

PROSPECTUS

2016-17

B.Tech (Dairy Technology) Programme



Lala Lajpat Rai
University of Veterinary and Animal Sciences, Hisar

(Established by Haryana Legislature Act No. 7 of 2010)
(www.luvas.edu.in)

IMPORTANT DATES

UNDER-GRADUATE (B.Tech - Dairy Technology) PROGRAMME

1. Date of availability of Admission Form on the website **06.05.2016 to 05.06.2016**
(www.luvas.edu.in)
2. Last date of receipt of online Admission Form:
 - i. Without late fee **29.05.2016**
 - ii. With late fee of Rs.500/- **05.06.2016**
3. Date of Entrance Test : **26.06.2016**
(10.00 A.M. to 01.00 P.M., Reporting Time 9.30 A.M.)
4. Declaration of result of Entrance Test : **Upto 04.07.2016**
4. Counselling and Registration : The details of counselling and registration schedule shall be displayed on the website (www.luvas.edu.in) **by last week of July 2016.**

Note: The admitted candidates have to deposit fees and other charges at the time of counselling.

Entrance Test, Application Processing and Counselling fees (non-refundable) :

Rs. 2000*/- for General Category

Rs. 500*/- for SC/BC/EBPGC Categories of Haryana State

*** In addition the candidate shall have to bear the actual Bank charges.**

Important : Candidates are advised to keep visiting university website regularly for latest updates.

TELEPHONES (Registrar Office) : 01662-256077, 256065, 289764, 270164 (Fax)

For any query related to admission, please contact the o/o Registrar,
Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004

During summer season (1st May to 31st July) the University offices shall remain open (without break) from 07.00 A.M. to 01.30 P.M.

IMPORTANT INSTRUCTIONS

1. Read the prospectus carefully before filling up the admission form.
2. The admission form will be available only on the website (**www.luvas.edu.in**) of the University. The candidates seeking admission are to apply through **online only**.
3. The duly completed admission form should be submitted through online on or before the last date.
4. No column of admission form should be left blank. If any column is not applicable, it should be marked as not applicable using abbreviation - **N.A.**
5. All entries, especially category for reservation benefits etc., should be properly filled in. **Once the admission form is submitted, any change in category is not permissible.**
6. Non-production of original documents and the self-attested copies at the time of counselling on his/her turn shall make a candidate ineligible for admission. No request in this respect will be entertained.
7. The candidate must bring at the time of counselling two unattested Pass Port size coloured photographs as uploaded on the admission form.
8. **Attendance in person at the time of counselling, medical examination and registration is compulsory.**
9. **Ragging** is banned with zero tolerance in the University. The University follows the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009 as well as the directions given by the Hon'ble Supreme Court in this regard. If any incidence of ragging comes to the notice of the University Authority, strict action will be taken as per rules (Annexure - XIII). Affidavits have to be submitted by the students and their parents/guardians on the day of registration (Annexure-XIV and XV).
10. The university has imposed a ban on the use of motorized vehicles in the hostels (Annexure-XII)

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CHAPTER-I

INTERPRETATION OF RULES AND REGULATIONS

In the event of any inconsistency in the rules framed for admission policy or in the event of any clarification with respect to the rules, the matter shall be referred to the competent authority and the interpretation of the rules/guidelines as mentioned in the prospectus shall be final. The Vice-Chancellor is also competent to eliminate any inconsistency and decide as to which provision shall take precedence over the others.

REMEDIES

If an applicant has any grievance or is of the opinion that in his/her case, the rules framed for admission have not been followed, he/she may submit an application outlining clearly the grievance/deviation in his/her opinion to the Vice-Chancellor. The Vice-Chancellor shall consider the application in the light of relevant rules and the decision of the Vice-Chancellor in the matter shall be final. All grievances/disputes even if not covered under guidelines/rules mentioned in the prospectus will be resolved by the competent authority.

DISCLAIMER

The statements made in this Prospectus and all other informations contained herein are believed to be correct. However, the competent authority reserves the right to make, at any time without notice, additions and alterations in the regulations, conditions governing admissions, the code of conduct of students, requirements for the degree, fees and any other information or statement/rule contained in this Prospectus. Competent authority may delete any programme of studies indicated in the Prospectus, at any time without notice or reduce or enhance the number of seats for reasons to be recorded in writing. No responsibility shall be accepted by the University for hardships or expenses incurred by the candidates or any other person for such changes, additions, omissions or errors, no matter how these were caused.

JURISDICTION

Jurisdiction for all disputes will be at Hisar.

CHAPTER-II

INTRODUCTION

MEANING AND SCOPE OF THE PROSPECTUS

It is a brief compilation of informations and not an exhaustive detail of all the regulations made by the competent authority in this regard. The provisions of the Prospectus are in the shape of guidelines which are available to the applicants seeking admission and do not in any manner limit the power of any competent authority in making additional regulations regarding the admission of the students in the University from time to time.

Admissions are made in accordance with the admission rules/guidelines. Since it is not possible to mention detailed procedure and guidelines in the Prospectus, admission rules are to be read with the instructions issued/to be issued from time to time with the approval of the Academic Council/competent authority.

COMPETENT AUTHORITY

The original jurisdiction to make regulations regarding the admission of the students in the University is vested in the Academic Council of Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar. The provisions as reproduced in the Prospectus or the guidelines as provided in this Prospectus shall not make precedence over the powers of the Academic Council as provided in Section 15 and the powers of the Vice-Chancellor as contained in Section 21 and any of the provisions of the Act, 2010 and the subsequent Statutes framed by the University from time to time.

The provisions or guidelines provided in the Prospectus are not final and are subject to modifications made by the competent authority under the Act & Statutes and if superseded by such decision by the competent authority, the latter will prevail and the information given in the Prospectus shall stand modified to that extent automatically.

THE UNIVERSITY

The University was created by Haryana Government (Haryana Act, No. 7/2010) on 7th April, 2010. The University has been catering to the needs of Haryana pertaining to livestock health and production since 1st December, 2010. The university has the following objectives :-

- (a) To impart education in different branches of veterinary sciences, animal sciences, fishery sciences and allied sciences as it may determine from time to time;
- (b) To further advancement in learning and research in veterinary sciences, animal sciences, fishery sciences and other allied sciences and to undertake extension of such specialised knowledge to the needy people;
- (c) To undertake study in marketing strategies of livestock and livestock products, conservation of livestock breeds and wild animals;

- (d) To liaise and establish vital linkage with the concerned departments of Animal Husbandry, Fisheries and Dairy Development of the State and Union Governments, National and International Research Institutes specialised in the field of veterinary sciences, animal sciences, fishery sciences and allied sciences with a view to keep abreast of the latest technology;
- (e) To raise level of Veterinary study to International Standards and
- (f) Such other objects, as the Board may determine, from time to time.

The University enforces the Minimum Standards of Dairy Science Degree Course (B.Tech-Dairy Technology) proposed by Indian Council of Agricultural Research (ICAR) from time to time.

UNIVERSITY CAMPUS

The main campus of the University is situated at Hisar in the CCS HAU Campus at a distance of about 172 KM North-West of Delhi on National Highway No.10 and is 2 KM from the railway station and 3 KM from the bus stand.

COLLEGE OF DAIRY SCIENCES AND TECHNOLOGY (CODS&T)

It is the constituent college of Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar opened from the academic session 2016-17 with the approval of Government and first college of Dairy Science and Technology in Haryana state. At present, there are 19 Dairy Technology colleges in the country with intake capacity of about 750 students for graduating in various streams of dairy science education. According to National Academy of Agricultural Research Management (NAARM), Hyderabad and Indian Agricultural Research Management (IARM), New Delhi, the demand of graduates in Dairy Science and Technology was 17,807 as of 2010. This demand is projected to grow to 29,920 by 2020 with an increase of 1200 graduates every year. In addition, there is a large demand of diploma /certificate holders and skilled personnel to manage the increasing procurement of milk in the organized sector.

This indicates huge gap in capacity of educational institutions offering Bachelor programme. The employment opportunities for these graduates exist primarily in dairy and food processing plants/companies, dairy equipments manufacturing units, quality control and analytical laboratories, government organizations related to dairying and food processing, teaching and research organizations, consultancy and entrepreneurship agencies, nationalized, private and developmental banks, production, processing and marketing wings of multinational dairy companies. It is, therefore, envisaged that more Dairy Technology Colleges will be needed in the country.

The college has recently appointed highly competent and experienced faculty. The college has 5 departments viz; Dairy Technology, Dairy Engineering, Dairy Chemistry, Dairy Microbiology and Dairy Business Management. It has excellent laboratory facilities and adequate infrastructure for the undergraduates. It caters to the needs of Haryana by carrying out teaching, research and extension education programmes.

LIBRARY AND INFORMATION SERVICES

This University is presently sharing the library and information services of CCSHAU, Hisar. The students and teachers can buy books from the Bookshop at discounts ranging from 10 to 35% against a market discount structure of 10-15%. Photocopying service is provided at nominal rates. Video conferencing facility, multimedia library, internet lab, a number of e-journals etc. are the other facilities available in the library.

DIRECTORATE OF STUDENTS' WELFARE

The Directorate is responsible for the welfare of students and helps in their counselling and placement, cultural and sports activities. Presently, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, with its own hostels, is sharing the students' welfare facilities of CCSHAU, Hisar.

i) GIRI CENTRE FOR SPORTS ACTIVITIES

The Giri Centre for students' sports activities is an outstanding feature being shared by the University. It has two indoor badminton courts, two indoor squash courts, hobby rooms, two multipurpose indoor gymnasiums. A synthetic track of international standard has also been provided in the athletic stadium.

ii) HOSTEL FACILITIES

Accommodation is provided in hostels where all the facilities such as gas connection, furniture, TV with cable connection, leading Newspapers and Magazines and solar water heating system are provided. All the hostels have EPABX phone facilities as well as incoming calls facilities. Two hostel wardens look after the management of each hostel. Every hostel has been provided with water coolers having Aqua-Guard for safe drinking water. The hostel messes are being run on co-operative basis.

iii) CO-CURRICULAR ACTIVITIES

The Directorate of Students' Welfare is also responsible for promotion of all the co-curricular activities such as Sports, NCC, Mountaineering, Graphic Arts, Literary, Music, Dance, Drama etc.

iv) STUDENTS' COUNSELLING AND PLACEMENT CELL

The Counselling and Placement Cell of the University provides information to the students on job opportunities, competitive examinations, scholarships/fellowships etc. It also conducts trainings/coaching classes for the entrance examinations, personality development and explores the job opportunities in the public and private sectors.

MEDICAL FACILITIES

There is a well-equipped 50 bed hospital in the campus. The hospital has physicians, gynaecologist, surgeon and dentist. Medical aid is provided round the clock to the students, staff and other trainees.

CHAPTER-III
RULES AND REGULATIONS GOVERNING
B.TECH (D.T.) ADMISSION

1. ELIGIBILITY AND ADMISSION FORM

- 1.1 The candidates under all categories (except SC category) must have passed 10+2 in each of the subjects of English, Physics, Chemistry and Mathematic and obtained 50% marks in aggregate of these subjects from a “recognized*/approved Board of School Education having equivalence by Council of Boards of School Education (COBSE), New Delhi/CBSE/ICSE and also by Board of School Education Haryana, Bhiwani”. ***As per Chief Secretary to Govt. of Haryana letter no. 22/129/2013-1GSIII dated 16.07.2014, the SC category candidates will be allowed a relaxation up to 5% of the requirement for General Category i.e. the SC candidates securing 47.5% marks in aggregate of the four subjects mentioned above will be eligible to apply for admission.***
- 1.2 The candidate must have attained or will attain the age of 17 years as on 31st December, 2016. Candidates attaining 17 years on 1st January 2017 or later will not be eligible. The upper age limit for candidates of all categories (**except SC and BC**) is 23 years as on 31st December, 2016. This upper age limit shall be relaxed by a period of 5 years for the candidates of SC and BC categories of Haryana State.
- 1.3 The list of Boards/Universities un-recognized/un-approved/not found equivalent by Board of School Education, Haryana /C.B.S.E./ICSE and Council of Boards of School Education, New Delhi is given at Annexure-I. Later on, if any other Board is not found equivalent for 10th and/or 10+2, the certificate issued by such boards will be invalid and the candidates possessing such certificates will not be eligible for the admission. Inadvertently, if any such candidate is admitted, his/her admission shall be cancelled at any time by the Registrar besides disciplinary action as per rules.
- 1.4 In case result has been declared publicly but the certificate of qualifying examination has not been issued by the concerned Board/University, such candidates shall have to produce a certificate (Annexure-X) from the Head of the Institute last attended.
- 1.5 The unattested coloured photograph (**taken on or after 01-01-2016**) to be uploaded on the admission form should depict the name of candidate and date of taking photo and it should be without cap and dark glasses. If the photograph is old or with cap or dark glasses or disfigured, the admission form shall be rejected.

(*) Recognized board refers to that it should be a member of Council of Boards of School Education, New Delhi and must be created by an Act of State Legislature or Parliament.

2. ENTRANCE TEST

- 2.1 All the candidates seeking admission to B.Tech (Dairy Technology) programme will have to appear in the Entrance Test (DST-2016) to be held at Hisar on **26-06-2016 (Sunday) at 10.00 A.M. The candidate must report by 9.30 A.M. at the allotted centre of the Entrance Test.**
- 2.2 The applicants who fulfil the minimum eligibility conditions or have appeared in 10+2 or equivalent examination with required subjects (even if result is yet to be declared) will be eligible for the entrance test.
- 2.3 Syllabus of the entrance test : It will be the syllabi of 10+1 & 10+2 of Board of School Education, Haryana /C.B.S.E., New Delhi (Annexure-XVI)
- 2.4 The subject-wise questions and marks will be as under:

Subjects	No. of Questions	Marks
Mathematics	50	50
Physics	50	50
Chemistry	50	50
Total	150	150

- Note**
1. Duration of test will be 10.00 A.M to 1.00 P.M.
 2. First 30 minutes are meant for completing pre-examination formalities and the next 2½ hours for answering the questions.
 3. Medium of test shall be English.
 4. The questions will be of multiple choice type.
 5. There will be no negative marking.

2.5 General instructions for the Entrance Test

- i) Entry to the test centre will not be allowed without a valid web generated Admit Card.
- ii) **Entry will not be allowed after 10:00 A.M. in any case.**
- iii) The admit cards to be downloaded by the candidates will be in duplicate, a copy of which will be retained at the centre of examination for counselling purpose. The formalities regarding pasting of photographs and attestation are to be completed by the candidates for both the admit cards before coming for the Entrance Test.
- iv) The candidates must bring with them **two blue or black ball pens only.** Electronic devices such as calculator, mobile phone etc. are not allowed in the examination centre. The OMR sheet of such a candidate who uses pencil or ball pen of any other colour shall not be evaluated and the candidate will be debarred from admission.
- v) Before using the OMR sheet, the candidate must carefully check the question booklet and OMR sheet and report the shortcomings, if any, to

the supervisory staff. **Once the candidate has written/filled in the OMR sheet, no replacement shall be allowed.**

- vi) Cuttings / overwritings / using erasing fluid / erasing tape etc. are not allowed on the OMR sheet. Such answers will not be considered.
 - vii) The OMR sheet should not be folded and no rough work is allowed to be done on the OMR sheet.
- 2.6 The result of the entrance test shall be displayed on the Notice Board of the department of Livestock Products Technology (LPT), LUVAS, Hisar and shall also be available on the University website: **www.luvas.edu.in**
- 2.7 There is no provision for re-checking or re-evaluation of answer sheets and no enquiry in this regard shall be entertained.
- 2.8 **Penalty for Use of unfair means in the Entrance Test**
- i) Candidate(s) found guilty for use of unfair means or misconduct (as defined below) shall be expelled from the entrance test by the Centre Superintendent/Registrar and his/her decision shall be final.
 - a) Creating disturbance of any kind during the entrance test or otherwise misbehaving in or around the entrance test centre or refusing to obey the Superintendent/Supervisor or changing his/her seat with any other candidate.
 - b) Having in his/her possession or accessible to him/her papers/books/notes which may possibly be of any assistance to him/her or found giving or receiving assistance or copying from any paper/book/notes/mobile etc. or allowing any other candidate to copy from his/her OMR sheet or found writing on a paper other than his/her question booklet or OMR sheet or using or attempting to use any other unfair means during the entrance test.
 - c) Tampering with his/her roll number on the OMR sheet.
 - d) Using cellular phone or any such device during the entrance test.
 - ii) Any candidate found impersonating for another candidate or found being impersonated by another candidate during the entrance test, apart from expulsion from the entrance test, shall be **debarred from seeking admission in this University forever** and a criminal case may be registered with the local police.
 - iii) If use of unfair means is detected at the time of evaluation of the OMR sheets/ counselling or thereafter or any complaint (anonymous/pseudo-anonymous) is received after admission and it is proved to be correct after an enquiry, the candidate shall be disqualified and admission cancelled as the case may be and debarred from seeking admission in this University.
- 2.9 **Qualifying marks in the Entrance Test**
- The minimum qualifying marks in the Entrance Test will be **40%** for all categories except SC category. For **SC category** the minimum qualifying marks will be **38%**. *As per Govt. of India Ministry of Human Resource Development,*

Department of Higher Education letter F.No.3-1/2012-NER dated 12th March, 2015, concession for the wards of Kashmiri Migrants for admission shall be given as prescribed i.e. Relaxation in cut-off percentage upto 10% subject to minimum eligibility requirement for general category.

2.10 Same marks in the Entrance Test or otherwise

In case of two or more candidates securing same marks in the entrance test, the merit would be decided on the basis of percentage of aggregate marks obtained in the subjects of English, Physics, Chemistry and Math of 10+2 examination. If still there is a tie then the candidate senior in age will be considered higher in the merit.

3. COUNSELLING-CUM-ADMISSION

General Rules:

3.1 The counselling will start with the General Category candidates followed by those of Reserved Categories.

3.2 The candidates of reserved categories who are able to find place in the general merit will be considered to have been admitted against the general category seats. Thereafter, seats will be filled up as per the reservation policy indicated in the rules. A candidate who has secured admission in the first counselling in the reserved category cannot be adjusted against general category seat though his/her turn comes in the subsequent counselling for the general category also. Seats lying vacant for any reserved category due to any reason and non-availability of eligible candidates in the 1st counselling will be filled up in the 2nd counselling on the basis of combined Merit list.

The candidate, before reporting to the Admission Committee, should see the latest position of the number of seats available on the notice board of the department of LPT, LUVAS, Hisar. The candidate should then present himself/herself before the Admission Committee.

3.3 Eligible candidates must report themselves on the date and time for counselling as per the counselling schedule uploaded on the University website : **www.luvas.edu.in** failing which they will have no claim for admission. **No separate letter in this connection shall be issued.**

3.4 **The candidates are required to bring all the original documents, two photos and the self-attested copies as per rule 3.12 of this chapter, at the time of counselling, failing which they shall be refused admission.** The original documents of the admitted candidates shall be retained by the Registrar's office and temporarily provided on a written request to the candidate for a week or up to one day before the 2nd counselling, whichever is earlier and if not returned back by the date committed, admission of that candidate shall stand automatically cancelled. These documents will be returned to the candidates after the completion of verification process.

- 3.5 The applications of those candidates who are not admitted even during the 2nd counselling/cut off date shall be destroyed after six months barring the court cases, if any.
- 3.6 The record of the entrance test/counselling shall be destroyed after six months of 2nd counselling/cut off date provided no court case is pending.
- 3.7 The eligible candidates, as per the merit list in the respective category, are to report for the counselling as per the counselling schedule uploaded on the university website **www.luvas.edu.in** in the **Lounge of department of LPT, LUVAS, Hisar** and further for verification and submission of documents to the Admission Committee in the **Seminar Room of department of LPT. The candidates admitted shall have to pay fees and other charges there and then otherwise the seat will be declared vacant.**

The Admission Committee will be as under :-

- | | |
|---------------------------------------------------------|----------|
| 1. Dean, College of Dairy Science & Technology | Chairman |
| 2. Registrar | Member |
| 3. One Professor to be nominated by the Vice-Chancellor | Member |
- 3.8 After deposition of the fees and other charges, the candidates for all the categories shall get themselves medically examined from the Senior Medical Officer at the University Hospital, Old Campus, CCS HAU, Hisar, submit medical certificate on the same day in the o/o Dean of the College and complete the registration on the due date/time. The fees deposited by the candidate, who is found medically unfit, shall be refunded and his/her admission shall automatically stand cancelled. The admission of those candidates, who fail to report for registration on the scheduled date and time, shall also stand cancelled and on the request of the candidate dues paid shall be refunded as per rules.
 - 3.9 **The completion of admission process involves the followings:**
 - i) Submission of all the original documents along with self-attested copies as given under the rule 3.12 and verification at the time of counselling.
 - ii) Deposition of fees and other charges.
 - iii) Medical Examination on the date of counselling.
 - iv) Registration on the due date and time.

Admission procedure will stand completed only after the registration.
 - 3.10 Any candidate who remains absent on his/her turn or refuses to accept admission on his/her turn shall lose his/her right of admission on that counselling. Seats remaining vacant due to any reason after the first counselling or fallen vacant subsequently due to any reason including non-registration by the candidates already admitted, shall be filled in the 2nd counselling i.e. cut off date for admission. **There will be no admission after the cut off date (2nd counselling) and the seat(s) remaining vacant shall be treated as cancelled.**

3.11 **Presence of the candidate** is must for the following events failing which the candidature / admission shall be treated as cancelled and the vacant seat will be filled up as per rules:

- i) At the time of counselling
- ii) Medical examination on the day of counselling.
- iii) Registration on the due date and time.

3.12 Original and self-attested copies of the following documents are required to be deposited with the Admission Committee at the time of counselling and **failure to produce any of the original documents shall make the candidate ineligible for the admission:**

- i) Matric Certificate with Date of Birth and Father's/Mother's name and 10+2 certificate from Board of School Education, Haryana/C.B.S.E/ICSE/ any other Board considered approved/equivalent as member by COBSE, New Delhi. If any certificate is found fake or not equivalent by any of the above Boards, admission will be cancelled and legal action initiated. In case result has been declared publicly but the certificate of qualifying examination has not been issued by the concerned Board/University, such candidates shall have to produce a certificate (Annexure-X) from the Head of the institute last attended.
- ii) Haryana Resident Certificate (Annexure-II), if required.
- iii) Character Certificate from the institute last attended.
- iv) The applicants who have passed the qualifying examination earlier and if there is a gap of more than one year from the date of declaration of result of the previous examination (other than the pursuit of studies in an institution/college) shall give a self undertaking regarding their non-enrolment in any institution (Annexure-XI). Similarly, the applicants who have passed the qualifying examination as private candidates will also have to submit undertaking in this regard.
- v) Relevant certificate if the benefit of reserved category is being claimed (Annexure-III/IV/VI/VII/VIII/IX as the case may be). The candidates claiming reservation under BC categories are also required to submit the affidavit as per Annexure-V.
- vi) The candidates claiming admission against the seats for Kashmiri Migrants are required to submit the Kashmiri Migrant Certificate issued by the competent authority.
- vii) The candidate must bring at the time of counselling two unattested colored Passport size photographs as uploaded on the admission form.

4. Rules and regulations for admission of Foreign Nationals (other than NRI)

- i) Admission of foreigners shall be decided on the basis of documents received through the Competent Authority.
- ii) The candidates from foreign countries will be admitted against the additional seats without appearing in the Entrance Test (DST-2016). Their admission

- will be regulated by the Indian Council of Agricultural Research, New Delhi or Government of India or Government of Haryana. They will be admitted only if they have valid student visa. They must be declared medically fit after examination by the Doctor authorized by the Indian Embassy in the country from where they wish to seek admission. They should have full medical insurance before their admission in the University.
- iii) The candidate must have studied in English medium or should submit documentary evidence of proficiency in English language.
 - iv) All the foreign students, other than those sponsored by the Govt. of India, with suitable fellowship such as scholarship under Colombo Plan, ITEC programme, General Cultural Scholarship and Cultural Technical Exchange, will be charged Institutional Economic Fee @ US \$6000* per year or US \$3000* per semester per student. The students coming for study/training as nominees of SAARC countries will be charged US \$3000* as Institutional Economic Fee per year or US \$300* per month per student in addition to usual charges for Indian residents. The Institutional Economic Fee will be charged for the study period. However, the Institutional Economic Fee will not be charged from the candidates admitted under Nepal Aid Fund, being Govt. of India nominees. However, they will have to deposit tuition fee and other usual charges for the period they remain enrolled in the programme.
- (*) The Institutional Economic fee shall be chargeable as prescribed by the GOI/ICAR.

- Note:**
- 1. Bank collection charges of Rs.800/- will be charged extra if the bank draft is not payable at any branch of a Scheduled Bank at Hisar.
 - 2. Other charges as applicable shall be charged in Indian currency.

5. A candidate aggrieved by any decision of the Admission Committee/Registrar may appeal within three days to the Vice-Chancellor, who will examine the application with reference to the rules and regulations. **Decision of the Vice-Chancellor, in the matter, shall be final.**

- Note:**
- 1. Short duration has been provided for appeal as a time bound schedule is to be followed to complete the admissions.
 - 2. Admission to B.Tech-DT programme of the University will be made by the Registrar. The Registrar shall accordingly register the students after payment of the prescribed fees and other charges. If it is found, at any time, that a candidate has obtained admission to this programme by misrepresentation/concealment of facts or that candidate has availed some benefit which was not due to him/her or if a candidate has been admitted due to an error, the Registrar may cancel his/her admission to this programme.
 - 3. Admission remains provisional. Documents submitted may be checked/got verified/re-verified from the concerned Board/University at any time during course of the study.

CHAPTER-IV

ADMISSION CAPACITY (B.Tech - Dairy Technology)

College of Dairy Science & Technology, LUVAS, HISAR

1. Tentative number of seats for **B.Tech (Dairy Technology)** programme at CODS&T, Hisar :

(i) For Haryana Residents	26	
(ii) ICAR Seats	04	
(iii) For wards of Kashmiri Migrants	01	
2. Foreign nominees of Govt. of Haryana, Govt. of India fellowship holders or Indian Council for Cultural Relations under Cultural Relations Exchange Programme from foreign countries may be admitted against additional seats provided they fulfill the minimum eligibility conditions.
3. Distribution of seats for admission against the seats to be filled in with the candidates having Haryana Resident Certificate will be according to the reservation policy of admission in Government/Government aided Educational/Technical/Professional institutions as per detail given below :

i) Scheduled Castes	20%	05 seats
ii) Backward Classes (A)	16%	04 seats
iii) Backward Classes (B)	11%	02 seats
iv) Economically Backward Persons in the General Caste Category	10%	02 seats
v) Persons with Disability (PwD)	03%	NIL
vi) General Category of Haryana residents	--	13 seats

Further, 3% horizontal reservation is also provided to Ex-servicemen/Freedom Fighters and their dependents by providing reservation within reservation of 1% of General category, 1% out of Scheduled Castes and 1% from Backward Classes categories for admissions to various Government and Government aided educational institutes located in Haryana. As far as block allocation in Block A and Block B of Backward Class categories is concerned, year wise rotational system will be adopted. For this purpose, as per letter No.22/10/2013-1GSIII Chandigarh, dated 28.02.2013 issued by the Government of Haryana, a roster will be maintained with effect from the academic year 2016-17. Fraction of each year shall be carried forward till total comes to one, then one seat shall be indicated in the Prospectus and admission on this seat will be made on the basis of inter-se merit of ESM and FF candidates.

- Note:**
1. The categorization of Block A and B of Scheduled Castes has been scrapped by the Haryana Govt. vide letter No. 22/8/2004-3GSIII dated 7.6.2007.
 2. Benefit of reservation of Backward class categories shall not apply to the wards and the applicants belonging to creamy layer as defined by the State Government from time to time.

3. In case, the candidates are not available in one particular block of BC, the seats shall be filled up from the candidates of other block of BC.

Criteria for admission against the seats reserved for Ex-servicemen:

Seats under this category may be filled in the following order:

- i) Wives/sons/daughters of military persons killed in operation.
- ii) Wives/sons/daughters of military persons permanently disabled in action.
- iii) Dependents of ESM.

Note: The above preference order shall be followed irrespective of merit in the Entrance Test.

DEFINITION OF PERSONS WITH DISABILITY

"Applicants having permanent disability of not less than 40%, provided the applicant is otherwise fit for a Dairy duty". Such applicant will have to bring a certificate (Annexure-VII) from the Chief Medical Officer of the District to which the candidate belongs.

A candidate shall not be allowed admission to B.Tech-D.T. degree course if he/she suffers disabilities in physical fitness as listed below :

- i) Disability of total body including disability of chest/spine more than 50%,
- ii) Disability of lower limb of more than 50%,
- iii) Disability of upper limb,
- iv) Visually handicapped candidates and those with hearing disability,
- v) Candidate with progressive diseases like Myopathies etc.,
- vi) Disabilities which otherwise would interfere in the performance of the duties of a Dairy Technologist.

The disability should be certified by a duly constituted and authorised Medical Board comprising of atleast three specialists out of which two should be of the speciality concerned and the candidate has to present him-self/her-self before the Medical Board. The last valid disability certificate of the candidate from such a Medical Board should not be more than three months old from the date of submitting his/her certificate for disabled candidates.

Note: But in the event of the quota reserved for persons with disability remaining unutilized due to non-availability of handicapped candidates, it may be offered to the Ex-servicemen and their wards, the dependents of freedom fighters and dependents of Operation Vijay to the extent of 1% each to these categories.

CHAPTER-V

Details of Fees and Financial Assistance (B.Tech - Dairy Technology) of CODS&T, LUVAS, Hisar

TO BE PAID AT THE TIME OF ADMISSION		
S.No.	Detail	Rs.
1	Univ. Admission fee	1500
2	College Security (refundable)	1350
3	Library Security (refundable)	2000
4	Identity Card	50
5	Library Card	50
6	Blazer, Tie and College Insignia charges	1700
7	Placement and Counselling fund (to be paid during final year only)	1350

ANNUAL CHARGES

1	College Admission fee	1100
2	College Development Fund (CDF) (except Foreign Nationals)	7500
3	Examination fee	5000
4	Library fund	250
5	Medical fund	200
6	Sports and Youth Welfare Fund	350
7	Laboratory fee	5000
8	Amritya Shiksha/ Personal Accident Policy	120
9	College Magazine Fund	100

SEMESTER-WISE CHARGES

1	Tuition fee*	10000
2	Amalgamated fund	1650
3	NCC fund	50
4	Student aid fund	100
5	Club charges (Badminton, tennis, music, fine art, photography, literary, debate etc.) per Club	200
6	Student Welfare fund	100
7	Red Cross fund	100

* No Tuition Fee for Persons with Physical Disability of either gender and female Haryana resident students except Kashmiri Migrant/ICAR nominees/Foreign Nationals.

NUMBER AND VALUE OF SCHOLARSHIPS/STIPENDS AT CODS&T, LUVAS, HISAR

The Scholarships/Stipends shall be awarded only to the candidates possessing Haryana Resident Certificate admitted against Haryana Resident seats on the basis of the merit list prepared (for admission) in accordance with the rules relating to award of Scholarships and Stipends by the University as given in University Calendar Vol. II of CCS HAU (applicable to LUVAS also).

The Scholarship/Stipend will not be awarded to a Haryana Resident of either sex admitted against Migration seat.

i) Scholarship for UG students

The scholarships/ stipends shall be awarded to the B.Tech - Dairy Technology students admitted against Haryana Resident seats only and their merit will be prepared on the basis of the merit of the Entrance Test. The University awards merit scholarship of Rs.800*/- per month to a student as prescribed for Haryana resident only. This scholarship is, however, offered to only 25% of those students who have been admitted against the Haryana Resident seats. The amount of scholarship will be Rs.1200*/- per month if the recipient is a girl student. If an occasion arises for re-award of scholarships, the number of scholarships is determined by the strength of the class at the time of re-award. After award of scholarships, when the fraction is half or more than half, it is to be taken as one for the purpose of award of scholarship.

* Subject to approval by the competent authority.

ii) ICAR Scholarship

The Indian Council of Agricultural Research awards National Talent Scholarship @ Rs.1000/- per month on merit for UG students only, based on the Entrance Test on All India basis conducted by ICAR, provided the candidate opts to pursue studies in any State Agricultural/Veterinary University located outside the state of his/her domicile and subject to other rules and regulations of ICAR.

iii) Financial assistance is also granted to the needy students out of Students Aid Fund for purchase of books or payment of fees etc.

The Prospectus provides only general informations about the programme offered. Detailed rules on all aspects are available in the University Calendar Vol. II of CCS HAU (applicable to LUVAS also). The instructions issued from time to time will also be applicable, wherever necessary.

ANNEXURE-I

De-recognized Boards/Universities

List of Not-recognized/De-recognized/Fake Boards

1. All India Board of Secondary Education, Delhi, Bhawan No. 700, Gali No. 17, Gopalpur Village (Timarpur), P.O. Azadpur, Delhi-110019
2. All India Board of Secondary Education, Gazipur.
3. Bhartiya Shiksha Parishad (U.P.) Open Vishwavidyalaya, Lucknow (U.P.).
4. Board of Adult Education & Training, Office 1, Aliganj (Kasturba Nagar), Kotla Mubarakpur, New Delhi- 110003
5. Board of Higher Secondary Education, Delhi
6. Bombay Hindi Vidyapeeth, Bombay.
7. Board of Secondary Education Madhya Bharat, Gwalior
8. Board of Secondary Education, Karkardooma, Delhi
9. Central Board of Higher Education, East Patel Nagar, New Delhi
10. Central Board of Higher Education, Uttam Nagar, New Delhi.
11. Council of Secondary Education, Mohali
12. Delhi Open School, Delhi
13. Delhi Vishwa-Vidyapeeth, 233, Tagore Park, Model Town, Delhi
14. Gandhi Hindi Vidyapeeth, Prayag, Allahabad (U.P.)
15. Hindi Sahitya Sammelan, Allahabad
16. Hindi Sahitya Sammelan, Prayag (Allahabad), U.P.
17. Indian Education Council of U.P., Lucknow (U.P.)
18. Jamia Islamia, Lucknow.
19. Kesarwani Vidyapith, Jabalpur, M.P.
20. Takshila Kendriya Vishwavidyala, Uttam Nagar, New Delhi
21. Uttar Madhyama and Purva Madhyama from Gurukul, Jhajjar.
22. Uttar Pradesh Vishwavidyala, Kosi Kalan, Mathura (U.P.)
23. Uttar Pradesh Vishwavidyapeeth, Kosi Kalan, Mathura (U.P.)
24. Varanaseya Sanskrit Vishwavidyalaya Varanasi (Uttar Pradesh)/Jagat Puri, Delhi.
25. Any other Board not-recognized/declared de-recognized/fake/not equivalent by COBSE, New Delhi/State Govt./CBSE/Haryana Board of School Education, Bhiwani.

List of De-Recognized Universities

1. Amritsar University, Amritsar (Punjab).
2. Arya University, Srinagar (Jammu & Kashmir).
3. Bible University, Ambur (North Arcot).
4. Blobe University of Science, Kumbarom.
5. Commercial University Ltd., Darya Ganj, Delhi.
6. D.D.B. Sanskrit University, Putur, Trichi, Tamil Nadu.
7. Eastern Orthodox University, Ambur (North Arcot).
8. Maharana Pratap Shiksha Niketan Vishwavidyalaya, Pratapgarh U.P.)
9. Maharishi Valmiki National University, Delhi
10. Mahila Gram Vidyapith/Vishwavidyalaya (Women University), Prayag, Allahabad (U.P).
11. Maithili University/Vishwavidyalaya, Darbhanga, Bihar.
12. National University of Electro Complex Homeopathy, Kanpur (U.P.)
13. National University, Nagpur
14. Netaja Subhash Chandra Bose University (Open University), Aligarh (U.P.)
15. Raja Arabia University, Nagpur.
16. Self Culture University, Kizhanattam, Kerala
17. Shrimati Mahadevi Verma Open University, Mughal Sarai (U.P.)
18. Sree Narayan Open University, Quilon (Kerala)
19. St. John's University, Kizhanattam, Kerala.
20. Testator Research University, Bodihaya, Ranur (Tamil Nadu).
21. United Nations University, Delhi.
22. University Newjerusalem, Kathuparamba, Cannore (Kerala).
23. Urdu University, Motia Park, Bhopal
24. Vocational University, Amritsar.
25. Vocational University, Delhi
26. Western University of Kapurthala
27. World Social work University, Perunguzhi (Kerala).
28. Any other University not recognized/declared de-recognized/fake by UGC/State Govt./AIU.

Note : Use the Annexure (s) to type the relevant proforma fresh on separate sheet for submission at the time of counselling

ANNEXURE-II

HARYANA RESIDENT CERTIFICATE

(For bonafide Residents of Haryana only)

Certified that Sh./Km./Smt.
son/daughter of Sh.....
Resident of
.....(complete address)
since..... is a bonafide resident of Haryana State in terms of
Chief Secretary, Haryana letter No.62/17/95-6 GSI dated 3.10.96 and letter No. 62/27/
2003-6 GSI dated 29.7.2003, under clause.....

No.....

(Signature of the competent authority)

Date:.....

Name.....

Place :

Designation

(with legible office seal)

- i) The competent authorities to issue Haryana Resident Certificate will be as per State Govt. letter No. 22/28/2003-3 G. S. III dated 30.01.2004.
- ii) The Haryana Resident applicants, who have passed their qualifying examination (10+2) alongwith matric examination from the recognized Boards/Institutes located in Haryana are not required to produce Haryana Resident Certificate.

ANNEXURE-III

(Haryana Government)



Certificate Sr. No. /Year / Teh.

SCHEDULED CASTE CERTIFICATE

This is to certify that Shri/Smt./Kumari
son/daughter of Shri resident of
village/ townTehsil..... District of the State/Union
Territory belongs to theCaste/Tribe
which is recognized as a Scheduled Caste/Scheduled Tribe under the Constitution
(Scheduled Castes) Order, 1950.

(Applicable in the case of person who have migrated from other State/Union Territory
Administration.)

This Certificate is issued on the basis of the Scheduled Caste Certificate issued by
.....vide letter Nodated to
Shri/Smt.Father/Mother of Shri/Smt./Kumari
of Village/Townof Tehsil of
Districtof the State/Union Territorywho
belongs to the caste which is recognized as Scheduled Caste/
Scheduled Tribe in the State/Union Territory.....

Shri/Smt./Kumariand/or his/her family ordinarily
reside (s) inVillage/Town of Tehsil
of Districtof the State/Union Territory

Signature with seal of Issuing Authority

Full Name

Designation

Address with

Telephone No. with code

Place

Date

- Issuing Authority : Tehsildar -cum-Executive Magistrate,
Naib Tehsildar-cum-Executive Magistrate
Head of Department in case of Government employees.
- Strike out the paragraph which is not applicable.
- For instructions refer to www.csharyana.gov.in

ANNEXURE-IV
(Haryana Government)



Certificate Sr. No. /Year / Teh.

BACKWARD CLASS CERTIFICATE

This is to certify that Shri/Smt./Kumari son/daughter of Shri resident of village/town Tehsil District of the State/Union Territory belongs to the Caste. This caste is mentioned in the State list of BC Block

**(Applicable in the case of person who have migrated from other State/
Union Territory Administration.)**

2. This Certificate is issued on the basis of the Backward Class Certificate issued by vide letter No dated to Shri/Smt.
Father/Mother of Shri/Smt./Kumari of Village/Town Tehsil District of State/Union Territory who belongs to the caste which is recognized as Backward Class in the State/Union Territory

(The applicant shall submit an affidavit that he/she falls/does not fall in creamy layer)

3. Shri/Smt./Kumari and/or his/her family ordinarily reside (s) in Village/Town Tehsil District of the State/Union Territory

4. This is to certify that he/she does not belong to the person/section (Creamy layer) as per State Govt. letter No. 170-SW(1)-95 dated 7-6-1995, No. 22/36/2000-3GS-III dated 09.08.2000 and No. 213-SW(1)-2010 dated 31.08.2010.

Signature with seal of Issuing Authority

Full Name

Designation

Place

Address with

Hisar

Telephone No. with code

- Issuing Authority : Tehsildar -cum-Executive Magistrate,
Naib Tehsildar-cum-Executive Magistrate
Head of Department in case of Government employees
- Strike out the paragraph which is not applicable.
- For instructions refer to www.csharyana.gov.in

ANNEXURE-V

AFFIDAVIT

(By the parents of the Backward Class category candidates)

I _____ father/mother of _____ resident of _____ Tehsil _____ District _____ seeking admission to _____ (name of programme) do hereby solemnly affirm & declare that I belong to _____ Caste, which is included in the list of Backward Classes Block A/ B approved by the Haryana Govt. I further declare and affirm that I and my wife / husband are not covered under the criteria fixed by Haryana Govt. letter No. 1170-SW (1)-95 dated 07.06.95 & No. 62/17/95-6 GSI dated 03.10.1996 and No. 22/36/2000 3GSIII dated 09.08.2000 and No. 59SW(1)-2013 dated 24.01.2013 for excluding socially advanced persons / sections (Creamy Layer) from Backward Classes.

I further undertake that in case the information contained in the above para is found false at any stage, the Competent Authority will be entitled to cancel the admission of my ward.

Date _____

Place _____

DEPONENT

VERIFICATION

Verified that the above statement is true and correct to the best of my knowledge and belief and nothing has been concealed therein.

Date _____

Place _____

DEPONENT

The Affidavit should be of the month of June, 2016 or later and attested by the Executive Magistrate.

ANNEXURE- VI

Haryana Government

Photo of
Applicant to be
attested by the
issuing authority

Certificate Sr. No. / Year..... / Teh

**CERTIFICATE FOR ECONOMICALLY BACKWARD PERSON IN THE
GENERAL CASTES CATEGORY**

This is to certify that Shri/Smt./Kumari _____
son/daughter of Shri _____ resident of _____
village/town _____ Tehsil _____ District of the _____
State/ Union Territory of _____ Caste belongs to the category of
Economically Backward Person in the General Castes Category.

2. This certificate has been issued in accordance with the Haryana Government notification No.60 SW(1)-2013 dated 23.1.2013 issued by Welfare of SC&BC Department and letter No.22/10/2013-1GS-III dated 28.2.2013 and other instructions issued in the matter from time to time.

Signature with seal of Issuing Authority

Full Name

Place

Designation

Dated

Address with Telephone No. with Code.....

* Issuing Authority: Tehsildar-cum-Executive Magistrate
Naib Tehsildar-cum-Executive Magistrate
Head of Department in case of Government employees.

* Strike out the paragraph which is not applicable.

* For instructions refer to www.csharyana.gov.in

ANNEXURE-VII

PERSONS WITH DIFFERENTLY ABLED CERTIFICATE

Certified that Mr./Ms.s/o/d/o Sh.....
resident of (place) District
appeared before the District Medical Board for medical check up. On medical examination,
he/she is found suffering from (name of diseased
condition) and thus he/she is a person with disability. His/Her percentage of handicap
is.....% (in figure).....(% in words).

Certified that the above named applicant is not suffering from any of the following
physical disabilities:

- a. Disability of total body including disability of chest/spine more than 50%,
- b. Disability of lower limb of more than 50%,
- c. Disability of upper limb,
- d. Visually handicapped and/or with hearing disability,
- e. Progressive diseases like Myopathies etc.,
- f. Disabilities which otherwise would interfere in the performance of the duties
of a Dairy Technologist.

Signature

Name

Place :.....

Dated :.....

Chief Medical Officer
of Distt. to which
the applicant belongs
(legible seal)

The attested copy of the medical report duly signed by the members of the medical
board is to be enclosed with this certificate, otherwise the certificate shall not be considered
valid. The candidate will have to undergo medical examination with medical board of the
university as well.

ANNEXURE-VIII
ESM CERTIFICATE

(Certificate to be furnished in support of claim for ESM and their Wards alongwith Retirement/Pension Book)

Certified that Shhusband/father of.....
(name of the applicant) is/was an Ex-serviceman and his wife/son/daughter is entitled for the benefit of reservation of seats for admission to programme in the LUVAS, Hisar. His detailed particulars are as under:

1. Name of Ex-Military person
2. Father's name
3. Whether (Give details)
 - i) Killed in operation during military service.
 - ii) Permanently disabled in action during military service.....
 - iii) Dependents of ESM

Place :.....

Signature

Name

Dated :.....

Secretary Zila Sainik Board to which ESM belongs
(Seal of the above authority)

ANNEXURE-IX

**CERTIFICATE TO BE FURNISHED BY CHILDREN /GRAND CHILDREN OF
FREEDOM FIGHTERS**

Certified that Sh/Smt.....(F.F.) son/daughter of Sh.....
resident of.....(complete
address), a Freedom Fighter of Haryana is/was father /mother /grandfather /grandmother
of Mr./Ms(Name of the applicant) son / daughter of Sh.
Resident of village / townPolice Station
Tehsil..... District.....(Haryana).

Signature

Name

Place :.....

Deputy Commissioner of concerned
district of Haryana
(with legible seal)

Dated :.....

ANNEXURE - X
CERTIFICATE BY HEAD OF THE INSTITUTION
(For non-availability of Detailed Marks Sheet)

It is certified that Mr./Ms.s/o/d/o Sh.....
 has studied 10+2 from
(complete name & address of school)
 which is a recognized institution and has passed the 10+2 examination with the subjects
 (Physics, Chemistry, Maths and English) under roll No conducted by
 the (Board) in (Month and Year) and has
 obtainedmarks out ofmaximum marks. It is also certified that
 the Detailed Marks Certificate of the student has not been issued by the Board till the
 date of issue of this certificate.

Subject-wise marks obtained are given as below:

Sr. No.	Subject	Marks Obtained	Maximum Marks
1.	Physics		
2.	Chemistry		
3.	Mathematics		
4.	English		

Permanent residential address of the candidate, as recorded in the school record, is as
 under:-

.....

Date :
 Place :

Signature of Principal
 (with Rubber stamp)

ANNEXURE-XI

SELF UNDERTAKING OF GAP IN STUDY PERIOD

I _____ son/daughter of _____
resident of _____

(full address to be given) do hereby solemnly declare and affirm as under:

1. That I have passed _____ examination* held in _____ from _____ (school/college).
2. That I have not joined any college/institution after passing _____ examination*.

OR

That I have joined the course _____ at _____
(Name of the institution) w.e.f. _____ and will leave the same
before joining the B.Tech-Dairy Technology programme.

* Indicate the latest examination passed.

3. That I have never been convicted for any offence by any court of law and there is no criminal proceeding pending against me during the above said gap period.

Signature of candidate

Note : Strike out whichever is not applicable.

Verification :

I, the above named candidate do hereby declare that the above contents are true and correct to the best of my knowledge and belief and nothing has been concealed therein.

Signature of candidate

Place :

Date :

ANNEXURE-XII
UNDERTAKING

I _____s/o/d/o Sh._____ have been admitted to _____ (programme) in the College of _____ in the academic year _____.

I undertake that I shall not use motorized vehicle while occupying accommodation in the hostel. In case I disobey the rules the university shall have the right to deprive me of hostel facility. I shall have no claim whatsoever.

Signature of the student

Name.

Father's Name

Date

I do undertake to the above statement in respect of my son/daughter/ward.

Signature of Father/Mother/Guardian

Name

Address

.....

Ph. No. (Res.)

(Mob.)

ANNEXURE-XIII

RULES REGARDING PREVENTION OF RAGGING

Title, Commencement and Applicability

These Rules shall be called the “Lala Lajpat Rai University of Veterinary and Animal Sciences Rules on Curbing the Menace of Ragging, 2013”. The University has adopted the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009 as well as the directions of the Hon’ble Apex Court.

They shall apply to all the students enrolled in certificate, diploma, UG and PG degree programmes or any other category of courses in which instruction/education is imparted by the Lala Lajpat Rai University of Veterinary and Animal Sciences and which includes its departments, constituent/affiliated colleges and all the premises, whether being academic, residential, playgrounds, canteen or other such premises of the University whether located within the campus or outside/outstations/Research Stations, and to all means of transportations of students, whether public or private, accessed by students for the pursuit of studies in this University.

Objectives

To prohibit any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student, or indulging in rowdy or indisciplined activities by any student or students which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in any fresher or any other student or asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student, with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student; and thereby, to eliminate ragging in all its forms from this University, by prohibiting it under these Rules, preventing its occurrence and punishing those who indulge in ragging as provided for in these Rules and the appropriate law in force.

What constitutes Ragging

Ragging constitutes one or more of any the following acts:

- i) any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student;
- ii) indulging in rowdy or indisciplined activities by any student or students which causes or is likely to cause annoyance, hardship, physical or psychological harm or to raise fear or apprehension thereof in any fresher or any other student;

- iii) asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student;
- iv) any act by a senior student that prevents, disrupts or disturbs the regular academic activity of any other student or a fresher;
- v) exploiting the services of a fresher or any other student for completing the academic tasks assigned to an individual or a group of students;
- vi) any act of financial extortion or forceful expenditure burden put on a fresher or any other student by students;
- vii) any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, stripping, forcing obscene and lewd acts, gestures, causing bodily harm or any other danger to health or person;
- viii) any act or abuse by spoken words, e-mails, post, public insults which would also include deriving perverted pleasure, vicarious or sadistic thrill from actively or passively participating in the discomfiture to fresher or any other student;
- ix) any act that affects the mental health and self-confidence of a fresher or any other student. With or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student.

Anti-Ragging Committee

To be proposed by the DSW and headed by the Registrar, and consisting of representatives of civil and police administration, local media, Non Government Organizations involved in youth activities, representative of faculty members, representatives of parents, representatives of students belonging to the fresher's category as well as senior students, non-teaching staff; and shall have a diverse mix of membership in terms of levels as well as gender. Action to be taken by the Deans/Principals of the Constituent Colleges on receipt of the recommendation of the Anti Ragging Squads or on receipt of any information concerning any reported incident of ragging, the Deans/Principals shall immediately determine if a case under the penal laws is made out and if so, either on his own or through a member of the Anti-Ragging Committee authorized by him in this behalf, proceed to file a First Information Report (FIR), within twenty four hours of receipt of such information or recommendation, with the police and local authorities, under the appropriate penal provisions relating to one or more of the followings, namely;

- (i) Abetment to ragging;
- (ii) Criminal conspiracy to rag;
- (iii) Unlawful assembly and rioting while ragging;
- (iv) Public nuisance created during ragging;
- (v) Violation of decency and morals through ragging;
- (vi) Injury to body, causing hurt or grievous hurt;
- (vii) Wrongful restraint;

- (viii) Wrongful confinement;
- (ix) Use of criminal force;
- (x) Assault as well as sexual offences or unnatural offences;
- (xi) Extortion;
- (xii) Criminal trespass;
- (xiii) Offences against property;
- (xiv) Criminal intimidation;
- (xv) Attempts to commit any or all of the above mentioned offences against the victim(s);
- (xvi) Threat to commit any or all of the above mentioned offences against the victim(s);
- (xvii) Physical or psychological humiliation;
- (xviii) All other offences following from the definition of “Ragging”.

Provided that the Deans/Principals shall forthwith report the occurrence of the incident of ragging to the Vice-Chancellor. Provided further that the Constituent College shall also continue with its own enquiry and other measures without waiting for action on the part of the police/local authorities and such remedial action shall be initiated and completed immediately and in no case later than a period of seven days of the reported occurrence of the incident of ragging.

Administrative action in the event of ragging

- 1 The Deans/Principals shall punish a student found guilty of ragging after following the procedure and in the manner prescribed hereinunder:
 - i) The Anti-Ragging Committee of the University shall take an appropriate decision, in regard to punishment or otherwise, depending on the facts of each incident of ragging and nature and gravity of the incident of ragging established in the recommendations of the Anti-Ragging Squad.
 - ii) The Anti-Ragging Committee may, depending on the nature and gravity of the guilt established by the Anti-Ragging Squad, recommend, to those found guilty, one or more of the following punishments, namely;
 - a. Suspension from attending classes and academic privileges.
 - b. Withholding/withdrawing scholarship/fellowship and other benefits.
 - c. Debarring from appearing in any test/examination or other evaluation process.
 - d. Withholding results.
 - e. Debarring from representing the institution in any regional, national or international meet, tournament, youth festival etc.
 - f. Suspension/expulsion from the hostel.
 - g. Cancellation of admission.
 - h. Rustication from the institution for period ranging from one to four semesters.
 - i. Expulsion from the institution and consequent debarring from admission to any other institution for a specified period. Provided that where the persons committing or abetting the act of ragging are not identified, the institution shall resort to collective punishment.

- 2 The appeal shall lie with the Vice-Chancellor within fortnight from the date of issue of orders.
- 3 Where in the opinion of the appointing authority, a lapse is attributable to any member of the faculty or staff of the University, in the matter of reporting or taking prompt action to prevent an incident of ragging or who display an apathetic or insensitive attitude towards complaints of ragging, or who fail to take timely steps, whether required under these Rules or otherwise, to prevent an incident or incidents of ragging, then such authority shall initiate departmental disciplinary action in accordance with the prescribed procedure of the institution, against such member of the faculty or staff.

SUSPENSION

- 1 After having regard to the nature and gravity of the incident of ragging, the Dean of the college concerned/Principal of the Constituent/Affiliated College with respect to the students is satisfied that it is necessary/desirable in the interest of the University to place under suspension, the student found involved in an act of indiscipline, he/she may place such student under suspension. Such suspension will not amount to any penalty having been imposed under the provisions under these rules.
- 2 Such suspension will debar a student from availing any facility of the University.

ANNEXURE-XIV
Affidavit by The Student

I, _____ S/o D/o Sh. _____, having been admitted to _____(Name of institution), have received a copy of the LUVAS Rules on Curbing the Menace of Ragging, 2009, (hereinafter called the “Rules”) carefully read and fully understood the provisions contained in the said Regulations.

2) I have, in particular perused clause 3 of the Rules and am aware as to what constitutes ragging.

3) I have, in particular, perused clause 7 and clause 8.1 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 Rules.

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 Rules.

5) I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 8.1 of the Rules, 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.

Deponent

Verification

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

Verified at _____ this _____ day of _____ month of _____ year.

Deponent

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

OATH COMMISSIONER

ANNEXURE-XV

Affidavit by the Parent/Guardian

I, _____ father/mother/guardian of _____, who has been admitted to _____ (name of institution), have received a copy of the LUVAS Rules on Curbing the Menace of Ragging, 2009, (hereinafter called the "Rules") carefully read and fully understood the provisions contained in the said Regulations.

2) I have, in particular perused clause 3 of the Rules and am aware as to what constitutes ragging.

3) I have, in particular, perused clause 7 and clause 8.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my son/daughter/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 behaviour or act that may be constituted as ragging under clause 3 of the Rules.

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 Rules.

5) I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 8.1 of the Rules, without prejudice to any other criminal action that may be taken against him/her 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, I am aware that the admission of my ward is liable to be cancelled.

Declared this _____ day of _____ month of _____ year.

Deponent

Name _____

Address _____

Telephone/Mobile No. _____

Verification

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

Verified at _____ this _____ day of _____ month of _____ year.

Deponent

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

OATH COMMISSIONER

ANNEXURE -XVI

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.

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

Keplar'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. Kirchoff'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 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 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, CaCO₃ 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: homogenous 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 (PCl₃, PCl₅) 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 K₂Cr₂O₇ and KMnO₄. 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: Biomolecules

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.

- 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 $\mathbb{R} \times \mathbb{R} \times \mathbb{R}$). 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. Codomain 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.
- 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:

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

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

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

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

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, circumcentre and orthocentre,

Solution of triangles. Heights and Distances.

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.

3. Linear Inequalities: Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables- graphically.
4. Permutations & Combinations : Fundamental principle of counting. Factorial n . $(n!)$. Permutations and combinations, derivation of formulae and their connections, simple applications.
5. 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.
6. 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} .
7. 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 3×3 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 t hat 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.

- 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.
- 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.
- 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.

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

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

- 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.
- 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

- 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.
- 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

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 contra positive.

Unit 8: Statistics & Probability

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.

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