- f) Three recent passport size photographs duly attested should be affixed at appropriate place of the Application/ Admit Card.
- (7) All original certificates and marks sheet are to be produced at the time of registration/ counselling. Candidates who do not produce all the original certificates and mark sheets will not be admitted.
- (8) If a candidate wilfully furnishes wrong information or suppresses any relevant information, his/her candidature/ admission will automatically stand cancelled.
- (9) Roll Nos and centre of examination of the eligible candidates will be displayed on NDRI website (www.ndri.res.in) on 30-04-2016. No despatch of admit card shall be made. Therefore, all candidates are advised to visit the NDRI website and note down the roll no. on their admit cards and bring it with them to appear in the examination.
- (10) Candidates are advised to retain a photocopy of the application form and bank draft for their personal record. It may be used at any time in support of having submitted application and also retain a copy of post office receipt for dispatch through registered post or speed post. Without these paper, a candidate shall not be allowed to appear in examination, in the absence of admit card.

5.0 ENTRANCE EXAMINATION & SELECTION PROCEDURE

5.1 B. Tech (Dairy Technology)

- (1) The candidates who fulfil the minimum qualifications will be eligible to appear in the entrance examination. Name and Roll Nos. of eligible candidates

will be displayed on NDRI Website. Those who are not found eligible, their names will be displayed separately. The entrance examination will be conducted at following centres:

- | | |
|---|---|
| <ul style="list-style-type: none"> (a) NDRI, Karnal (Haryana) (b) Southern Regional Station, NDRI, Aduodi, Bangalore (Karnataka) (c) Eastern Regional Station, NDRI, Kalyani (West Bengal) (2) There will be only one paper based on subject matter of 2 hrs 30 minutes duration and of 180 marks. Paper will be objective type with multiple choice questions. (3) The syllabus of written examination is given as Annexure-I. (4) The qualifying marks for the written examination will be 90 (81 for SC/ST & PH category) Marks. | <ul style="list-style-type: none"> (5) The final selection for admission to B.Tech (Dairy Technology) will be based on merit list prepared on the basis of marks obtained in the Entrance Examination. (6) Only those students will be registered who will complete their qualifying examination in all respect latest before the commencement of counselling. (7) The result will be announced on 30.04.2016 and the merit list showing marks of qualified candidates will be displayed on NDRI website. (8) Information Bulletin will be available at NDRI website from 22-02-2016 to 16-03-2016. |
|---|---|

6.0

COUNSELLING PROCESS

(For admission to B. Tech (Dairy Technology))

- | | |
|--|--|
| <p>6.1 The counselling will be held at NDRI, Karnal. The Candidate short listed as qualified for counselling based on the merit rank shall report for counselling as per the counselling schedule given on the back of cover page under "Directions to candidate and important dates" of the information Bulletin. Counselling will be offline for which candidates are advised to remain in touch with the NDRI website (www.ndri.res.in). The merit list showing the names of qualified candidate on the basis of written examination will be displayed on the NDRI website only. No separate intimation will be sent to candidates by letter or fax or any other means in this regard. The candidate shall forfeit the claim for admission if he/she, in person or through Authorized representative does not report for counselling. The candidates will mark their attendance on arrival and will be considered for counselling. Those reporting late will have to register arrival time as late entry in the attendance register and will be considered for</p> | <p>counselling as per latest situation of seats available at that time. The seats already filled up will not be disturbed in such situation.</p> <p>6.2 The candidates belonging to PH category will be called first and offered seat against the category to which they belong. The seats for PH category are 3% of overall seats of B. Tech. (DT) will be filled within the overall number of total seats.</p> <p>6.3 The candidates belonging to Under Privileged States (UPS) not having any State Agricultural/Veterinary University, will be called after the counselling of candidates belonging to PH category and offered seat against the category (i.e. SC/ ST/ OBC). The seats for UPS category are 2% of overall seats of B. Tech. (DT) will be filled within the overall number of total seats.</p> <p>6.4 The candidates belonging to other reserved categories will be called in order of ST, SC and OBC after the admission of PH and UPS candidates is over. The seats in SC and ST categories are interchangeable and in case candidates of SC/ ST categories are not available, the seats thus remaining</p> |
|--|--|



Felicitating of Dr. H.K. Bhanwala by Dr. A.K. Srivastava

- vacant will be filled from general category. Similarly, if the candidates from OBC category are not available, the same will be filled from general category.
- 6.5 The general category candidates will be called after the counselling of candidates of above categories is over. The reserved seats left vacant, if any and the vacant seats for unreserved category will be filled-up from the general category in the order of merit.
- 6.6 Candidates short listed as qualifying for counselling should bring, admit card, all original certificates with marks sheets, SC/ ST/ PH/ UPS/ OBC category certificate (Annexure-V & VI) in original for verification and submission.
- 6.7 Immediately on offer of admission, candidates are required to deposit counselling fee (Non refundable) Rs. 2000/- to Cashier NDRI, Karnal.
- 6.8 Candidates must appear in person at the time of counselling. In case a candidate is not in the position to present him/ herself, an authorized representative can attend the counselling on production of original certificates and authorization letter (Annexure-IV).

7.0

NUMBER OF SEATS

Total seats : 40

1. Filled by ICAR: 06
2. Filled by NDRI: 34

Reservation of Seats:

UR	SC	ST	OBC	Total
17	05	03	09	34

PH = 3% - 1 seat (*)

UPS = 2% - 1 seat (*)

(*) The seats will be provided to the candidates against the category i.e., (UR/SC/ST/OBC) to which they belong.

8.0**RESERVATION**

- 8.1 15% of total seats are reserved for bonafide candidates belonging to Scheduled Castes, 7.5% for Scheduled Tribes, 27% seats for OBC, 3% for Physically Handicapped subject to their being otherwise eligible. The reservation of seats is interchangeable amongst the SC/ST candidates depending upon the availability of such candidates. In case candidates from Reserved Categories are not available, the same will be filled up from General Categories.
- 8.2 2% Seats would be reserved for the candidates of the remote and Under Privileged States/ Union Territories (UT/ UPS) namely Andaman and Nicobar Islands, Arunachal Pradesh, Dadra and Nagar Haveli, Daman & Diu, Goa, Lakshdeep, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, where educational facilities in Agriculture and Allied Science subjects do not exist. However, these seats will be filled by merit amongst the qualified candidates from the State concerned those who qualify this examination. In case no qualified candidates are available in these categories, the vacant seats will be filled from general merit. Candidates from UPS will have to produce domicile certificate issued by the competent Authority at the time of counselling.
- 8.3 Definition for Physical Handicapped Candidates having permanent disability of not less than 40%, provided the candidate is otherwise fit for admission. Such candidates will have to bring a certificate from a Govt. Hospital/Medical Board (duly attested by a Gazetted Officer) of the District to which the candidates belongs for verification at the time of counselling.
- Such candidates will also have to appear before the Medical Board constituted by the Director for determining the percentage of disability and for assessment whether they are fit to carry out the studies despite being handicapped.

9.0**AGE LIMIT**

Minimum age limit for B.Tech. shall be 17 years on or before 31-07-2016 and upper age limit is 23 years. No relaxation is admissible regarding the minimum age limit.

10.0**FOREIGNER STUDENTS**

- 10.1 Foreign students seeking admission at this Institute shall have to submit their applications through their respective Embassies at New Delhi or the respective Indian Missions in their countries to the Govt. of India, Department of Agricultural Research and Education, Krishi Bhavan, New Delhi-110001 and the candidature of foreign students shall be considered if they are sponsored with financial support by :-
- (a) Their respective Governments or
- (b) The Government of India.
- 10.2 Self supported foreign students can apply through Educational Consultants India Limited (Ed.CIL) using the following contact details.
- Head (Placement & Secondment)
Educational Consultants India Limited
Educational Consultants India Limited House, 18-A, Sector-16A, Noida-201301.
Phones: 0091-120 -2515281; 0091-120 -2512001-06

Fax: 0091-120-2515372

Email: placement@edcil.co.in

- 10.3 The foreign candidates should have qualifications required for admission as given under clause 3.1.3.
- 10.4 A good knowledge of English is essential. A certificate of the candidate's proficiency in English, issued by the respective Indian Mission abroad, should accompany their application for admission. Candidates must carry a proper visa for the entire duration of the course. They should ensure that they get the correct visa from the Indian Embassy/High commission in their country. Govt. of India guidelines stipulate that if a fellow arrives without proper visa and his/her actual admission at the University/Institute does not materialize, he/she will be deported to his/her country.

- 10.5 All the foreign students other than those sponsored by the Government of India with suitable fellowship such as ITEC Program, ICCR, General Cultural Scholarship and Cultural Technical Exchange will be charged Institutional Economic Fee @ US \$ 200/- p.m. or US \$ 2000/- p.a. This fee will be over and above other usual charges and fees of the University as applicable to Indian nationals.
- 10.6 As per directive from the Govt. of India, Ministry of Health, New Delhi, health check for foreign students including that for AIDS is mandatory. Foreign students will subject themselves for health check within one month of arrival and till the results are known the students will be admitted provisionally. Their admission is to be confirmed on production of fitness certificate from the competent authority.

11.0 AWARD OF MEDALS, BEST THESIS AWARDS & MERIT CERTIFICATES

B. Tech. (Dairy Technology)

B. Tech.(DT) students will be awarded three Medals: i.e Gold, Silver and Bronze medal for obtaining 1st, 2nd and 3rd positions for overall performance in course work as per eligibility criteria. The

Merit certificates upto 20% of the total pass out students will be awarded to B. Tech.(DT) students who secure at least 75% marks and completed all the courses prescribed for the degree successfully in the first attempt.

12.0 EXTRA CURRICULAR ACTIVITIES

- 12.1 Students are encouraged to participate in activities such as music, Art & Dramatics,

Hobbies, Literary Activities, Declamation & Debate Contests, Paper Reading and Recitation Contests etc.



Students participating in cultural programme

- 12.2 Excellent facilities are available for indoor and outdoor games, sports etc. and students are required to take part in sports activities.
- 12.3 Students are also encouraged to participate in Basic/Advanced Youth Leadership

Camps, Hiking and Trekking activities, Youth Festivals/ Games and Sports etc. organised by this Institute and other Organizations.

13.0

HOSTEL

- 13.1 Adequate hostel accommodation is available with all modern facilities in terms of well furnished rooms, sports, indoor games, TV Rooms, Reading Rooms, Hobby Centre, Cultural Activities etc. A number of messes with modern cooking provisions are available for boarding requirements of the hostel residents. A cafeteria is also available for refreshments. In all, there are seven hostels in the Institute providing

available for the students coming from abroad with their spouse.

In order to regulate community living harmoniously in the Hostels, certain rules have been framed for the guidance of the students. These rules are meant for the students to maintain a high order of discipline, honesty and moral conduct for self and fellow hostellers. Students admitted in this Institute are all meritorious.



A view of Narmada Hostel

accommodation for over 800 students. B.Tech. students are accommodated in Brahmaputra Hostel, Master's in Satluj Hostel and Doctoral students in Krishna Hostel, Narmada Hostels, respectively. There are two separate hostel accommodations for Girl Students known as Kaveri Girls Hostel and Alaknanda Sadan. A limited accommodation in Married Scholar Hostel is available for married Ph.D. scholars provided the scholar resides with his/her spouse. An International Hostel is also

They are supposed to lead a career oriented living in the hostels. While in the hostel they are responsible for up keep and look after of rooms, furnishing and fixtures. They are also supposed to conduct extremely well within and outside the Hostels. Payment of fees and dues, proper use of hostel facilities, common room and mess regulations regarding hostel visiting hours are some of the important points that have to be adhered to by the hostellers.

- 13.2 Students seeking admission to the hostel must apply separately at the beginning of each semester /year in the prescribed form.
- 13.3 Students admitted to the hostel shall abide by the decision of the Chief Hostel Warden with respect to the enforcement of Hostel Rules. Copy of the Hostel Rules will be provided to each hosteller at the time of admission. Those infringing the Hostel Rules are liable to be expelled from the hostels. The decision of the Chief Hostel Warden/Joint Director shall be final.
- 13.4 In view of the limited availability of hostel seats, accommodation will be on the basis of merit in entrance examination.

14.0

HEALTH CARE

The Health Complex is a 20-bedded hospital offering the services of practitioners of Allopathic, Ayurvedic and Homeopathy fields of medicine. The complex offers diagnostic investigative laboratory, radiological (X-ray) and ECG facilities. There is a full-fledged dispensing provision for common ailments to the students of NDRI Deemed University as well as the staff of Institute. The Student will have to take a group health insurance policy every year. The Institute will facilitate the students in arranging the insurance policy.

15.0

RIGHT TO REFUSE ADMISSION

The Director reserves the right to refuse admission of any candidate even though he/she may fulfil the academic requirements of admission on the basis of criteria laid down in the regulations, and/or may otherwise be eligible for admission on the basis of entrance examination without assigning any reason thereof. The decision of the Director shall be final and legally binding.

16.0

REGISTRATION

- 16.1 Students must report for registration on the due date mentioned in the admission letter/ e-mail or the information displayed on NDRI website, failing which offer for admission is liable to be withdrawn automatically.
- 16.2 At the time of registration, the students must produce the following documents:-
- a) Original certificates and mark sheets of all the examinations passed from High School or its equivalent.
 - b) In case of SC/ ST candidate, a certificate from a first class Magistrate of a District/ Competent Authority indicating that the candidate belongs to a particular SC/ ST category which is included in the latest list appended to the constitution of India, SC/ ST 1950 and PH Certificate from a Govt. Hospital/Medical Board (duly attested by a Gazetted Officer) for verification.
 - c) Three passport size photographs (which should not be more than 6 months old) for the preparation of ID card/ Hostel Forms.
- 16.3 The students and the parents will have to submit affidavits as per UGC guidelines not to indulge in ragging or other related activities.

17.0**RAGGING**

Ragging in any form is totally banned. As per directives from Hon'ble Supreme Court of India, if any incident of ragging comes to the notice of the authority, the concern student shall be given liberty to explain and if his explanation is not found satisfactory, the authority would expel him from the institute.

18.0**CLASS ATTENDANCE**

Students are expected to attend all the theory and practical classes. The regulations require that the students must maintain prescribed minimum attendance of 75% in the classes separately for theory & practical in each course.

19.0**RULES FOR FINES****19.1 Fines for absence from the Hostel**

A special fine considered adequate according to the seriousness of the case will be levied by the Chief Hostel Warden / Joint Director for overnight absence from the Hostel without prior permission of the competent authority.

19.2 Such students who do not clear mess charges by the due date may result in

not only pay heavy penalty but also will be removed from the hostel and disciplinary action as deemed fit will be taken.

19.3 Fine recovered from the students towards late payment of fees, fines for act of indiscipline etc., will be credited to "R" Deposit.

20.0**GENERAL INFORMATION**

20.1 The selected candidates should join the course by the date indicated in the admission letter/e-mail or as displayed on the website.

20.2 The admission of a candidate who fails to join the course by the stipulated date will stand cancelled automatically.

20.3 Candidates should produce Migration Certificate from the university/ Board from which they have obtained the eligible qualification within three months of commencement of session.

20.4 Once the admissions are finalized for an academic session, there will be no scope for lateral entry via transfer from any other Institutes to the NDRI.

20.5 The Institute reserves the right of admission and also the right to cancel the admission of a candidate at any stage if it is found that the information furnished by the candidate in his/her application is not true or is incomplete.

20.6 While every care is taken to shortlist the eligible candidates for the Entrance Examination and admit only those who have qualified, it is the responsibility of the candidate to fully ensure his/her eligibility. NDRI will not be responsible for inadvertently calling the candidates for the Entrance Examination or in granting them admission. Candidates in their own interest should ensure that the certificate



Swachh Bharat Abhiyan by NDRI Students

- of the University/Board from where they have passed the qualifying examination is from recognised Board/ University.
- 20.7 Admission to the Institute implies acceptance by the student and his/her parents/guardian of all provisions given in the bulletin and/or change in the Institute Rules, Regulation, Fee etc. that are made from time to time.
- 20.8 The information indicated in the Information Bulletin is only for general guidance and could be modified/ changed from time to time by the Institute. The Information Bulletin shall not be treated as a legal document.
- 20.9 The result of the Entrance Examination declared by the Institute shall be treated as final. There is no provision for scrutiny of answer books.
- 20.10 In case of any legal dispute, the same shall be subject to KARNAL courts jurisdiction only.
- 20.11 Media of Instruction is English.

21.0

FEES

All fees (see Table below) must be paid on the due date in each Semester. Fees cannot be adjusted against stipends/scholarship. Non-receipt of scholarship etc. will not be considered as a valid reason for late payment of fees. Fees and annual dues once paid will not be refunded to the students leaving the course for any reason what-so-ever.

Sl. No	Description of fee	B.Tech (D.T.)
1	Caution Money	10000.00
2	Registration Fee (Per annum)	50.00
3	**Tuition Fee, per annum (To be paid in two installments semester wise)	4000.00
4	Continuation fee (per semester to be paid by students who are on physical exemption)	

Hostel Charges

5	Students Hostel Fee	
	(i) Hostel Fee, per annum	2000.00
6	Married Hostel Fee	
	(i) Hostel Fee, per annum	6000.00
	(ii) Electricity & Water charges	Actual
7	International Hostel Fee	
	(i) Hostel Fee, per annum	NA
	(ii) Electricity & Water charges	NA
8	Charges for Guest Room in Hostel	
	The hostel charges for students/students guests for short stay were recommended as Rs.50/- per day.	
	The permission to stay in hostel may be allowed by the authorities as under:	
	(i) Up to 3 days-Hostel Warden of the concerned hostel	
	(ii) Up to 7 days by the Chief Hostel Warden	
	(iii) Beyond 7 days by the Joint Director (Academic)	

Annual Payments

9	Students Council Fee	150.00
10	Magazine Fee	50.00
11	**Welfare Fund	100.00
12	Sports fund	100.00
13	Cultural and Literary Activities Fee	100.00
14	**Examination Fee (per annum)	600.00
15	Identity Card Fee	50.00

Other Charges

16	*Provisional Degree Certificate	100.00
17	Duplicate Degree	500.00
18	Award of Degree in Absentia	600.00
19	Late Registration Fine	As per Rule
20	*Alumni Association	250.00
21	*Migration Certificate	50.00
22	*Convocation fee	100.00

- (i) Fee at * marked will be charged in the 2nd year 1st Semester at the time of Registration along with above fee.
- (ii) Fee at ** marked is exempted to B.Tech. (DT) students belonging SC/ST category.
- (iii) Caution money will not be refunded to the candidates if they leave the course after the closing of admission and without completing their degree. If the seat vacated by a candidate is filled up from the waiting list, the caution money will be refunded in full.
- (iv) The Fees will be charged by the University/ICAR time to time and will be paid on the due date in each semester. The student will have to pay revised fee if any with the increase in the fellowship amount.

Note :

- a) In-service candidates shall also be required to pay all the fees as applicable in the case of other candidates.
- b) Unless specially permitted by the Joint Director/Director, the name of the defaulter shall stand struck off from the rolls if he/she does not report for registration within a period of two weeks from the date of commencement of the respective semester. He/She may, however, be re-admitted at the discretion of the Joint
- c) Director/Director on the submission of an application through the Head of Division and on payment of re-admission fee at the prescribed rate and also the fine.
- The fee and other charges once paid are not refundable. However, the caution money will be refundable only to the passed out students, if claimed within one year of completion of the course. Caution money will not be refunded if the seat-vacated by the student remains vacant.

22.0

ACADEMIC CALENDAR

2016-2017 SESSION

2016

August

1st

3rd

3rd

4th

December

1st

7th

2017

January

11th

12th

May

17th

May

26th

FIRST SEMESTER

Registration and payment of fees (for fresh students)

-do- (for existing students)

Orientation programme for freshers

Classes begin

Last working day

Examinations begin (Tentative)

SECOND SEMESTER

Registration and payment of fees

Classes begin

Last working day

Examinations begin (Tentative)

ANNEXURE-I

SYLLABUS FOR ENTRANCE EXAMINATION FOR B.TECH. (DAIRY TECHNOLOGY) 2016-17

PHYSICS

Unit 1: Physical World and Measurement

Physics scope and excitement; nature of physical laws; Physics, technology and society. Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

Unit 2: Kinematics

Frame of reference. Motion in a straight line: Position-time graph, speed and velocity. 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). Elementary concepts of differentiation and integration for describing motion. Scalar and vector quantities: Position and displacement vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Relative velocity. Unit vector; Resolution of a vector in a plane - rectangular components. Motion in a plane. Cases of uniform velocity and uniform acceleration-projectile motion. Uniform circular motion. Motion of objects in three dimensional space. Motion of objects in three dimensional space.

Unit 3: Laws of Motion

Intuitive concept of force. 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. Static and kinetic friction, laws of friction, rolling friction. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

Unit 4: Work, Energy and Power

Scalar product of vectors. Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-conservative forces: elastic and inelastic collisions in one and two dimensions.

Unit 5: Motion of System of Particles and Rigid Body

Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of uniform rod. Vector product of vectors; moment of a force, torque, angular momentum, conservation of angular momentum with some examples. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions; moment of inertia, radius of gyration. Values of moments of inertia for simple geometrical objects Statement of parallel and perpendicular axes theorems and their applications.

Unit 6: Gravitation

Kepler's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude

and depth. Gravitational potential energy; gravitational potential. Escape velocity. Orbital velocity of a satellite. Geo-stationary satellites.

Unit 7: Properties of Bulk Matter

Elastic behaviour, 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). Effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, Reynold's number, streamline and turbulent flow. Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, application 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, thermal conductivity, Newton's law of cooling.

Unit 8: Thermodynamics

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.

Unit 9: Behaviour of Perfect Gas and Kinetic Theory

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 application to specific heats of gases; concept of mean free path, Avogadro's number.

Unit 10: Oscillations and Waves

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 wave motion. 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

Electric Charges; Conservation of charge, Coulomb's law - force 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, potential difference, 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, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric

medium between the plates, energy stored in a capacitor. Van de Graaff generator.

Unit 12: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V - I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors; series and parallel combinations of 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 simple applications. Wheat stone bridge, metre bridge. Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.

Unit 13: Magnetic Effects of Current and Magnetism

Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids. Force on a 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 to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar

magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.

Unit 14: Electromagnetic Induction and Alternating Currents

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

Unit-15: Electromagnetic waves

Displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). 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

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula. Magnification, power of a lens, combination of thin lenses in contact. Refraction and dispersion of light through a prism. Scattering of light - blue colour of the sky and reddish appearance of the sun at sunrise and sunset. Optical instruments: Human eye, image formation

and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (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. Proof of laws of reflection and refraction using Huygens' principle. Interference, 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 polarised light; Brewster's law, uses of plane polarised light and Polaroids.

Unit 17: Dual Nature of Matter and Radiation

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

Unit-18: Atoms & Nuclei

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, 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, nuclear reactor, nuclear fusion.

Unit 19: Electronic Devices

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, transistor action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit 20: Communication Systems

Elements of a 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: Some Basic Concepts of Chemistry

General Introduction: Importance and scope of chemistry. Historical approach to particulate nature of matter, laws of chemical combination. Dalton's atomic theory: concept of elements, atoms and molecules, Atomic and molecular masses mole concept and molar mass: percentage composition, empirical and molecular formula chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit 2: Solid State

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties.

Unit 3: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid

solutions, colligative properties - relative lowering of vapour pressure, elevation of Boiling Point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.

Unit 4: Structure of Atom

Discovery of electron, proton and neutron; atomic number, isotopes and isobars. Thomson's model and its limitations, Rutherford's model and its limitations. Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p, and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli exclusion principle and Hund's rule, electronic configuration of atoms, stability of half filled and completely filled orbitals.

Unit 5: Classification of Elements and Periodicity in Properties

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements - atomic radii, ionic radii. Ionization enthalpy, electron gain enthalpy, electro negativity, valence.

Unit 6: Chemical Bonding and Molecular Structure

Valence electrons, ionic bond, covalent bond: bond parameters. Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR (Valence shell electron pair repulsion) theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital; theory of homonuclear diatomic molecules (qualitative idea only), hydrogen bond.

Unit 7: States of Matter: Gases and Liquids

Three states of matter. Intermolecular interactions, type of bonding, melting and boiling points. Role of gas laws in elucidating the concept of the molecule, Boyle's law, Charles law, Gay Lussac's law, Avogadro's law. Ideal behaviour, empirical derivation of gas equation, Avogadro's number. Ideal gas equation. Derivation from ideal behaviour, liquefaction of gases, critical temperature. Liquid State - Vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations).

Unit 8: Thermodynamics

Concepts of System, types of systems, surroundings. Work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH , Hess's law of constant heat summation, enthalpy of: bond dissociation, combustion, formation, atomization, sublimation. Phase transformation, ionization, and solution. Introduction of entropy as a state function, free energy change for spontaneous and non-spontaneous processes, criteria for equilibrium.

Unit 9: Equilibrium

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle; ionic equilibrium - ionization of acids and bases, strong and weak electrolytes, degree of ionization, concept of pH. Hydrolysis of salts. Buffer solutions, solubility product, common ion effect.

Unit 10: Redox Reactions

Concept of oxidation and reduction, redox reactions, oxidation number, balancing

redox reactions, applications of redox reactions.

Unit 11: Hydrogen

Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen; hydrides - ionic, covalent and interstitial; physical and chemical properties of water, heavy water; hydrogen peroxide-preparation; properties and structure; hydrogen as a fuel.

Unit 12: s-Block Elements (Alkali and Alkaline earth metals)

Group 1 and Group 2 elements

General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens; uses.

Unit 13: Preparation and properties of some important compounds

Sodium carbonate, sodium chloride, sodium hydroxide and sodium hydrogen carbonate, biological importance of sodium and potassium. CaO , CaCO_3 and industrial use of lime and limestone, biological importance of Mg and Ca

Unit 14: Some p-Block Elements

General Introduction to p-Block Elements: Group 13 elements

General introduction, electronic configuration, occurrence. Variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group; Boron-physical and chemical properties, some important compounds; borax, boric acids, boron hydrides. Aluminum: uses, reactions with acids and alkalis.

Unit 15: Group 14 elements

General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity. anomalous behaviour of first element, Carbon - catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides. Important compounds of silicon and a few uses: silicon tetrachloride, silicones, silicates and zeolites.

Unit 16: Organic Chemistry

Some Basic Principles and Techniques

General introduction, methods of qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds, Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions; electrophiles and nucleophiles, types of organic reactions

Unit-17: Hydrocarbons

Classification of hydrocarbons

Alkanes - Nomenclature, isomerism, conformations (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.

Alkenes - Nomenclature, structure of double bond (ethyne) geometrical isomerism, physical properties, methods of preparation; chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

Alkynes - Nomenclature, structure of triple bond (ethyne), physical properties.

Methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of -hydrogen, halogens, hydrogen halides and water.

Aromatic hydrocarbons - Introduction, IUPAC nomenclature; benzene: resonance, aromaticity; chemical properties: mechanism of electrophilic substitution. - nitration, sulphonation, halogenation, Friedel-Craft's alkylation and acylation: directive influence of functional group in mono-substituted benzene; carcinogenicity and toxicity.

Unit 18: Electrochemistry

Conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell - electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, fuel cells; corrosion.

Unit 19: Chemical Kinetics

Rate of a reaction (average and instantaneous), factors affecting rate of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment)

Unit 20: Surface Chemistry

Adsorption - physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis: homogeneous and heterogeneous, activity and selectivity: enzyme catalysis; colloidal state: distinction between

true solutions, colloids and suspensions; lyophilic, lyophobic, multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion - types of emulsions.

Unit 21: General Principles and Processes of Isolation of Elements

Principles and methods of extraction - concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

Unit 22: p-Block Elements

Group 15 elements

General introduction. electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen - preparation, properties and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms; compounds of phosphorous: preparation and properties of phosphine, halides (PCl_3 , PCl_5) and oxoacids.

Unit 23: Group 16 elements

General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen: preparation, properties and uses; simple oxides; Ozone. Sulphur - allotropic forms; compounds of sulphur: preparation, properties and uses of sulphur dioxide; sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).

Unit 24: Group 17 elements

General introduction, electronic configuration, oxidation states,

occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only),

Unit 25: Group 18 elements

General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses ..

Unit 26: d and f Block Elements

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids - electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction.

Actinoids - Electronic configuration, oxidation states,

Unit 27: Coordination Compounds

Coordination compounds -Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

Unit 28: Haloalkanes and Haloarenes

Haloalkanes: Nomenclature, nature of C-X bond. physical and chemical properties. mechanism of substitution reactions.

Haloarenes: Nature of C-X bond, substitution reactions (directive influence of

halogen for monosubstituted compounds only) Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit 29: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses of methanol and ethanol.

Phenols - Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit 30: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit 31: Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in context.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit 32: Blomolecules

Carbohydrates- Classification (aldoses and ketoses), monosaccharide (glucose and fructose), oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance.

Proteins - Elementary idea of α -amino acids, peptide bond, polypeptides, proteins, structure of amines-primary; secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes.

Vitamins - Classification and functions.

Nucleic Acids: DNA and RNA.

Unit 33: Polymers

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: natural and synthetic like polythene, nylon, polyesters, Bakelite, rubber.

Unit 34: Environmental Chemistry

Environmental pollution - air, water and soil pollution, chemical reactions in atmosphere, smog, major atmospheric pollutants; acid rain, ozone and its reactions, effects of depletion of ozone layer, greenhouse effect and global warming - pollution due to industrial wastes; green chemistry as an alternative tool for reducing pollution, strategy for control of environmental pollution.

Unit 35: Chemistry in Everyday life

1. **Chemicals in medicines** - analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
2. **Chemicals In food** - preservatives, artificial sweetening agents.
3. **Cleansing agents** - soaps and detergents, cleansing action.

MATHEMATICS**Unit 1: Sets and Functions**

1. **Sets:** Sets and their representations. Empty set. Finite & Infinite sets. Equal sets. Subsets, Subsets of the set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set.
2. **Relations & Functions:** Ordered pairs, Cartesian product of sets. Number of elements in the cartesian product of two finite sets. Cartesian product of the reals with itself (upto $R \times R \times R$). Definition of relation, Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations, Pictorial representation of a function, domain. Co-domain and range of a relation. Function as a special kind of relation from one set to another. Real valued function of the real variable, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions With their graphs. Sum, difference, product and quotients of functions.
3. **Trigonometric Functions:** Positive and negative angles. Measuring angles in radians & in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2 X + \cos^2 X = 1$, for all x . Signs of trigonometric functions and sketch of their graphs. Expressing $\sin(x+y)$ and $\cos(x+y)$ in terms of $\sin x$, $\sin y$, $\cos x$ & $\cos y$. Deducing the identities like the following:

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \pm \tan x \tan y}, \quad \cot(x \pm y) = \frac{\cot x \cot y \pm 1}{\cot y \pm \cot x}$$

$$\cos x + \cos y = 2 \cos \frac{x+y}{2} \cos \frac{x-y}{2}$$

$$\sin x - \sin y = 2 \cos \frac{x+y}{2} \sin \frac{x-y}{2} \quad \cos x - \cos y = -2 \sin \frac{x+y}{2} \sin \frac{x-y}{2}$$

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

Inverse Trigonometric Functions: Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

Properties of triangles, including centroid, incentre, circum-centre and orthocentre, Solution of triangles. Heights and Distances.

on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables- graphically.

Unit 2: Algebra

- Principle of Mathematical Induction:** Processes of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.
- Complex Numbers and Quadratic Equations:** Need for complex numbers, especially -1 , to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system.
- Linear Inequalities:** Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation

- Permutations & Combinations:** Fundamental principle of counting. Factorial $n!$. Permutations and combinations, derivation of formulae and their connections, simple applications.
- Binomial Theorem:** History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.
- Sequence and Series:** Sequence and Series. Arithmetic progression (A.P.), arithmetic mean (A.M.) Geometric progression (G.P.), general term of a G.P., sum of n terms of a G.P., geometric mean (G.M.), relation between A.M. and G.M. Sum to n terms of the special series O_n , O_{n^2} and O_{n^3} .
- Matrices:** Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists.

8. **Determinants:** Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the 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 (having unique solution) using inverse of a matrix.

Unit 3 Coordinate Geometry

1. **Straight Lines:** Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point-slope form, slope-intercept form, two-point form, intercepts form and normal form. General equation of a line. Distance of a point from a line.
2. **Conic Sections:** Sections of a cone: circle, ellipse, parabola, hyperbola, a point, a straight line and pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.
3. **Introduction to Three-dimensional Geometry:** Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.

Unit 4: Calculus

1. **Limits and Derivatives:** Derivative introduced as rate of change both as that of distance function and

geometrically, intuitive idea of limit. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

2. **Continuity and Differentiability:** Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function. Concept of exponential and logarithmic functions and their derivative. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.
3. **Applications of Derivatives:** Applications of derivatives: rate of change, increasing/decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems.
4. **Integrals:** Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts: only simple integrals of the type to be evaluated. Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

$$\int \frac{dx}{x^2 \pm a^2} \quad \int \frac{dx}{\sqrt{x^2 \pm a^2}} \quad \int \frac{dx}{\sqrt{a^2 - x^2}} \quad \int \frac{dx}{ax^2 + bx + c} \quad \int \frac{dx}{\sqrt{ax^2 + bx + c}} \quad \int \frac{(px + q)}{ax^2 + bx + c} dx$$

$$\int \frac{(px + q)}{\sqrt{ax^2 + bx + c}} dx \quad \int \sqrt{a^2 \pm x^2} dx \quad \text{and} \quad \int \sqrt{x^2 - a^2} dx$$

5. **Applications of the Integrals:** Applications in finding the area under simple curves, especially lines, areas of circles! parabolas/ ellipses (in standard form only), area between the two above said curves.
6. **Differential Equations:** Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: $\frac{dy}{dx} + py = q$ where p and q are functions of x.

Unit 5: Vectors and Three Dimensional Geometry

1. **Vectors:** Vectors and scalars, magnitude and direction of a vector. Direction cosines/ ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, 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.
2. **Three-dimensional Geometry:** Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

Unit 6: Linear Programming

Linear Programming: Introduction, definition of related terminology such as constraints, objective function, optimization,

different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Unit 7: Mathematical Reasoning

Mathematical Reasoning: Mathematically acceptable statements. Connecting words/ phrases - consolidating

the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/or", "implied by", "and", "or", "there exists- and their use through variety of examples related to real life and Mathematics. Validating the statements involving the connecting words, difference between contradiction, converse and contrapositive.

Unit 8: Statistics & Probability

1. **Statistics:** Measures of central tendency, mean, median and mode from ungrouped/grouped data. Measures of dispersion, mean deviation, variance and standard deviation from ungrouped/grouped data. Correlation, regression lines.
2. **Probability:** Random experiments: outcomes, sample spaces (set representation). Events: occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive 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, Bayes' theorem, Random variable and its probability distribution, mean and variance of stochastic variable. Repeated independent (Bernoulli) trials and Binomial distribution.

Unit 9: Statics

Introduction, basic concepts and basic laws of mechanics, force, resultant of forces acting at a point, parallelogram law of forces, resolved parts of a force, Equilibrium of a particle under three concurrent forces. Triangle law of forces and its converse, Lami's theorem and its converse, Two Parallel forces, like and unlike parallel forces, couple and its moment.

Unit 10: Dynamics

Speed and velocity, average speed, instantaneous speed, acceleration and retardation, resultant of two velocities. Motion of a particle along a line, moving with constant acceleration. Motion under gravity. Laws of motion, Projectile motion.

ANTI-RAGGING MEASURES: SUBMISSION OF AFFIDAVIT BY THE STUDENTS / PARENT / GUARDIAN

Dear Parents/Guardian/Student,

You are fully aware of the orders of the Government and of Hon'ble Supreme Court on the Anti-Ragging measures. As per the latest policy all students and parent/guardians are required to submit an affidavit before a student is allowed registration in the University. The format of Affidavits is given at Annexure-IV and Annexure-V and to be submitted on a Non-Judicial paper of Rs.10/- duly attested by the oath commissioner.

All parents/guardian/students may get them duly attested by the Oath commissioner and bring it on the day of student's registration. Kindly note that there are two Affidavits as Annexure-IV & V. The Annexure-IV is to be signed by the student and Annexure-II shall be signed by the parent / guardian.

In case a student does not submit the same he/she shall not be allowed to proceed with the registration.

It is further, requested that this information be passed amongst friends.

Best wishes,
Sd/-
Director

ANNEXURE-II

AFFIDAVIT BY THE STUDENT

- 1) I, _____ (full name of student with admission/ registration/ enrolment number) S/o D/o Mr. /Mrs. /Ms. _____, having been admitted to (name of the institution), have seen the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, as placed on the NDRI website; www.ndri.res.in (hereinafter called the "Regulations") carefully read and fully understood the provisions contained in the said Regulations.
- 2) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
- 3) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
- 4) I hereby solemnly aver and undertake that a) I will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations. (b) I will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
- 5) I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against me under any penal law or any law for the time being in force.
- 6) I hereby declare that I have not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote,

ragging; and further affirm that, in case the declaration is found to be untrue, I am aware that my admission is liable to be cancelled.

Declared this ____ day of _____ month of ____ year.

Signature of deponent

Name

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein. Verified at(place)on this the (Day.....) of (Month) ,(Year) .

Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) of (month) , (year) after reading the contents of this affidavit

OATH COMMISSIONER

ANNEXURE-III

AFFIDAVIT BY PARENT /GUARDIAN

- 1) I, Mr. /Mrs. /Ms. _____ (full name of parent/guardian) father/mother/guardian of, (full name of student with admission / registration /enrolment number) , having been admitted to the National Dairy Research Institute , have been informed about the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations as placed on NDRI website (www.ndri.res.in).
- 2) I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
- 3) I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/ she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
- 4) I hereby solemnly aver and undertake that a) My ward will not indulge in any behavior or act that may be constituted as ragging under clause 3 of the Regulations. (b) My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
- 5) I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.

- 6) I hereby declare that my ward has not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

Declared this ____ day of _____ month of ____ year.

Signature of deponent

Name:

Address:

Telephone/ Mobile No.:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at _____ (place) on this the _____ (day) of _____ (month) , _____ (year) .

Signature of deponent

Solemnly affirmed and signed in my presence on this the _____ (day) of _____ (month) , _____ (year) after reading the contents of this affidavit.

OATH COMMISSIONER

ANNEXURE-IV**PROFORMA FOR AUTHORITY LETTER AND UNDERTAKING FOR AUTHORISED REPRESENTATIVE TO PARTICIPATE IN COUNSELLING ON BEHALF OF CANDIDATE
AUTHORITY LETTER**

I.....Son/Daughter of Shri..... bearing Roll No..... do hereby authorize Shri/Mrs/Miss..... Son/Wife/Daughter of Shri.....R/o..... to represent me on..... (date) before the Committee for allotment of a seat in University/Institute.

The signature and Photograph of above named person are attested below:

Coloured Photograph of the Candidate	Attested by the Principal of School/ College/Head of Institution Last attended or by a Gazetted Officer (With full of address of Attesting Authority)	Name _____
		Roll No. _____
		Merit Rank _____
		Address _____ _____ _____
Coloured Photograph of the representative	Photograph of representative to be attested by gazetted officer.	_____
		(Signature of the authorized representative)
		(Attested by the Candidate)

ISon/Daughter of Shri.....aged Years bearing Roll No. placed at Merit Rankin B.Tech (Diary Technology) Entrance Examination 2016 for Admission at NDRI, Karnal do hereby solemnly affirm and undertake that the decision of my authorized representative Shri/Mrs./Miss Son/Daughter/Wife of Shri regarding the allotment of seat in the University 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.

(Signature of the Candidate)

Name :

Roll No.:

Merit Rank:

NOTE : Any authorised representative cannot represent more than two candidates.

ANNEXURE-V**SCHEDULED CASTE / TRIBE CERTIFICATE -FORMAT
CASTE CERTIFICATE**

1. This is to certify that Shri/Smt/Kumari..... Date of BirthSon/
Daughter of.....of village/townin District/
Division of State/Union Territorybelongs to theCaste/Tribe which is
recognized as SC/ST under The Constitution (Scheduled Caste) Order, 1950. The Constitution
(Scheduled Caste) Union Territories Order, 1951. The Constitution (Scheduled Tribes) Union
Territories Order, 1951, as amended by the SCs And STs List (Modification) Order, 1950; The Bombay
Reorganisation Act, 1960; The Punjab Reorganization Act, 1966; The State Of HP Act, 1970; The
North Eastern Areas (Reorganisation) Act, 1971 and the SCs And STs Order (Amendment) Act,
1976. The Constitution (Jammu & Kashmir) SC Order, 1956. The Constitution (Andaman & Nicobar
Islands) SC Order 1959 as amended by SCs and STs Order (Amendment) Act, 1976. The Constitution
(Dadra And Nagar Haveli) SCs Order, 1962. The Constitution (Dadra And Nagar Haveli) STs Order,
1962. The Constitution (Pondicherry) SCs Order, 1964. The Constitution Scheduled Tribes (Uttar
Pradesh) Order, 1967. The Constitution (Goa, Daman & Diu) SCs Order, 1968. The Constitution
(Nagaland) STs Order, 1970. The Constitution (Sikkim) SCs Order, 1968.
2. Shri/Smt/Kumari.....and/or his/her family ordinarily reside(s) in
Village/Town..... of District.....of State/Union Territory of
3. Applicable in the case of SC/ST persons who have migrated from State/Union Territory
Administration to another State/Union Territory. The certificate is issued on the basis of the SC/
ST Certificate to Shri/Smt. father/mother of Shri/Smt/Kumari.....
of Village/Town..... in District/ Division..... of the State/
Union Territory who belongs to the Scheduled Caste/
Scheduled Tribe in the State/Union Territory issued by the (Name of the prescribed
authority) vide their No Dated.....

Signature

Designation (With Seal of Office)

Place (State/Union Territory)

Date

*Please delete the words which are not applicable. Please quote specific presidential order.

NOTE: The term ordinarily reside(s) used here has the same meaning as in section 20 of the representation
of the people's act, 1950.**List of Authorities Empowered to Issue SC/ST Certificates**

1. District Magistrate/Additional District Magistrate/Deputy Commissioner/Additional Deputy
Commissioner/ Deputy Collector/1st Class Stipendiary Magistrate/City Magistrate/Sub-divisional
Magistrate/Taluka Magistrate/ Executive Magistrate/Extra Assistant Commissioner not below the
rank of 1st class Stipendiary Magistrate.
2. Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
3. Revenue Officers, not below the rank of Tehsildar
4. Sub-divisional Officer of the area where the candidate and/or his family normally resides.
5. Administrator/Secretary to Administrator/Development Officer (Lakshadweep Islands).

ANNEXURE-VI

**FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES
(OBC APPLYING FOR ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIS),
UNDER THE GOVERNMENT OF INDIA**

- I This is to certify that Shri/Smt./Kum. _____ Son/Daughter of Shri/Smt. _____
_____ of Village/Town _____
District/Division _____ in the _____ State belongs
to the _____ Community which is recognized as a backward class under:
- i. Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No.186 dated 13/09/93.
 - ii. Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 Dated 20/10/94.
 - iii. Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 Dated 25/05/95.
 - iv. Resolution No. 12011/96/94-BCC dated 9/03/96.
 - v. Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 Dated 11/12/96.
 - vi. Resolution No. 12011/13/97-BCC dated 03/12/97.
 - vii. Resolution No. 12011/99/94-BCC dated 11/12/97.
 - viii. Resolution No. 12011/68/98-BCC dated 27/10/99.
 - ix. Resolution NO. 12011/88/98-BCC Dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
 - x. Resolution NO. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
 - xi. Resolution NO. 12011/44/99-BCC Dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.
 - xii. Resolution NO. 12015/9/2000-BCC dated 06/09/2001.
 - xiii. Resolution NO. 12011/1/2001-BCC dated 19/06/2003.
 - xiv. Resolution NO. 12011/4/2002-BCC dated 13/01/2004.
 - xv. Resolution NO. 12011/9/2004-BCC dated 16/01/2006
 - xvi. Published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.
 - xvii. Resolution NO. 12011/14/2004-BCC dated the 12th March, 2007, published in the Gazette of India- Extraordinary-Part I, Section O-I, No.67 dated 12th January, 2007.
- Shri/Smt./Kum. _____ and/or his family ordinarily reside(s) in the _____
_____ District/Division of _____ State. This is also to
certify that he/she does not belong to the persons/sections (Creamy Layer) mentioned in Column 3 of
the Schedule to the Government of India, Department of Personnel & Training O.M. No. 36012/22/93-
Estt.(SCT) Dated 08/09/93 which is modified vide OM No. 36033/3/2004 Estt.(Res.) dated 09/03/2004.

Dated:

DISTRICT MAGISTRATE/ DEPUTY COMMISSIONER, ETC.

SEAL

NOTE :

- (a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
 - (i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional Magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (Not Below The Rank Of Ist Class Stipendiary Magistrate).
 - (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
 - (iii) Revenue Officer not below the rank of Tehsildar' and
 - (iv) Sub-Divisional Officer of the area where the candidate and / or his family resides.

DECLARATION /UNDERTAKING - FOR OBC CANDIDATES ONLY

I, _____ Son/Daughter of Shri _____
resident of Village/Town/City _____ District _____ State hereby
declare that I belong to the _____ Community which is recognised as a Backward
Class by the Government of India for the purpose of reservation in services as per orders contained in
Department of Personnel and Training Office Memorandum No.36012/22/93- Estt. (SCT), dated 8/9/1993.
It is also declared that I do not belong to persons/Sections (Creamy Layer) mentioned in Column 3 of The
Schedule to the above referred Office Memorandum, Dated 8/9/1993, which is Modified vide Department
of Personnel and Training Office Memorandum No.36033/3/2004 Estt. (Res.) Dated 9/3/2004.

Signature of the Candidate

Place:

Date:

- Declaration/undertaking not signed by candidate will be rejected.
- False declaration will render the applicant liable for termination of registration at any time. Creamy Layer Definition OBC Creamy layer is defined comprehensively at <http://ncbc.nic.in/html/creamyayer.html> All candidates for the OBC reserved seats should make sure that they do not satisfy any of the creamy layer criteria as listed in the website. Some general exclusion for quick reference (no way comprehensive) are as follows :
 1. Any of the parents holds a constitutional position in Govt. of India.
 2. Any one of the parents is a class I officer.
 3. Both the parents are class II officers.
 4. Any one of the parents is employed in an equivalent rank to class I officer or both parents equivalent to class II officer in a public sector, insurance companies, banks, universities or in other organizations.
 5. Land holdings on irrigated land is 85% or more of the statutory ceiling area.
 6. Parents income is more than Rs. 4.5 lakhs per year.

GENERAL ADMINISTRATION

- | | |
|----------------------------------|---|
| 1. A.K. Srivastava, Ph.D. | Director |
| 2. R.R.B. Singh, Ph.D. | Joint Director (Academic) |
| 3. R.K. Malik, P.hD. | Joint Director (Reseach) |
| 4. Susanta Saha, MBA | Joint Director (Administration) & Registrar |
| 5. S.K. Kanawjia, Ph. D. | Academic Coordinator |
| 6. Sumit Arora, Ph.D. | Controller of Examinations |
| 7. S. George, MA, PGDLA | Comptroller |
| 8. Mithlesh Kumar, M.Sc., PGDCSA | Sr. Fin. & Acts. Officer |
| 9. Rekha Sharma, M.B.B.S. | Sr. Medical Officer |
| 10. Manoj Kumar, M.B.B.S. | Sr. Medical Officer |
| 11. Ashutosh, Ph.D. | Incharge Security |

HOSTELS

- | | |
|----------------------------------|-------------------------------------|
| 1. J.K. Kaushik, Ph.D. | Chief Hostel Warden |
| 2. Rubina Kumari Baithalu, Ph.D. | Hostel Warden (Kaveri Girls Hostel) |
| 3. A. Kumaresan, Ph.D. | Hostel Warden (Krishna Hostel) |
| 4. Rakesh Kumar, Ph.D. | Hostel Warden (Sutlej Hostel) |
| 5. Yogesh Khetra, M.Tech. | Hostel Warden (Brahmaputra Hostel) |
| 6. P. Narender Raju, Ph.D. | Hostel Warden (Narmada Hostel) |
| 7. Pradip V. Behare, Ph.D. | Hostel Warden (Alakhnanda Hostel) |

SRS, BANGALORE

- | | |
|--------------------------------|------------------------------|
| 1. B.Surendra Nath, Ph.D. | Head |
| 2. Menon Rekha Ravindra, M.Sc. | Incharge, Education Division |
| 3. V.R.V. Surinder Nath | Medical Officer |
| 4. T.R. Thivija Kumari | Sr. Technical Officer |
| 5. Shashikala | AAO |

SRS, KALYANI

- | | |
|---------------------------|------|
| 1. T.K. Datta, Ph.D. | Head |
| 2. Sukh Dev Singh Chauhan | AAO |

CONTACT PERSONS IN UNIVERSITY OFFICE

- | | |
|---------------------------|--------------------------|
| 1. Kamlesh Kumari | Under-graduate Programme |
| 2. Rekha Verma | Post-graduate Programme |
| 3. Shiv Kumar | Doctoral Programme |
| 4. Subhash Chander Dhiman | Financial Affairs |
| 5. Ilam Chand Sharma | Academic Affairs |

NDRI FACULTY**Dairy Microbiology Division**

Sunita Grover, Ph.D.	Head
S.K. Tomar, Ph.D.	Principal Scientist
Shilpa Vij, Ph.D.	Principal Scientist
Naresh Kumar, Ph.D.	Principal Scientist
Chand Ram, Ph.D.	Sr. Scientist
Surajit Mandal, Ph.D.	Scientist
Raghu H.V., M.Sc.	Scientist
Rashmi H.M., M.Sc.	Scientist
Pradip V. Behare, Ph.D.	Scientist
Diwas Pradhan, M.Sc.	Scientist

Dairy Engineering Division

A.K. Singh, Ph.D.	Head
P. Barnawal, Ph.D.	Sr. Scientist
P.S. Minz, M.Tech.	Scientist
S.K. Chaudhary, A.M.I.E.	CTO
Mr. Om Parkash Muhal	CTO
Mr. J.K. Dabas	STO
Mr. Sunil Kumar	STO
Mr. Pawan Kumar	STO
Mr. Parveen Kumar	STO
Ms. Manju Bala	STO

Dairy Chemistry Division

Bimlesh Mann, Ph.D.	Head
Raman Seth, Ph.D.	Principal Scientist
Sumit Arora, Ph.D.	Principal Scientist
Vivek Sharma, Ph.D.	Principal Scientist
Rajan Sharma, Ph.D.	Principal Scientist
Ms. Indumathi K.P., M.Sc.	Scientist
Ms. Priyanka Singh Rao	Scientist
Ms. Richa Singh, M.Sc.	Scientist
Mr. Prem Chand Singh, M.Sc.	ACTO

Animal Biochemistry Division

R.K. Sharma, Ph. D .	Head
Gautam Kaul, Ph.D.	Principal Scientist
Dheer Singh, Ph. D.	Principal Scientist
Rajeev Kapila, Ph. D.	Principal Scientist
Suman Kapila, Ph. D.	Principal Scientist
S.K. Sood, Ph. D.	Sr. Scientist
Suneel Kumar, Ph. D.	Sr. Scientist
Sunita Meena, Ph. D.	Scientist
Ravi Kant Saini, Ph.D.	ACTO

Dairy Technology Division

Latha Sabikhi, Ph.D.	Head
S.K. Kanawjia, Ph.D.	Principal Scientist
A.K. Singh, Ph.D.	Principal Scientist
Kaushik Khamrui, Ph.D.	Sr. Scientist
P. Narender Raju, Ph.D.	Scientist
G.S. Meena, M.Tech.	Scientist
Yogesh Khetra, M. Tech.	Scientist
Prateek Sharma, M. Tech.	Scientist
Shaik Abdul Hussain, Ph.D.	Scientist
Gunvantsinh Rathod, M.Tech.	Scientist
Neelam Upadhyay, Ph.D.	Scientist
Writdhama Prasad, M.Tech.	Scientist
Sanket Borad, M.Tech.	Scientist

Dairy Cattle Breeding Division

A.K. Chakravarty, Ph.D.	Head
A.K. Gupta, Ph.D.	Principal Scientist
Archana Verma, Ph.D.	Principal Scientist
I.D. Gupta, Ph.D.	Principal Scientist
Avtar Singh, Ph.D.	Principal Scientist
Dr. (Mrs.) Anupama Mukherjee	Sr. Scientist

Livestock Production & Management

Pawan Singh, Ph. D.	I/C LPM
P. S. Oberoi, Ph. D.	Principal Scientist
R. K. Mehla, Ph. D.	Principal Scientist
T. K. Mohanty, Ph. D.	Principal Scientist
M. L. Kamboj, Ph. D.	Principal Scientist
S. S. Lathwal, Ph. D.	Principal Scientist

Ramesh Chandra, Ph. D.	Sr. Scientist
A. Kumaresan, Ph. D.	Sr. Scientist
Mukesh Bhakat, Ph.D.	Sr. Scientist
Nishant Kumar, M.V.Sc.	Scientist
Rubina K. Baithalu, M.V.Sc.	Scientist
Shiv Kumar, M. Sc.	STO

Dairy Cattle Nutrition

A.K. Tyagi, Ph.D.	Head
Neelam Kewalramani Ph.D.	Principal Scientist
S.S. Kundu, Ph.D.	Principal Scientist
S.S. Thakur, Ph.D.	Principal Scientist
Madhu Mohini, Ph.D.	Principal Scientist
S.K. Tomar, Ph.D.	Principal Scientist
Veena Mani, Ph.D.	Principal Scientist
Chander Datt, Ph.D.	Principal Scientist
Nitin Tyagi, Ph.D.	Sr. Scientist
Goutam Mondal, Ph.D.	Sr. Scientist
Sachin Kumar, Ph.D.	Scientist
Karan Singh, M.Sc.	C.T.O.

Dairy Cattle Physiology

O.K. Hooda, Ph.D.	Head
Mahendra Singh, Ph.D.	Principal Scientist
Sujata Pandita, Ph.D.	Principal Scientist
Parveen Kumar, Ph.D.	Principal Scientist
Sohanvir Singh, Ph.D.	Principal Scientist
A.K. Dang, Ph.D.	Principal Scientist
A.K. Roy, Ph.D.	Principal Scientist
Anjali Aggarwal, Ph.D.	Principal Scientist
Manju Ashutosh, Ph.D.	Sr. Scientist
Ashutosh, Ph.D.	Sr. Scientist

Dairy Economics, Stat. & Management

Smita Sirohi, Ph.D.	Head
B. S. Chandel, Ph. D.	Principal Scientist
A.K. Chauhan, Ph. D.	Principal Scientist
Ravinder Malhotra, Ph. D.	Principal Scientist
A. K. Sharma, Ph.D.	Principal Scientist
Ajmer Singh, Ph.D.	Principal Scientist
Udita Chaudhary, M.Sc.	Scientist
Tara Chand, B.Sc.	ACTO

Dairy Extension

Khajan Singh, Ph.D.	Head
K.S. Kadian, Ph.D.	Principal Scientist

S.K. Jha, Ph.D.	Principal Scientist
Gopal Sankhala, Ph.D.	Principal Scientist
K. Ponnusamy, Ph.D.	Principal Scientist
Jancy Gupta, Ph.D.	Principal Scientist
B.S. Meena, Ph.D.	Sr. Scientist.
H.R. Meena, Ph.D.	Sr. Scientist
Ritu Chakravarty, M.Sc.	Senior Scientist
Senthil Kumar, R. Ph.D.	Scientist
Sanjit Maiti, Ph.D.	Scientist
Ms. Sanchita Maiti, Ph.D.	Scientist
Parvinder Sharma, Ph.D.	CTO

Animal Biotechnology Centre

R.S. Manik, Ph.D.	I/c ABTC
P. Palta, Ph.D.	Principal Scientist
S.K. Singla, Ph.D.	Principal Scientist
M.S. Chuahan, Ph.D.	Principal Scientist
T.K. Datta, Ph.D.	Principal Scientist
S. De, Ph.D.	Principal Scientist
J. K. Kaushik, Ph.D.	Principal Scientist
A.K. Mohanty, Ph.D.	Principal Scientist
D. Malakar, Ph.D.	Principal Scientist
Rakesh Kumar, Ph.D.	Sr. Scientist
M.K. Singh, Ph.D.	Scientist
Sudarshan Kumar, Ph.D.	Scientist

Computer Centre

A.K. Sharma, Ph.D., PGDC.	In-charge
Anirudha Kumar, M.Sc.(CS)	CTO
Naresh Dahiya, M.Tech. (CSE)	STO

Krishi Vigyan Kendra

Dalip K. Gosain, Ph.D.	Head
S.K. Gupta, Ph.D.	CTO
Satya Pal, M.V.Sc.	CTO
Rajeshwar Dayal, B.Sc.	ACTO
Kulvir Singh, M.Sc.	ACTO
Mohar Singh, M.Sc.	ACTO

Experimental Dairy

Hari Ram Gupta, M.Sc. (DT)	CTO
Lehri Singh, M.Sc.	ACTO
A.K. Kohli, Dip. (Mech. Engg.)	ACTO
P. Mandal, IDD	STO
Sanjeev Kumar, M.A. (Econ.)	STO

FR & MC

Ashutosh, Ph.D.	Incharge
Magan Singh, Ph.D.	Senior Sci.
Rakesh Kumar, Ph.D.	Senior Sci.
Satish Kumar, M.Sc. (Hort.)	CTO
Uttam Kumar, Ph.D.	CTO
Anil Kumar Dagar, M.Sc.	STO

Library Services

S.S. Thakur, Ph.D.	Incharge
B.P. Singh, M.Lib.	STO

Southern Regional Station, Bangalore

B.Surendra Nath, Ph.D.	Head
B. C. Ghosh, Ph.D.	Principal Scientist
B.V.Balasubramanyam, Ph.D.	Principal Scientist
P. K. Dixit, Ph.D.	Principal Scientist
K. P. Ramesha, Ph.D.	Principal Scientist
Bandla Srinivas, Ph.D.	Principal Scientist
K. Jayaraj Rao, Ph.D.	Principal Scientist
D. N. Das, Ph.D.	Principal Scientist
M. C. A. Devi, Ph.D.	Senior Scientist
S. Jeyakumar, Ph.D.	Senior Scientist
P. Heartwin Amaladhas, Ph.D.	Senior Scientist
Chitranayak, M.Tech.	Senior Scientist
M.Sivaram, Ph.D.	Senior Scientist
Menon Rekha Ravindra, Ph.D.	Senior Scientist
M. A.Kataktalware, Ph.D.	Senior Scientist
F. Magdaline E. Emerald, ME.	Scientist (SS)
Manjunatha. M., Ph.D.	Scientist
S. Varalakshmi, M.V.Sc.	Scientist
S. Subash, Ph.D.	Scientist
Dr A Manimaran, Ph D.	Scientist
Mr. H C Devraj, Ph D.	Scientist
Mr Satish Kumar M H, M.Tech.	Scientist
Dr. Lakshman Naik N, Ph.D.	Scientist
P. Muruganantham, M.Lib.	CTO

V.R.V.S.Naik, MBBS, MD	CTO
B. K. Rajashekaraiah, B. Sc.	ACTO
K.L. Sampath, B.Sc.	ACTO
Veeraju, B.E.	ACTO
Siddaramanna, Ph.D.	STO
Sri. R Keshavamurthy	STO
P.G. Satish, B.V.Sc.	STO
Sri. G P Patil, B Sc.	STO
T R Thivija Kumari, M.A,B.Ed	STO
Smt. K Geethakumari	STO
Sri. K.P.Lakshminarayanappa	STO
Sri. Meghanathan	STO
Smt. Janakshi	STO
Dr. K Ningaraju, Ph D	STO
Sri. M.S.Nagarajaiah	TO
Sri Sreekanta	TO
Smt. Vimala	TO

Eastern Regionl Station, Kalyani

Tapas Kumar Dutta, Ph.D.	Head
Manoj Kumar Ghosh, Ph.D.	Principal Scientist
Subrata Kumar Das, Ph.D.	Principal Scientist
Ashok Santra, Ph.D.	Principal Scientist
Champak Bhakat, Ph.D.	Principal Scientist
Ajoy Mandal, Ph.D.	Principal Scientist
Dilip Kumar Mondal, Ph.D.	Principal Scientist
Anupam Chatterjee, Ph.D.	Principal Scientist
Mohan Mondal, Ph.D.	Sr. Scientist
M. Karunakaran, Ph.D.	Sr. Scientist
Sanchita Garai, Ph.D.	Scientist
Saroj Rai, Ph.D.	Scientist
Asif Mohammad, Ph.D.	Scientist
Rajlaxmi Behera, M.V.Sc.	Scientist
Alokesh Goswami, M.Sc.	CTO
Amitava Ghosh, M.V.Sc.	CTO
Somnath Dutta, M.V.Sc.	CTO
Prabir Saha, M.Sc.	ACTO

Infrastructure at NDRI Karnal



Students accessing literature in National Library in Dairying



A view of Milk Parlour



Students during their in-plant training at Model Dairy Plant

Glimpses of Academic Activities



Prof. Kaptan Singh Solanki, Governor Haryana Presenting Degree Certificate



Planting of sap by Dr. S. Ayyappan, Secretary DARE & DG, ICAR



Dr. A.K. Srivastava distributing trophy to one of the winner in NDRI Sports Meet



Foreign Visitors

Glimpses of Academic Activities



Convocation- 2015



Dr. Gurbachan Singh presenting Merit Certificate



Dr. Sudaesan Memorial Oration



Dr. Arvind Kumar presenting Merit Certificate

NDRI Sports & Cultural Events



16. Give particulars of examinations passed from High School
(Note: Attach attested copies of all certificates and mark sheets)

Particulars	Name of Examination	
	High School OR Equivalent	10+2 OR Equivalent
a) University/Board		
b) Institute/College/School		
c) Nomenclature of Exam.		
d) Year of passing		
e) Duration of study in years		
f) Marks/OGPA obtained		
g) Maximum Marks/OGPA		
h) Percentage of Marks		
i) Subjects taken		

For admission at NDRI, all requirements for the qualifying/Examination must be completed on or before counselling.

17. Are you appearing in the final year examination Yes/No

If yes, please give the details

- a) Name of the Examination: _____
b) Likely date of completion : _____
c) Name of University/Board : _____

18. Declaration by the candidate: _____

I hereby solemnly and sincerely affirm that the statement made/information furnished by me with application form are true and correct.

Date _____

Signature of the Candidate

FORM - B

No. _____

Roll No. _____

**(To be used by the candidate who is not able to submit marks list for Qualifying Examination
at the time of submitting the application)**

1. If you have not been able to complete the column No. 16 of application, retain this Form - B with you and submit it to the Joint Director, National Dairy Research Institute (Deemed University), Karnal- 132 001 (Haryana) alongwith attested copies of marks list by at the time of counselling, failing the same your application will be rejected. **For admission at NDRI, Karnal your eligibility qualification in any case must be completed by 30.07. 2016.**
2. Please indicate the Roll No. on the top of your marks sheet attached with this Form.

1. Full Name (In block letters) : _____

2. Course B.Tech (Dairy Technology) : _____

17.	Details of the marks obtained in the Qualifying Examination	Year of passing	Marks/Division obtained	Maximum Marks/ OPGA	Percentage

Encl. As above

Place _____

Date _____

Signature of applicant _____

OFFICE COPY
(For office use only)

Sl. No. _____

Provisional

Roll No. _____

ADMIT CARD
(To be filled in by the candidate)

1. Name : _____
2. Course : B.Tech (Dairy Technology)
3. Date of Examination : 15th May, 2016 (10.00 AM to 12.30 PM)
4. Examination Centre (Code) : _____
5. Signature of applicant: _____

Affix attested recent
passport size
photograph here

Academic Coordinator, NDRI, Karnal

INSTRUCTIONS:

1. You must report at the examination centre atleast 30 minutes before the commencement of the examination.
2. Show your admit card to the Supervisory Staff otherwise you will not be allowed to appear in the exam.
3. In case you have brought Form-B personally, hand it over to the supervisory staff.
4. Use of unfair means will disqualify you from the examination.

CANDIDATE COPY

(To be retained by the candidate and produced at the time of examination)

Sl. No. _____

Provisional

Roll No. _____

ADMIT CARD
(To be filled in by the candidate)

1. Name : _____
2. Course : B.Tech (Dairy Technology)
3. Date of Examination : 15th May, 2016 (10.00 AM to 12.30 PM)
4. Examination Centre (Code) : _____
5. Signature of applicant: _____

Affix attested recent
passport size
photograph here

Academic Coordinator, NDRI, Karnal

INSTRUCTIONS:

1. You must report at the examination centre atleast 30 minutes before the commencement of the examination.
2. Show your admit card to the Supervisory Staff otherwise you will not be allowed to appear in the exam.
3. In case you have brought Form-B personally, hand it over to the supervisory staff.
4. Use of unfair means will disqualify you from the examination.
Please retain this copy with you and note down your roll number as displayed on the NDRI website.

IMPORTANT INSTRUCTIONS

1. Before submission of application form, candidates may ensure that
 - a. All the columns of application form have been duly filled in
 - b. Attested copies of all the certificates from High School or its equivalent have been attached (including annexure-V & VI).
 - c. Attested photographs are affixed at the appropriate place in the application form and the admit card.
 - d. Admit cards have been duly filled in.
2. Incomplete application is liable to be rejected.
3. NDRI will not responsible for any postal delay.
4. Admit cards will not be sent by post. Candidates have to retain their copy of admit card with them and note down the roll No. as displayed on NDRI website.
5. Candidates are advised to visit the NDRI website to note down the roll No. on their admit cards and bring the same with them to appear in the examination.



Presents



&

DEWANG MEHTA
Business School Awards

23rd October, 2013

Hosted & Endorsed By
Dewang Mehta
foundation trust

NDRI Bagged Education Leadership Award-2013

NDRI as a Deemed University and a centre of excellence in frontier areas of research in dairying has been ranked at number 68 of the 100 best universities and research institutes of the country (*Careers 360*, March 2013). The University offers B.Tech Dairy Technology and Masters' and Ph.D programmes in 13 disciplines. A diploma course i.e. Diploma in Dairy Technology has also been introduced at the Southern campus, Bangalore with effect from academic session 2013-14, with a view to bring in more employment opportunities for the youth. In order to promote e-learning, e-courses have been developed for B. Tech (Dairy Technology) degree programme and have been uploaded for online delivery to various dairy colleges/institutions. The university also admits international students and during the year 2012-13, a total no. of 15 international students was on roll in different programmes. The University encourages the spirit of competition and motivation for quality research work in students by offering 'Best Thesis Award' to Master's and Doctoral students. NDRI instituted 'Best Teacher Award' for UG and PG Teaching and 'Best Divisional Award' for academic achievements and innovations in teaching in the year 2012-13. The students are encouraged to participate in extra-curricular activities such as cultural events, sport, Essay Writing, Debate and Poster Making competitions, etc for their overall personality development. In addition, the institute hosted as many as 30 training programmes/workshops/seminars and symposia to promote scientific and academic interactions and exchange of new knowledge during the 2012-13.



DIRECTIONS TO CANDIDATES & IMPORTANT DATES

1. Sale of Information Bulletin by post 22.02.2016 – 09.03.2016
2. Sale of Information Bulletin at counter 22.02.2016 – 16.03.2016
3. Incomplete/unsigned/mutilated application form or form without photographs or with unclear photograph/ form having overwriting/without requisite fee amount or amount lesser than prescribed fee shall be summarily rejected and no correspondence in this regard shall be entertained. Column should not be left blank.
4. Request for change in any particulars in the application form shall not be entertained under any circumstances.
5. Admission of a candidate to the entrance examination is provisional subject to his/her being found otherwise eligible for admission to the course concerned.
6. Candidates are advised to retain at least three photographs same as pasted on the form for subsequent uses during counseling/admission.
7. A candidate is allowed to submit only one application form. If a candidate submits more than one application form, his/her candidature shall be cancelled. Candidates for reserved categories i.e. SC/ST/PH category must attach the certificate in the prescribed format.
8. Application form must be sent in original, duly completed in all respects. Application is to be dispatched through registered/speed post well in advance.
9. Last date for receipt of application forms 30.03.2016
10. Display of Roll Nos. On website 30.04.2016
11. Display of list of rejected application on website 30.04.2016
12. Institute shall not be responsible for any postal delay/loss in transit in respect of submission of application.
13. Candidates are advised to retain a photocopy of the application for their personal record. It may be used at any time in support of having submitted application and also retain a copy of post office receipt for dispatch through registered post or speed post.
14. Use or attempt to use unfair means of any kind for this examination will automatically lead to the cancellation of candidature besides legal action.
15. The records of the B.Tech (Dairy Technology) entrance examination shall be preserved for a period of six months only from the last date of counseling.
16. Date of entrance examination at all the three centres i.e., NDRI, Karnal, SRS, Bangalore and ERS, Kalyani. 15.05.2016
(10.00 A.M.-12.00 noon)
17. Declaration of merit list for qualified candidates & display on NDRI website. 3rd Week of June 2016
18. First Counseling for admission to B.Tech (Dairy Technology) Course(Reporting Time : 10AM) 13.07.2016
19. Last date for submitting form-B at the time of counseling
20. Date of registration for 2016-17 session 01.08.2016
21. Display of vacant B.Tech (Dairy Technology) seats on NDRI website 05.08.2016
22. Second counseling for wait listed candidates B.Tech (Dairy Technology) 12.08.2016
23. Third counseling for vacant seats B.Tech (Dairy Technology) 20.08.2016
24. Closing date for admissions 20.08.2016