INFORMATION BROCHURE

SKUAST-J Common Entrance Test-2023
(SKUAST-J CET-2023)
For
Admission to
Undergraduate and Postgraduate Programme

Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, Chatha, Jammu, J & K 180 009, INDIA

Officers of the University

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Vice Chancellor

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Dr. S.K. Gupta
Director Extension

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Dean Students Welfare

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Technology

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Agricultural Engineering

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I/c University Examination
Cell

Dr. R.K. Salgotra
Coordinator, School of
Biotechnology

Dr. Sanjay Guleria
Placement Cell

Dr. Bharat Bhushan
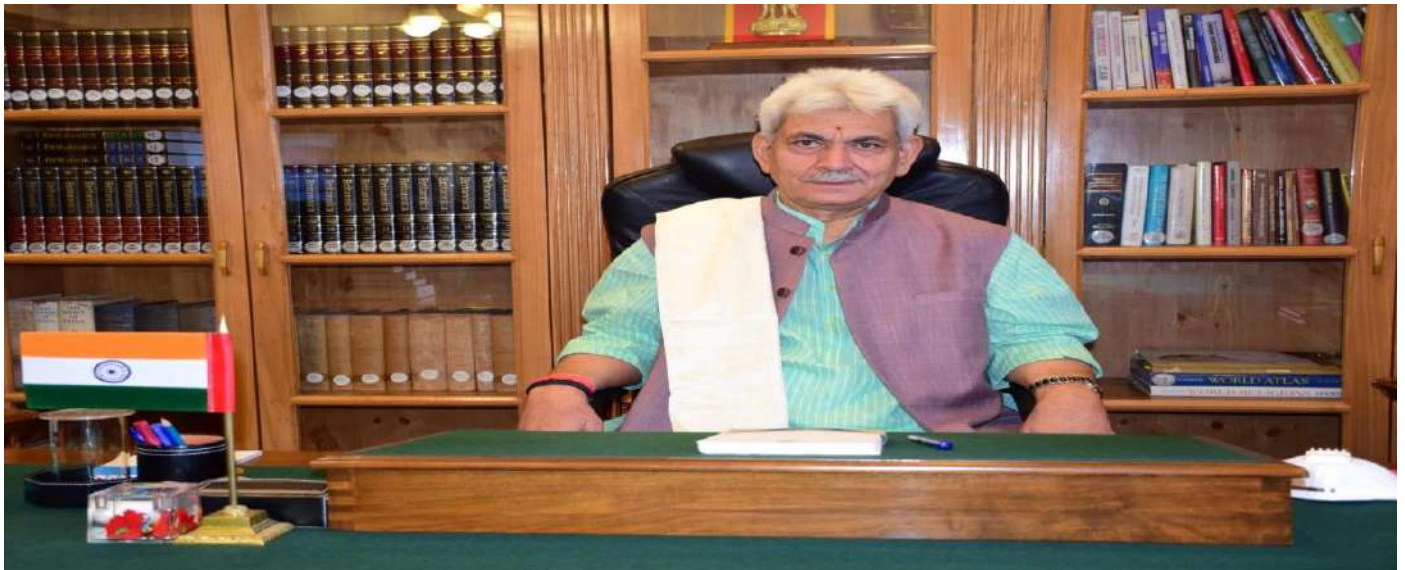**Joint Registrar**
(Academics)

Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu

Accredited by ICAR (Grade 'A')

Main Campus Chatha, Jammu (Jammu and Kashmir -180009

The Chancellor, SKUAST-Jammu

**Sh. Manoj Sinha, Hon'ble Chancellor and
Lieutenant Governor Union Territory of Jammu and Kashmir**

Vice- Chancellor , SKUAST-Jammu

UNIVERSITY MAIN CAMPUS CHATHA

Faculties at SKUAST-J	1. Faculty of Agriculture
	2. Faculty of Veterinary Sciences and Animal Husbandry
	3. Faculty of Basic Sciences
	4. Faculty of Dairy Technology
	5. Faculty of Agricultural Engineering
	6. Faculty of Horticulture & Forestry
Schools at SKUAST-J	1. School of Bio
	2. technology
Administrative Offices	1. Vice- Chancellor's Secretariat
	2. Directorate of Research
	3. Directorate of Extension
	4. Directorate of Education
	5. Directorate of Planning & Monitoring
	6. Registrar's Office
	7. Comptroller's Office
	8. Estates office
	9. Office of the Dean Students welfare

The Important features for inviting online applications are as under:	
Commencement of submission of online application forms	19/04/2023 from 10.00 AM (Wednesday)
Last date for submission of online application forms	18/05/2023 at 12:00 mid-night (Thursday)
Last date for submission of online application forms with late fee	23/05/2023 at 12:00 mid-night (Tuesday)
Opening of Correction window for submitted Online applications forms	24/05/2023 from 10:00 A.M to 27/05/2023 at 12:00 mid-night
Date of Common Entrance Test (CET) • **Masters programmes** • **Undergraduate programmes**	10-06-2023 (Saturday) 17-06-2023 (Saturday) } Tentative dates
Date of download of Admit card • **Under graduate Programmes** • **Masters Programmes**	**Shall be notified separately**
Test Centre	**Jammu**

Counselling:

Qualified candidates, as per merit, shall be called for counselling on a specified date and time for consideration of admission to various Undergraduate and Master's programmes. The counselling will continue till the last seat in each programme is filled-up. Merit list will be uploaded on the university website (**www.skuast.org).** The candidates are advised to see regularly the website of the University for counselling dates. No separate letter will be sent to the candidates. Counselling schedule will be notified in the newspapers as well as on the University website.

Start of Counselling:

Undergraduate Programmes	**Shall be notified separately**
Postgraduate Programmes	

Note: The tentative date of closing of admission year 2023-24 shall be notified separately

Application Fee for CET 2023 without late fee	**Rs. 1800/-**
Application Fee for CET 2023 with late fee	**Rs. 2800/-**

Venue for Counselling: Conference Hall, SKUAST-Jammu, Chatha.

Counselling shall start at 10.30 am sharp. The candidates shall be called for counselling and preliminary verification of certificates as per the rank obtained in CET. The category wise cut off rank for each counselling shall be notified separately and placed on University website from time to time till last counselling. The candidate is required to record his/her presence for counselling by signing on the designated register at the counselling hall. The aspirants shall be called for the counselling with descending rank one after the other and if a candidate called for counselling does not present him / herself before the committee his/her claim for any seat shall get forfeited. In case the candidate reports after his name is called for counselling but within stipulated time on the day of counselling the seat offered to that candidate shall be out of the unallocated seat available at the point of time when he/she reports before committee. A candidate reporting for counselling after 5.00 pm of the stipulated date shall not be allowed to mark their presence and shall not be entertained for counselling in any case. Accordingly candidates are advised to meet the deadline of cut off time on the day of counselling(s).

The candidates who are called for counselling must pay online counselling fee of Rs 1000/- before appearing on the scheduled date of counselling. The details for depositing online counselling fee shall be available on the university website www.skuast.org

Disclaimer

- The information contained in this brochure is of general nature for the candidates who aspire for admission in various programmes offered by the University. It is neither an exhaustive nor a legal document. The statements and all other information presented herein the brochure are believed to be correct at the time of publication. However, the University reserves the right to make additions or alterations in the regulations, conditions governing admissions, the code of conduct of students, requirements for the degree or the diploma, fees and any other information or statement/rule at any time without notice.

- University may delete any programme of studies at any time without notice or reduce or enhance the number of seats. No responsibility shall be accepted by the University for any hardship encountered or expenses incurred by the students or any other person for such changes, additions, omissions or errors, no matter how they are caused.

- The students are advised to refer to the Academic Regulations and other statutory/administrative provisions applicable on a particular point of time on various aspects, viz., system of education, residence in the University, Hostels, enrolment in NSS/NCC, award of scholarships, stipends, fellowships, medals, certificates of honour, and conduct in the premises of the University.

- The students should also note that the provisions of the Act, Statutes, Academic Regulations and other legal/administrative notifications, orders, instructions, and guidelines etc can be changed by the Competent Authorities at any time without assigning any reason or prior notice.

- Though every effort and care is taken to stick and follow the instructions and schedule of dates given hereunder, yet under certain compelling circumstances, if there has to be any deviation, University shall not be responsible for any inconvenience, losses or ill consequences arising there from.

- Fees and other charges once paid at the time of admission shall not be refunded except for the refundable component (security deposits).

- Admission to the University entails acceptance of all provisions given in the University Act, Statutes, Regulations and admission policy and changes that are made from time to time there in.

Jurisdiction
Jurisdiction for any disputes is at Jammu city.

Prelude

The Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-Jammu) has been established by the Government of Jammu and Kashmir on September 20, 1999 by promulgated vide SRO No 408 dated 20-09-1999 an amendment in the Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu and Kashmir Act of 1982 .

The prime mandate to the University is to produce competent human resource that can sustain and improvise the phenomenal growth of agriculture & allied sectors with an eye on maintenance of biodiversity and addressing the environmental concerns. Accordingly the faculty, students and scholars of the University are manning the frontier of life sciences, environmental sciences, food and energy system along with community and economic development. The University is also mandated to develop new, refine the existing and disseminate appropriate agricultural technologies to the stakeholders in the Union Territory in general and Jammu Division in particular. It also steers innovate, location specific and problem solving research in agriculture and allied sectors.

The University is having excellent facilities in terms of teaching, research, sports and other extracurricular activities. The University strives to provide congenial learning environment at graduate as well as at postgraduate levels to churn out the competent human resource in the realm of Agriculture Sciences, Veterinary Sciences, Animal Husbandry and Biotechnology, Food Science, Sericulture, Agricultural Engineering, Microbiology, MBA (Agri-business Management), Forestry and Basic Sciences. The University is having well qualified and trained faculty well known nationally /internationally and the quality education being imparted to the students by the University is fashioning them to get selected in the most coveted services like Scientists in the Universities and Research Organizations of repute both in and out of the Union Territory; Indian Administrative Services, Indian Forest Services, Kashmir Administrative Services, Public and Private Banking and others sectors besides, the primary sectors like Agriculture, Horticulture, Sheep & Animal husbandry.

ABOUT UNIVERSITY

Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu is a multi- campus University with its headquarter located at Chatha, Jammu at a distance of 8 km from Jammu-Pathankot NH-1A, 12 km from the Jammu Railway Station, 14 km from the General Bus Stand and 6 km from the Air Port, Jammu.

The University has extensive infrastructure within its jurisdiction and command. The main campus at Chatha is spread over 578 acres. The Faculty of Agriculture, Faculty of Basic Sciences, Faculty of Agricultural Engineering and Faculty of Horticulture & Forestry and a School of Biotechnology are located in it. Faculty of Veterinary Sciences & Animal Husbandry and Faculty of Dairy Technology at R.S.Pura has an extent of 84 acres. The total land possession with the University (including Research Stations/Sub-Stations and KVKs) is 1139.12 acres. There are 09 Research Station and Sub Stations. and nine KVKs in the University that are located in different agro-climatic zones of Jammu region for catering to location-specific needs of the farming community. University pursues high standard of location specific and problem-solving research through research projects funded by various central, state agencies & other funding agencies. At the faculty level the emphasis is on imparting of quality education by providing congenial atmosphere in the campus. The inception of high-tech infrastructure involving computer-based facilities, internet connectivity and modern administrative dispensation are vital characteristics of this University.

Faculty of Agriculture

Faculty of Veterinary Sciences & Animal Husbandry Agricultural

Faculty of Basic Sciences

Faculty of Dairy Technology

The University has highly structured infrastructure facilities in terms of buildings, laboratories, lecture rooms, instructional and research farms, modern instruments/equipments, farm machinery, transport and library facilities. It has distinguished and qualified faculty positioned at all the campuses and regional research stations. The faculty members and the post- graduate students of the University have won numerous national and international recognitions in the forms of awards, honours and fellowships awarded by the prestigious professional scientific bodies/societies.

Faculty of Agricultural Engineering

Faculty of Horticulture & Forestry

01 FACULTY OF AGRICULTURE

i.   Division of Agronomy
ii. Division of Agricultural Economics and ABM
iii. Division of Agricultural Extension Education
iv. Division of Plant Breeding and Genetics
v.   Division of Soil Science and Agril Chemistry
vi. Division of Plant Pathology
vii. Division of Sericulture
viii. Division of Entomology

02 FACULTY OF VETERINARY SCIENCES & ANIMAL HUSBANDRY

i.   Division of Veterinary Clinical Complex
ii.   Division of Veterinary Microbiology and Immunology
iii. Division of Livestock Production Management
iv.   Division of Veterinary Anatomy
v.   Division of Veterinary Physiology and Biochemistry
vi.   Division of Animal Nutrition
vii. Division of Veterinary Animal Husbandry Extension Education
viii. Division of Livestock Products Technology
ix.   Division of Veterinary Gynaecology and Obstetrics
x.   Division of Veterinary Surgery and Radiology

xi.   Division of Veterinary Medicine
xii.   Division of Pharmacology and Toxicology
xiii.   Division of Veterinary Parasitology
xiv.   Division of Veterinary Pathology
xv.   Division of Veterinary Public Health and Epidemiology
xvi.   Division of Animal Genetics and Breeding
xvii.   Division of Livestock Farm Complex
xviii. Division of Fisheries

03 FACULTY OF BASIC SCIENCES

i.   Division of Statistics and Computer Science
ii.   Division of Biochemistry
iii.   Division of Microbiology
iv.   Division of Plant Physiology

04 Faculty of Dairy Technology

i.   Division of Dairy Technology
ii.   Division of Dairy Engineering
iii.   Division of Dairy Chemistry
iv.   Division of Dairy Microbiology
v.   DIVISION OF DAIRY BUSINESS MANAGEMENT

05 Faculty of Agricultural Engineering

i.   Division of Farm Machinery and Power Engineering
ii.   Division of Soil and Water Engineering
iii.   Division of Processing and Food Engineering
iv.   Division of Basic Engineering & Sciences

06   Faculty of Horticulture & Forestry

i. Division of Fruit Science
ii. Division of Vegetable Science
iii. Division of Post-Harvest Management
iv. Division Of Floriculture and Landscaping
v. Division of Silviculture & Agroforestry
vi. Division of Forest Biology and Tree Improvement
vii. Division of Forest Products and Utilization

SCHOOL OF BIOTECHNOLOGY

The School of Biotechnology, an integral part of Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-J) came into existence in 2010 on self-sustainable basis with the sole aim to generate quality manpower with extensive knowledge, advanced technical know-how and outstanding academic potential in the subject. The School of Biotechnology is offering B.Tech (Biotechnology), M.Sc. and Ph.D. degree programmes to aspirants and admissions are made on the merit basis in all the degree programmes. The courses have been designed in such a way so as to provide ideal learning opportunities and hands-on practicals to the students to become qualified and skilled professionals in order to meet the needs of the growing industry. The course curriculum included courses from biotechnology and allied fields like plant, animal and microbial biotechnology. The course curriculum also includes nano-biotechnology and bioinformatics courses to keep the students abreast with latest technological know-how.

FACILITIES AT SKUAST-JAMMU

Facilities available for Sports/Cultural activities

It is instrumental in catering the need of regular games and sports activities for the students in all the Colleges. The university has a large playground and gymnasium, with the facilities of different games and sports. The students are encouraged to participate in state and inter-university competitions. Inter/intra-faculty sports competitions are also organized annually. The organization conducts programmes/competitions to identify best talents in literary and cultural activities. Students of SKUAST-Jammu have been regularly participating in All India Inter University Youth Festival – REVERIE being held at NDRI, Karnal since last many years and has bagged many awards.

Student Centre

Student Amenities

The Students' Welfare Section under the ambit of Directorate of Education of the University attends to the residential requirements, sports, cultural/co-curricular activities, NSS and medical care of the students. To make life comfortable for the students, common use facilities such as cafeteria, shopping centre, banks, post-office and transportation are available in the campus.

Hostel Facilities:

SKUAST-Jammu provides limited hostel accommodation to the students who are admitted in UG & PG courses. Separate hostel accommodation for boys and girls are available at Chatha and RS Pura campuses. There are five hostels (three for girls and two for boys). All the hostels have sufficient rooms with adequate furniture and fixture.

S.No	Name of the Hostel & Location	Warden
1.	LAKSHYA (Boys Hostel) R.S. Pura	Dr. Anil Kumar Pandey, Asstt. Professor, F.V.Sc & AH, R.S. Pura
2.	SANKALP (Boys Hostel) Chatha	Dr. Sudhakar Dwivedi, Professor, FoA, Chatha
3	UJALA (Girls Hostel) Chatha	Dr. Sehar Masud. Professor Fisheries, Chatha.
4	PRAGTI (Girls Hostel) R.S. Pura	Dr. Jafrin Ara Ahmed, Professor, F.V.Sc. & .A.H, R.S. Pura.
5.	UJALA (Girls Hostel) Chatha	Dr. Shilpa Sood,. Prof. F.V.Sc & AH, R.S. Pura

UJALA Girls Hostel

SANKALP Hostel (Boys) Chatha

Health care Facilities:

The medical facilities are provided to all the students through university health centres located at Chatha and R S Pura campus. The University Health Centre has the staff strength of a medical officer, lady doctor, two pharmacists, lab technician and staff nurse. The medical facilities including ambulance services at RS Pura and Chatha are available to all the students and residents round the clock. The facility of dental chair is also available.

Health Centre

Contact Details:

Dr. Anil Kumar Gupta, Medical Officer
Dr. Sushma Gupta, Medical Officer
SKUAST-J, Main Campus, Chatha – 180009

University Library

Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-Jammu) comprises of Central Library at Faculty of Agriculture (FOA), Main Campus, Chatha and Faculty Library at R.S. Pura. Both the libraries have open access and are housed in their respective modern and spacious buildings. The Central Library is a modern three storey glazed building having 5382 sq. meter area and has come up at the construction cost is Rs. 945 lacs. It was inaugurated by the then Chief Minister of J&K, Sh. Ghulam Nabi Azad, on 12th November, 2007. The Faculty Library at R.S. Pura, has an area of 2937 sq. meter area. In both the libraries the collection comprises of documents in the field of Agricultural, Veterinary and allied sciences. Online Library system consisting of network terminals for providing access to e-journals, e-books, internet and other e-reference resources are provided to the scientists, scholars, students and staff. Library functions and requirements have been kept in view while planning and equipping it. Both the libraries contribute and support the University in building an internationally top ranked academic and research driven institution by establishing a knowledge hub. Library services are witnessing radical changes world over and accessibility and instant retrieval of information is the main focus.

Central Library, Chatha

Contact Details:

Prof. A.K. Sharma, University Librarian
Central Library, FOA, Chatha
University Librarian Central Library, Main Campus, Chatha – 180009
Phone: 0191-2262037
Fax: 01912262037 , E-mail: clskuastj2@gmail.com

Examination Cell

The examination cell of the University was established in November 2012, to conduct and regulate the examinations smoothly, as well as to set up a confidential communication channel with external examiners.

THE UNIVERSITY EXAMINATION CELL CONDUCTS AND REGULATES

- SKUAST-J Common Entrance Test for admissions to various undergraduate and postgraduate degree programmes.
- The external end term examinations of Undergraduate programmes.
- The annual board examinations (theory and practical) of undergraduate programme in veterinary sciences.

- The End-term examinations of post-graduate programmes in agriculture, veterinary and allied sciences.
- The final examinations of Basic Agricultural and Horticultural Training Programmes

Contact Details:
Prof. Rajinder Peshin
In-Charge University Examination Cell, SKUAST-Jammu, Main Campus
Chatha-180009
Contact no. 9419226376 (M)
Email : examinationcellskuastj@gmail.com

ELIGIBILITY REQUIREMENTS:

- Candidates having a Domicile certificate of Union Territories of J&K and Ladakh are eligible for seeking admission to all the undergraduate and postgraduate programmes.

- For admission to undergraduate programme in Biotechnology, candidates from outside Union Territories of J&K and Ladakh can also apply.

- The candidates hailing from states/ UTs other than Jammu and Kashmir & Ladakh can only seek admission under Non-Resident Indian (NRI)/NRI sponsored quota for B.V.Sc. & A.H., B.Sc. (Hons) Agriculture, B.Sc. (Hons) Horticulture and B. Tech. (Agriculture Engineering) and against Self Financing, seats for Postgraduate courses kept under All India Basis category.

- Candidates will have to ensure that they fulfil the eligibility criteria and qualification(s) prescribed for admission to the relevant programme by the University which is specified below:

(i) For Undergraduate Programmes:

S.No	Programme	Eligibility
01.	B.Sc. (Hons) Agriculture	Candidates must have passed Higher Secondary Part II (12th or 10+2) or an equivalent examination from recognized board/examining body with PCB/PCM/PCBM/Agriculture (with Science subjects), besides English and having 50% marks in aggregate for OM, NRI/ NRI-sponsored category, and 40% for reserved categories. (P,C,B and M are Physics, Chemistry, Biology and Mathematics, respectively)
02.	B.Sc. (Hons.) Horticulture	
03.	B.V. Sc. & A.H.	Candidates must have passed Higher Secondary Part II (12th or 10+2) or an equivalent examination from recognized board/examining body with PCB subjects, besides English and having 50% marks in aggregate for OM, NRI/ NRI-sponsored category and 40% for reserved categories. (P, C, B are Physics, Chemistry, Biology respectively)

04.	B. Tech. Biotechnology	Candidates must have passed Higher Secondary Part II (12th or 10+2) or an equivalent examination from recognized board/examining body with PCB/ PCM /PCBM subjects, besides English and having 50% marks in aggregate. (P,C,B and M are Physics, Chemistry, Biology and Mathematics, respectively)
05.	B. Tech. Agricultural Engineering	Candidates must have passed Higher Secondary Part II (12th or 10+2) or an equivalent examination from recognized board/examining body with PCM besides English and having 50% marks in aggregate for OM, NRI /NRI-sponsored category, and 40% for reserved categories. (P,C, and M are Physics, Chemistry and Mathematics, respectively)
06.	B. Tech. Dairy Technology	

- Candidate must be 17 years old on or before 31.12.2023.

- Candidates who have appeared in Higher Secondary Part II (12th or 10+2) are also eligible to apply provided they produce their Higher Secondary Part II (12th or 10+2) mark sheet issued by competent examining body at the time of counselling and fulfil all the above prescribed requirements to be eligible for admission.

Note: The NRI candidates shall submit copy of their qualifying examination i.e. 10+2 qualification certificate /marks sheet duly verified and certified by Indian Embassy/High Commission in the country of their residence, stating that such examination is equivalent to university prescribed qualifying examination of Indian Boards/Universities.

(ii) For Post graduate Programmes

- Candidate not below 19 years of age, as on 31-12-2023, is eligible to appear in the examination. No relaxation is admissible regarding the minimum age limit.
- The candidate must have passed Bachelor degree examination securing Grade point average (OGPA) at least:
- ✓ **General category** :
  - a) *for Agriculture, Horticulture, Forestry and Agricultural Engineering:* 6.00/10.00 on ten point scale, 3.00/4.00 on four point scale. In other cases where grade points are not awarded and only marks are awarded, the candidate must have secured at least 60% marks.
  - b. *for Basic sciences stream* : 5.50/10.00 on ten point scale/ or at least 55% marks, where grade point is not awarded.
- ✓ **Reserved Categories**: 5.50/10.00 on ten point scale/ or at least 55% marks where grade point is not awarded.
- Candidate must have passed or due to appear at the final examination and likely to get awarded the degree on or before the counselling date as mentioned in this brochure.

The subject wise eligibility requirements are given below:

(a) M.Sc. (Agri.) & Allied Sciences:

S.No	M.Sc. Agriculture and Allied Sciences	Feeder Streams
1.	M.Sc. (Agri.) Agronomy	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture
2.	M.Sc. (Agri.) Genetics & Plant Breeding	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture /B.Sc. Life Sciences with Botany
3.	M.Sc. (Agri.) Agricultural Economics	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture/ B.Sc. Horticulture /B.Sc. Forestry
4.	M.Sc. (Agri.) Soil Science	
5.	M.Sc. (Agri.) Agricultural Extension Education	
6.	M.Sc. (Agri.) Entomology	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture /B.Sc. Horticulture/ B.Sc. Life Sciences with Zoology
7.	M.Sc. (Agri.) Plant Pathology	B.Sc. Agriculture / B.Sc. (Hons.) Agriculture /B.Sc. Horticulture/ B.Sc. Life Sciences with Botany
8.	M.Sc. (Agri.) Sericulture	B.Sc. Sericulture /B.Sc. Agriculture / B.Sc. (Hons.) Agriculture /B.Sc. Bio Sciences/ B.Sc. Forestry
9.	M.Sc. (Agri.) Seed Science & Technology	B.Sc. Agriculture/B. Tech. Agriculture Engineering /B. Sc. Biotechnology.
10.	M.Sc. (Agri.) Organic Farming	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture /B.Sc. Horticulture
11.	M.Sc. (Agri.) Molecular Biology & Biotechnology	Bachelor's degree in Biotechnology/ Agriculture / Life Sciences and Veterinary Sciences

(b) M.Sc. Horticulture

S.No	M.Sc. Agriculture and Allied Sciences	Feeder Streams
1.	M.Sc. (Horti.) Floriculture & Landscaping	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture/ B.Sc. Horticulture /B.Sc. Forestry
2.	M.Sc. (Horti.) Post Harvest Management	
3.	M.Sc. (Horti.) Fruit Science	
4.	M.Sc. (Horti.) Vegetable Sciences	

(c) M. Sc. Forestry

S.No	Programme / Discipline	Feeder Streams
1.	M.Sc. (Forestry) Silviculture and Agroforestry	B. Sc. Forestry/ B. Sc (Hons) Forestry

(d) M. Tech. (Agricultural Engineering)

S.No	Programme / Discipline	Feeder Streams
2.	M. Tech. Farm Machinery & Power Engineering	B. Tech. (Agricultural Engineering)
3.	M. Tech. Soil & Water conservation Engineering	

(e) M.Sc. Basic Sciences:

S.No	Programme / Discipline	Feeder Streams
1.	M.Sc. (Agri.) Biochemistry	B.Sc. Agriculture / B.Sc. (Hons.) Agriculture /B.Sc. Horticulture / B.Sc. Forestry /B.Sc. Bio-Sciences/Life Sciences with Chemistry/Biochemistry
2.	M.Sc. (Agri.) Plant Physiology	B. Sc. Agriculture / B.Sc. (Hons.) Agriculture / Horticulture /Forestry /Life Sciences/ Bio-sciences with Plant Physiology/ Botany
3.	M.Sc. (Agri.) Microbiology	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture /Life Sciences /Biotechnology/Microbiology
4.	M.Sc. (Agri.) Agricultural Statistics	B.Sc. Agriculture/ B.Sc. (Hons.) Agriculture /B.V.Sc. &A.H/B.Sc. Forestry/ B.Sc. Horticulture /B.Sc. (Stat/Math)

(f) M.F. Sc. Fisheries:

S.No	Programme / Discipline	Feeder Streams
1	M.F. Sc. Fisheries Resources Management	Bachelor of Fisheries Science

Admission guidelines for SKUAST-J in-service candidates and in-service State Govt. Nominee:

- For admission of SKUAST-J In-Service Employees' and In-service state Govt. Nominee, only those applications with the prior permission from their employer shall be entertained. All Such candidates have to appear in SKUAST-J CET-2023. The admission to such candidates shall be granted only after the submission of the "permission letter of their employer" at the time of counselling.
- The admission of the In-service J&K UT Government Nominees shall also be made on the basis of **SKUAST-CET 2023.**

Distribution of seats for academic session 2023-24.

(A.) Programme : B.Sc. (Hons.) Agriculture

Total Number of seats to be filled through Entrance Test: 126 + 6*=132
The breakup of seats are as under:

(a) Free (Normal Seats):

    1. Open Merit: 32

    2. Reserved Category: 28

(b) Self-Financing Seats:

    1. Domicile of UT of J&K & Ladakh: 19

    2. NRI/NRI Sponsored: 14

    3. Wards of SKUAST-J Employees: 03

(c) In-service Govt. Nominee: 04

(d) ICAR Quota: .26

*seats over and above reserved for economical weaker section.

The Admission to the seats under the ICAR quota will be made on the basic of list provided by ICAR through All India Counselling by ICAR after CUET-2023 conducted by NTA.

Seat Matrix B.Sc. (Hons.) Agriculture under open merit and reserved category seats (Normal Fee Seats):

Category	Codes	Number of seats
Open Merit (OM)	01	32
Scheduled Caste (SC)	02	5
Schedule Tribe	03	6
Weak and under privileged classes (Social Castes)	04	2
Resident of area adjoining Actual Line of Control /International Border(IB)	05	2
Resident of Backward Area (RBA)	06	6
Pahari Speaking People	07	3
Economically Weaker Section(EWSs)	08	6*
Physically Challenged persons	09	2(Horizontal)
Children of Defence Personnel	10	2
Candidates possessing outstanding in Sports	11	1
Children of Para military forces and State Police Personnel	12	1

 *seats over and above reserved for economical weaker section.

(B.) Programme: B.V. Sc. & A.H

Total Number of seats to be filled through Entrance Test: 84 +4* =88
The breakup of seats is as under:

(a) Free Seats:

    1. Open Merit: 23

    2. Reserved Category: 19

(b) Self Financing Seats:

    1. Domicile of UT of J&K & Ladakh: 18

    2. NRI/NRI Sponsored: 08

    3. Wards of SKUAST-J Employees: 03

(c) VCI Quota: .13

   The admission to the seats under the VCI quota will be made on the basis of list provided by the VCI through their counselling portal.

   *seats over and above reserved for economical weaker section.

Seat Matrix B.V. Sc. & A.H under open merit and reserved category seats (Normal Fee Seats):

Category	Codes	Number of seats
Open Merit (OM)	01	23
Scheduled Caste (SC)	02	3
Schedule Tribe	03	4
Weak and under privileged classes (Social Castes)	04	2
Resident of area adjoining Actual Line of Control /International Border (IB)	05	2
Resident of Backward Area (RBA)	06	4
Pahari Speaking People	07	2
Economically Weaker Section(EWSs)	08	4*
Physically Challenged persons	09	2(Horizontal)
Children of Defence Personnel	10	1
Candidates possessing outstanding in sports	11	1
Children of Para military forces and State Police Personnel	12	Nil

Note:

i. *seats over and above reserved for economical weaker section.

ii. Physically Challenged persons:

➤ A candidate shall not be allowed admission to Bachelor of Veterinary Science and Animal Husbandry degree course including those admitted under 15% reserved quota of Veterinary Council of India if he or she suffers the following disabilities, namely:-

a. disability of total body including disability of chestorspine more than 50%.

b. disability of lower limb of more than 50%.

c. disability of upper limb.

d. visually handicapped candidates and those with hearing disability.

e. candidates with progressive diseases like myopathies etc.

f. disabilities which otherwise would interfere in the performance of the duties of a veterinarian.

(C.) Programme B.Tech. Biotechnology

(Self-financing Programme exclusively)

Programme	Intake Capacity
B. Tech. Biotechnology	**50 (to be filled on All India basis)**

Note: *There is no reservation in any category for B. Tech. Biotechnology as the University is running the programme in self-finance mode.*

(D.) Programme : B.Sc. (Hons.) Horticulture

Total Number of seats to be filled through Entrance Test: 50+3*=53
The breakup of seats is as under:

(a) Free (Normal Seats):
    1. Open Merit: 14
    2. Reserved Category: 11
(b) Self-Financing Seats:
    1. Domicile of UT of J&K & Ladakh: 13
    2.Wards of SKUAST-J Employees: 02 .
(c) In-service Govt. Nominee: 04
(d) NRI/NRI Sponsored: 06
*seats over and above reserved for economical weaker section.

Seat Matrix B.Sc. (Hons.) Horticulture under open merit and reserved category seats (Normal Fee Seats):

Category	Codes	Number of seats
Open Merit (OM)	01	14
Scheduled Caste (SC)	02	02
Schedule Tribe	03	02
Weak and under privileged classes (Social Castes)	04	01
Resident of area adjoining Actual Line of Control /International Border(IB)	05	01
Resident of Backward Area (RBA)	06	02
Pahari Speaking People	07	01
Economically Weaker Section(EWSs)	08	03*
Physically Challenged persons	09	01(Horizontal)
Children of Defence Personnel	10	01
Candidates possessing outstanding in Sports	11	01
Children of Para military forces and State Police Personnel	12	Nil

seats over and above reserved for economical weaker section.

(E.) B .Tech (Agricultural Engineering)

Total Number of seats to be filled through Entrance Test: 35+2* =37
The breakups of seats are as under:

(a) Free (Normal Seats):
    1. Open Merit: 11
    2. Reserved Category: 09
(b) Self-Financing Seats:
    1. Domicile of UT of J&K & Ladakh: 10
    2. NRI/NRI Sponsored: 05
*seats over and above reserved for economical weaker section.

Seat Matrix B. Tech. (Agricultural Engineering) under open merit and reserved category seats (Normal Fee Seats):

Category	Codes	Number of seats
Open Merit (OM)	01	11
Scheduled Caste (SC)	02	02
Schedule Tribe	03	02
Weak and under privileged classes (Social Castes)	04	01
Resident of area adjoining Actual Line of Control /International Border(IB)	05	01
Resident of Backward Area (RBA)	06	02
Pahari Speaking People	07	01
Economically Weaker Section(EWSs)	08	02*
Physically Challenged persons	09	01(Horizontal)
Children of Defence Personnel	10	Nil
Candidates possessing outstanding in Sports	11	Nil
Children of Para military forces and State Police Personnel	12	Nil

seats over and above reserved for economical weaker section.

(F.) B .Tech (Dairy Technology)

Total Number of seats to be filled through Entrance Test: 20+1*=21
The breakups of seats are as under:
  (a) Free (Normal Seats):
    1. Open Merit: 08
    2. Reserved Category: 07
  (b) Self-Financing Seats:
    1. Domicile of UT of J&K & Ladakh: 05
    2. NRI/NRI Sponsored: -
  .*seat over and above reserved for economical weaker section.*

Seat Matrix B. Tech. (Dairy Technology under open merit and reserved category seats (Normal Fee Seats):

Category	Codes	Number of seats
Open Merit (OM)	01	08
Scheduled Caste (SC)	02	01
Schedule Tribe	03	01
Weak and under privileged classes (Social Castes)	04	01
Resident of area adjoining Actual Line of Control /International Border(IB)	05	01
Resident of Backward Area (RBA)	06	02
Pahari Speaking People	07	Nil
Economically Weaker Section(EWSs)	08	01*
Physically Challenged persons	09	Nil
Children of Defence Personnel	10	Nil
Candidates possessing outstanding in Sports	11	Nil
Children of Para military forces and State Police Personnel	12	01

seats over and above reserved for economical weaker section.

Note: One seat rotated among Schedule Tribe and Resident of Backward Area; One seat rotated among Weak

and under privileged classes (Social Caste), Resident of area adjoining Actual Line of Control /International Border (IB) and Pahari Speaking People and one seat among Children of Defence Personnel, Candidates possessing outstanding Proficiency in Sports and Children of Para military forces and State Police Personnel over the years.

Note:

1. The above reservation based on SO 127 dated 20/4/2021 amendments made in the Jammu and Kashmir Reservation Rules, 2005.

2. Seats falling vacant under any category shall be filled through NRI/NRI sponsored category candidates on the basis of merit in SKUAST-J –CET.

3. Candidates admitted under NRI/NRI sponsored category/Self-financing seats have to pay additional fee as per category & course that shall be over and above normal fee

(G.) POSTGRADUATE PROGRAMME

Seat Matrix under open merit and reserved category seats (% age):

Category	Codes	Percentage of Reservation
Open Merit (OM)	01	57%
Scheduled Caste (SC)	02	8%
Schedule Tribe	03	10%
Weak and under privileged classes (Social Castes)	04	4%
Resident of area adjoining Actual Line of Control /International Border(IB)	05	4%
Resident of Backward Area (RBA)	06	10%
Pahari Speaking People	07	4%
Economically Weaker Section(EWSs)	08	10%
Physically Challenged persons	09	NA
Candidate possessing outstanding proficiency in sports	11	2%
Children and Defence Personal and Paramilitary Forces and State Police Personal	13	2%

(a) Total no. of seats available for PG Programme in Agriculture & Allied Sciences 2023-24

S.No	Disciplines	Total Seats	Open Merit and reserved seats (Domicile of UT of J&K.)	Self Financing Seats*		ICAR Seats	Govt. Nominee
				UTs of J&K and Ladakh Domicile	All India Basis		
1.	M.Sc. (Agri.) Agronomy	11	01 OM + 01 EWS 01 ALC-IB 01 CDP 01 RBA 1 PSP	01	01	03	01
2.	M.Sc. (Agri.) Agricultural Economics	07	01 OM 01 SC	01	01	02	01

3.	M.Sc. (Agri.) Agricultural Extension Education	08	01 OM 01 ST 01 Social Caste	01	01	02	01
4.	M.Sc. (Agri.) Entomology	08	03 OM+ 01 EWS	01	01	02	01
5.	M.Sc. (Agri.) Genetics & Plant Breeding	08	02 OM 01 RBA	01	01	02	01
6.	M.Sc. (Agri.) Plant Pathology	08	01 SP 01 ST 01 S C	01	01	02	01
7.	M.Sc. (Agri.) Sericulture	05	02 OM + 01 EWS	01	Nil	01	01
8.	M.Sc. (Agri.) Soil Science	09	03 OM 01 RBA	01	01	02	01
9.	M.Sc. (Agri.) Seed Science and Technology	03	01 OM 01 PSP 01 ST	Nil	Nil	Nil	Nil
10.	M.Sc. (Agri.) Organic Farming	04	01 OM 01 SC 01 ALC-IB	01	Nil	Nil	Nil
11.	M.Sc. (Agri.) Molecular Biology & Biotechnology	06*	Nil	Nil	06	Nil	Nil
	Total	**77**	**31+3 EWS****	**09**	**13**	**16**	**08**

There is no reservation for M.Sc. (Agri.) Molecular Biology & Biotechnology as the University is running the programme in self-finance mode.

*** In addition to above 10% of seats over and above be filled from the candidates of Economically Weaker Sections (EWSs).**

(b). Total no. of seats available for M. S. Horticulture 2023-24

S.No.	Disciplines	Total Seats	Open Merit and reserved seats	Self Financing Seats*		ICAR Seats	Govt. Nominee
				UTs of J&K and Ladakh Domicile	All India Basis		
1.	M.Sc. (Horti.) Floriculture & Landscaping	05	01 OM 01 RBA	01	01	01	Nil
2.	M.Sc. (Horti.) Post Harvest Management	07	01 SC 01 OM	01	01	02	01

3.	M.Sc. (Horti.) Fruit Science	08	01 OM 01 ST	01	01	02	02
4.	M.Sc. (Horti.) (Vegetable Sciences)	08	03 OM + 01 EWS	01	01	02	01
5.	M.Sc. (Forestry) Silviculture and Agroforestry	04	01 ALC-IB 01 CDP	Nil	01	01	Nil
	Total	32	11 + 01 EWS**	04	05	08	04

***In addition to above 10% of seats over and above be filled from the candidates of Economically Weaker Sections (EWSs).*

(c). Total no. of seats available for M. Tech. Programme in Agricultural Engineering 2023-24

S.No.	Disciplines	Total Seats	Open Merit and reserved seats	Self Financing Seats*		ICAR Seats	Govt. Nominee
				UTs of J&K and Ladakh Domicile	All India Basis		
1.	M. Tech. Farm Machinery & Power Engineering.	04	01 OM 01 PSP	01	Nil	01	Nil
2.	M. Tech. Soil & Water Conservation Engineering	04	01 SC 01 ST	01	Nil	01	Nil
	Total	08	04	02	Nil	02	Nil

(d) Total no. of seats available for PG Programme in Basic Sciences 2023-24

S.No.	Disciplines	Total Seats	Open Merit and reserved seats	Self financing Seats*		ICAR seats
				UTs of J&K and Ladakh Domicile	All India Basis	
1.	M.Sc. (Agri.) Biochemistry	06	03 OM + 01 EWS	01	01	01
2.	M.Sc. (Agri.) Plant Physiology	04	01 OM 01 RBA	01	Nil	01
3.	M.Sc. (Agri.) Microbiology	04*	Nil	Nil	04	Nil
4.	M.Sc. (Agri.) Agricultural Statistics	04	01 OM 01 SP	01	01	Nil
	Total	18	07+ 01 EWS**	03	06	02

(e) Total no. of seats available for PG Programme in Fisheries Sciences 2023-24

S.No.	Disciplines	Total Seats	Open Merit and reserved seats	Self financing Seats*		ICAR Seats	Govt. Nominee
				UTs of J&K and Ladakh Domicile	All India Basis		
1.	Master of Fisheries Science (Fisheries Resource Management)	04	01 SC 01 OM + 01 EWS 01 Social Caste	01	Nil	Nil	Nil
	Total	**04**	**03+ 01 EWS****	**01**	**Nil**	**Nil**	**Nil**

There is no reservation for M.Sc. Microbiology as the University is running the programme in self-finance mode.

Note: * Seats falling vacant under any category shall be filled based on merit of CET under self-financing category.

*   The reservation to M.Sc. (Ag.)/M.Sc. (Horti.) / M. Tech. / M. Sc. Basic Sciences and M.F.Sc. programme shall be given as per SO 127 dated 28/04/2021 amendments in Jammu & Kashmir Reservation Act, 2005.

**   *In addition to above 10% of seats over and above be filled from the candidates of Economically Weaker Sections (EWSs) in each degree course.*

*   Candidates admitted under Self-financing seats have to deposit an additional fee as per category & course over and above normal fee.

(H.) AUTHORITIES COMPETENT FOR ISSUING RESERVED CATEGORY CERTIFICATES

S.No.	Category	Authorized Officers to issue certificates
1.	Residents of Backward Area (RBA)	Revenue Officer not below the rank of Tehsildar.
2.	Scheduled Castes (SC)	Revenue Officer not below the rank of Tehsildar
3.	Scheduled Tribe	Revenue Officer not below the rank of Tehsildar
4.	Residents of Area Adjoining Actual Line of Control / International Border (IB)	Revenue Officer not below the rank of Tehsildar
5.	Weak and under Privileged Classes (OSC)	Revenue Officer not below the rank of Tehsildar
6.	Pahari Speaking People	Revenue Officer not below the rank of Tehsildar
7.	Candidates possessing outstanding proficiency in sports (SP)	Secretary, J&K Sports Council
8.	Children of State Police Personnel/ Para-military Forces	DIG concerned / Commanding Officer of the unit not below the rank of DIG
9.	Economically Weaker Section(EWSs)	Revenue Officer not below the rank of Tehsildar
10.	Physically Challenged Person	Medical officer/ Medical Board

(I.)   GENERAL INFORMATION

i. The candidates seeking admission to SKUAST-J through common entrance test are advised to:

- go through this information brochure carefully and acquaint themselves with all the requirements, rules and regulations

- satisfy themselves about the eligibility criteria prescribed for appearing in the entrance examination.

- adhere strictly to the last date of submission of application form .

- Write complete address with Postal Index No, Telephone No., Mobile No, e-mail address, in the application form.

ii. Since University is neither an appellate authority nor an investigating agency, the complaints against credibility of certificates, including those of reserved categories, will not be entertained.

iii. No representation will be entertained for rejected forms and forms received after the prescribed cut-off date of receipt of the forms.

iv. The candidates fulfilling the eligibility criteria will have to appear in the SKUAST-J Common Entrance Test.

v. Permission of candidates to appear in '**SKUAST-J Common Entrance Test**' shall be provisional and subject to fulfilment of all prescribed eligibility requirements for admission to course(s) applied for on the date of first counselling.

vi. Syllabus for the entrance examination is appended in the Information Brochure along with sample questions.

vii. Ragging is banned in the University and any culprit shall be dealt and punished as per standing rules of the University.

viii. Some of the records shall be destroyed as under:

  a. The unused question booklets and OMR answer sheets shall be destroyed after three months of the declaration of the result.

  b. The used answer sheets shall be destroyed after one year of the declaration of the results.

  c. The counselling forms on which the candidates have indicated their choice at the time of counselling for admission to a particular course will be destroyed after one year.

(J.) INSTRUCTIONS
(i) Instruction for photographs

Candidates must ensure that:
- latest coloured photograph of passport size required to be uploaded must not have been taken before 31-03-2023 with a placard-indicating name of candidate (as in application form) and date of taking photograph.

- the name of the candidate and date of taking of the photograph must be clear and legible in the photograph.

(ii) INSTRUCTIONS/ PROCEDURE FOR FILLING UP ONLINE APPLICATION FORM

Candidates are advised to read carefully the following instructions before they fill in the admission form:-

1. Candidates have to log on to www.skuast.org to apply on line, and click the link **SKUAST-J Common Entrance Test (CET)-2023.**

2. **The candidates must, in their own interest, download the Information Brochure and understand eligibility criteria and other requirements before filling the Application Form.**

3. Application Form will be accepted **online ONLY** through University website www.skuast.org from 10.00 am of 19/04/2023 to 12:00 mid- night of 18-05-2023. However, duly filled application forms along with late fee of Rs. 1000/= will be accepted from 01:00: a.m. of 18-05-2023 to 12:00 mid- night of 23-05-2023.

4. The name should be filled in BLOCK LETTERS and should be the same as given in the certificate of the last examination passed.

5. Before applying online, candidate must ensure that he/she has scanned image of his photograph, signature and thumb-impression in JPEG/JPG format saved on the computer; uploading all of these is MANDATORY. Candidate should also have his/her payment mode details handy.

6. Open the first link, and fill in Part-I of the on-line application form (personal details).

7. While filling up the application form, the candidates shall prefer to write his own contact No(s), email Id for receiving updates from time to time.

8. After submission of personal details at Part-I, you will be directed to second link and fill-in the Part II of application form (academic details).

9. After submitting Part-II, programme will automatically take you to Part III for uploading of Photograph, signature and thumb impression. Upload images of photograph, signature, and thumb impression in JPEG format.

10. Once successfully done, candidate will be shown his/her complete details as recorded at part-IV of the form. Candidate is required to thoroughly check all the details.

11. At the bottom of the page candidate will have the options of printing application form. Take a print out for your record.

12. Candidate can make online payment through any Credit Card/Debit Card/Net Banking.

13. Take print out of confirmation page(s) of online application format and preserve it for future reference.

14. Admission form incomplete in any respect shall be rejected.

15. Seeking admission on the basis of false identity, misrepresentation by submitting false certificates/ documents or suppression of any material fact is unlawful and will result in cancellation of admission at any point of time when discovered.

16. The applicant can check the status of his/her fee online (www.skuast.org) one week after depositing the fee.

17. In case the status remains unpaid even after one week, candidate can approach University Examination Cell, SKUAST Jammu with the copy of their Confirmation page of online payment

18. For any assistance, please call **09419226376**. Before you call please make sure that you have read all the conditions properly and have gone through the Information Brochure in totality. All the topics/issues covered in the Information Brochure/instructions herewith will not be replied.

(K.) SELECTION PROCEDURE

- The selection and allotment of UG stream will be purely based on the rank secured in the SKUAST-J Common Entrance Test as per choice/preference indicated in the counselling form.

- The selection and allotment of PG stream will be purely based on the rank secured in the SKUAST-J Common Entrance Test and option made at the time of counselling.

- There will be a separate merit list for each category as listed in the Information Brochure.

- All the selections made by the University to undergraduate/postgraduate programmes shall be provisional till final verification of eligibility of the candidates by the University.

- The University shall have the power to review and reframe the provisional selection list in case of any bonafide error, lapse, mistake, fraud, misrepresentation or inadvertently crept injustice that might have occurred and comes to the notice of the university before completion of the selection process or after the selection/admission process. Mere figuring in the selection list does not confer any right to admission of the candidate to a university programme if he/she is otherwise not found to be eligible on detection of an error/ mistake/ fraud/ misrepresentation/ impersonation at any stage during the degree programme.

- The recommendation of the candidates by the selection committee for admission in the university in all the categories shall be subject to production of all the relevant certificates in original at the time of counselling.

(L.) ADMIT CARD

- Only for those candidates who fulfil the prescribed requirements for the programme, to which they have applied, will be issued the photo Admit Cards depicting roll no, name of Centre of Examination, date and timing of the test. The Admit Card can be downloaded from the University web site www.skuast.org.

- If Admit Card is not downloaded two days before the date of the Entrance Test, the candidate may contact the office of the University Examination Cell, SKUAST Jammu, Chatha, with a photograph same as uploaded on e-form for obtaining Duplicate Admit Card.

- No Admit Card, in any case will be issued on the day of the Entrance Test.

(M.) EVALUATION OF ANSWER SHEETS

i. The University shall make the answer key available on its website the following day of the examination.

ii. Objection regarding the key, if any, with authenticated proof from standard quality text books shall be entertained through email for two days up to $12'^{o}$ clock mid night after uploading of key.

iii. The updated key (with modifications, if any) shall be made available on the web site of the university.

iv. Where a question has ambiguous language, which conforms to more than one answer among the given options, all such answers, shall be considered correct and if a student had responded with any one of the correct answers he/she will be given a mark for that question.

v. Where none of the option given to a question is correct, the question will not be considered in evaluation and one mark will be given to all the candidates whether they have attempted this question or not.

vi. The evaluation of the answer sheet is carried out mechanically so there is no chance of any mistake. The result declared after the machine marking shall be final and not open to any manual check. The students must avoid making faint marks or ambiguous impressions or incomplete marks on the OMR Sheet, which may result in errors in evaluation. It is therefore in the interest of the candidates to fill up OMR answer sheet carefully as shown in this Information Brochure. The re-evaluation of the

answer sheets manually is not allowed, as that will infringe upon the rule of equality, which calls for a uniform treatment given to all the students.

(N.) DETERMINATION OF MERIT

o   The merit list for each course shall be prepared on the basis of inter-se merit and option/choice of the candidates in the SKUAST-J CET 2023 in the descending order for Open Merit Category and for each Reserved Category, separately.

o   Any subsequent vacancy caused by whatsoever reason in any category shall be filled from amongst the candidates of that particular category strictly according to merit. In the event of non-availability of eligible candidates from that reserved category, the relevant vacancies shall be filled through NRI/self-financing category as the case may be.

o   In case two or more candidates obtain equal marks, the inter-se merit of such candidates shall be determined as per the order of preference as under.

(a) Undergraduate
i. Candidates obtaining higher marks in Biology/or Mathematics as the case may be
ii. Candidates obtaining higher marks in Biology/or Mathematics and Chemistry in aggregate, if marks, in Biology/or Mathematics are equal.
iii. Candidates older in age to be preferred if points as per (i) and (ii) are equal.

(b) Postgraduate
(i) Candidates obtaining higher marks at graduation level
(ii) Candidates older in age to be preferred if points as per (i) are equal

(O.) DECLARATION OF RESULT

i.   No intimation, whatsoever about non-selection will be sent individually and no correspondence in this regard shall be entertained. The result will be posted at the University website, www.skuast.org

ii.   Candidates, whose result of the qualifying examination is not declared by the time of counselling, will not be considered for admission.

iii.   Selection of the candidates in all the categories shall be subject to production and verification of all the relevant certificates in original at the time of counselling.

(P.) COUNSELLING FOR ALLOTMENT OF DISCIPLINE

iv.   The candidates must come for counselling along with all documents in original, a set of attested copies of all documents, admit card issued by SKUAST-J and a counselling fee of Rs 1000/= (non-refundable).

v.   Candidate must mark his/her attendance by putting his/her full signature at the time of counselling.

vi.   The candidates called for counselling must produce one set of original and one set of attested copies of following certificates along with duly filled in option form.
   o   Domicile certificate
   o   Date of birth certificate (Matriculation certificate)
   o   Marks certificate of qualifying examination
   o   Category certificate, if applicable

vii.   **The NRI/NRI sponsored candidates shall have to submit proof of NRI status/sponsorship certificate at the time of counselling.**
   Any of the following documents shall be considered as a proof of NRI status:

   a) **NRI candidates**
   • Attested copy of Resident Card/Green Card/Employment Card issued by competent authority of the country of residence/the employer.
   • Attested copy of immigration/employment visa entry on the passport along with details of passport
   • Certificate of residence attested by the Indian Embassy/High Commission in that country where NRI is residing.

- Attested photocopy of the latest income tax assessment either in India or the country of employment filled in the status of Non Resident Indian.

b) NRI Sponsored candidates:

- Attested copy of Resident Card/Green Card/Employment Card issued by the employer, of sponsorer.
- Attested copy of immigration/employment visa entry on the passport along with details of passport of sponsorer
- Certificate of residence attested by the Indian Embassy/High Commission in that country where sponsorer NRI is residing.
- Attested photocopy of the latest income tax assessment either in India or the country of employment filed in the status of sponsor Non Resident Indian.

c) The NRI sponsored candidates shall have to produce Certificate of sponsorship in original from sponsor NRI on the prescribed format only duly attested by solicitor/legal authority in the country of NRIs residence on or before the date of counselling, failing which the candidate will forfeit the claim for admission. Photocopy or scanned copy or the certificates received through e-mail will not be considered (Prescribed format given as Annexure-A at the end of Information Brochure)

d) In addition to a, b & c above, the NRI/NRI sponsored candidates shall have to also submit the following documents in original at the time of counselling:

- Date of birth certificate (Matriculation certificate)
- Marks certificate of qualifying examination
- Migration Certificate
- Character Certificate

Note : No under process certificate shall be entertained at the time of counselling

v. After payment of prescribed admission fee, the candidates are advised for registration on scheduled date, failing which admission shall get automatically cancelled and fees deposited shall be forfeited.

vi. The candidate who has deposited the counselling fee once, need not to deposit fee in the succeeding counselling(s), in case such situation is warranted. However, candidate has to produce receipt of the same at the time of subsequent counselling.

vii. The candidates must appear in-person for counselling. However, in case of unavoidable reason a candidate is not able to appear in-person, he/she may send his/her authorized representative with authority letter duly signed by the candidate in original, admit card, admission fee and all other documents required for admission(refer item no. iii & iv)

viii. If a candidate or his/her representative fails to appear for counselling on the specified date but intends to appear on next date or any date during subsequent notified counselling schedule, he/she will be allowed for such counselling after depositing Rs. 1500/-(non refundable)as counselling fee. Further, the candidate shall be considered for seat in a course available at that point of time. Such candidates cannot stake any claim whatsoever on any other seat already allotted despite their merit.

ix. Candidates shall have to join the course after allotment of discipline within the specified time period. Where a candidate fails to join the course within the stipulated time period, his/her selection shall be cancelled and the seat so vacated shall be allotted to the next candidate in merit.

x. In case some seats remain vacant even after last round of counselling, the University shall call all candidates who have appeared in SKUAST-J CET for walk-in counselling and the selection shall be made on the merit of SKUAST-J CET among the candidates appearing in the walk-in counselling.

xi. If a candidate or his authorized representative fails to appear for counselling during the entire notified period of counselling schedule, he/she will forfeit all claims for admission.

(Q.) FEE STRUCTURE FOR UNDERGRADUATE/POSTGRADUATE PROGRAMMES

(a) At the time of 1st admission

S.No	Particulars	Undergraduate Programmes Rs.	Postgraduate Programmes Rs.
1.	Admission fee	6250	7500
2.	University Registration fee	3750	6250
3.	Caution/Security Money for Library (refundable)	3750	3750
4.	College Laboratory Development charges	625	1250
5.	College Laboratory Development charges	625	1000
6.	Tuition fee	2500	5000
7.	Examination fee	1250	1250
8.	Extra Curricular Activities fee	625	625
9.	Medical Examination fee	250	250
10.	Magazine fund (per annum)	250	250
11.	Identity card	125	125
12.	Placement and counselling fund	125	0
13.	Educational Tour	3750	0
14.	Alumni Fee	500	500
	Total (A)	**24375**	**27750**
	Hostel Charges		
1.	Hostel Charges (Room rent) **Per Semester**		
i.	Single seater	4375	4375
ii.	Dormitory	3125	3125
iii.	NRI Rooms	6250	6250
2.	Hostel Security (refundable) for fresh admission	5000	5000
3.	Mess security in case of Hostel inmates for fresh admission (refundable)	5000	5000
4.	Hostel maintenance fund per Semester	625	625
5.	Utensils crockery breakage fund	190	190
6.	Common Room Fund (Hostellers)	375	375
7.	Electricity charges Per semester	2500	2500
8.	Generator charges Per Semester per Students	3750	3750
Total B			
i.	Single seater	**21815**	**21815**
ii.	Dormitory	**20565**	**20565**
iii.	NRI Rooms	**23690**	**23690**
	G Total (A+B) =		
i.	Single Seater	**46190**	**49565**
ii.	Dormitory	**44940**	**48315**
iii.	NRI Rooms	**48065**	**51440**

(b) Recurring Semester Fee (per semester)

S.No	Particulars	Undergraduate Programmes Rs.	Postgraduate Programmes Rs.
(A)			
1.	Semester Registration fee	625	1000
2.	Tuition fee	3750	7500
3.	Examination fee	1250	1250
4.	Extra Curricular Activities fee	1250	1500
5.	Medical Examination fund/fee	250	250
6.	Magazine fund (per semester)	125	125
7.	Amalgamated fund	750	750
8.	Library Fee	375	375
9.	Infrastructure development fund	625	625
10.	Student Welfare Fee	625	625
11.	Water Charges	125	125
	Total (A)	**9750**	**14125**
(B)	Hostel Charges (Room rent)		
1.	Single Seater	4375	4375
	Dormitory	3125	3125
	NRI Rooms	6250	6250
2.	Hostel maintenance fund	625	625
3.	Utensils crockery breakage fund	190	190
4.	Common Room Fund	375	375
5.	Electricity charges	2500	2500
6.	Generator charges	3750	3750
	Total (B)		
	Single seater	**11815**	**11815**
	Dormitory	**10565**	**10565**
	NRI Rooms	**13690**	**13690**
	G. Total (A+B)		
	Single Seater	21565	25940
	Dormitory	20315	24690
	NRI Rooms	23440	27815
(C).	***OPTIONAL CHARGES (Per Semester) (Rs.)**		
1.	Refrigerator in room	1000	1000
2.	Air Cooler	3125	3125
3.	Electric Blower	3125	3125
4.	Air Conditioner	15000	15000

University shall not provide any of the above-mentioned appliances.

Hostel Accommodation:

Limited hostel facilities are available. The University will provide accommodation to the extent possible. Students cannot claim hostel accommodation as a matter of right on their admission to PG programme. University reserves the right to provide/deny hostel accommodation to the student.

(R.) Fee structure for self-financing seats in addition to normal fees

a) Fee structure for self-financing seats in addition to normal fees other than B.V.Sc & A.H (per semester)

S. No.	Programme	Category	Fees (Rs.)
1.	B.Sc. (Hons) Ag./ B.Sc. (Hons) Horti.	NRI/ NRI Sponsored	45,000
		Ward of serving employee of SKUAST-J / UT of J&K and Ladakh domicile seats	27,000
2.	B. Tech. Agri. Engineering/ / B. Tech. Dairy Sciences	NRI/ NRI Sponsored	1,00000
		UT of J&K and Ladakh domicile seats	50,000
3.	B. Tech. Biotechnology	Self Financing	50,000
4.	M. Sc./MSc (Ag) .M.F.Sc. (All courses except Biotechnology)	Self financing	45,000
5.	M.Sc. (Biotechnology)	Self Financing	50,000

b) Fee structure for self- financing seats in addition ot normal fees B.V.Sc. & A.H (per year)

S. No.	Programme	Category	Fees (Rs.)
1.	B.V.Sc & AH	NRI/ NRI Sponsored	3,00,000
		Ward of serving employee of SKUAST-J	2,25,000
		UT of J&K and Ladakh domicile seats domicile seats	2,25,000
Normal Fee Seats		Rs. 34, 125/- excluding hostel charges	
NRI/NRI Sponsored		Rs. 3,00,000/- + 34, 125- excluding hostel charges	
Ward of serving employee of SKUAST-J/State domicile		Rs.2,25,000/- + 34, 125/- excluding hostel charges	

(S.) Medical & Accidental Insurance (Tentative)

S. No.		Undergraduate	Postgraduate
1.	Medical & Accidental Insurance on annual basis during the degree programme	Rs. 1050/- (Tentative)	Rs. 1050/- (Tentative)

Note: **The candidates have to deposit the prescribed amount in full at the time of admission and subsequently at each academic year.**

Refund of Fee: If a Student withdraws from a course after admission, the fee deposited by the Student shall be refunded after deduction of Rs 1000/- (One thousand only) as processing fee in case the candidate withdraws from the programme before the date of next counselling but not later than the start of the course (i.e registration date), whichever is earlier.

(T.) GENERAL INSTRUCTIONS FOR TEST

- Entrance Examinations will start at 10:00 A M sharp and will be for three hours duration for selection to undergraduate programmes and 2.30 hrs. for post graduate programme.
- The candidates must reach the Centre of Examination at 9:00 AM sharp.

- Candidate must get seated to respective seats 30 minutes before start of examination.

- 15 minutes before start of actual examination OMR sheet shall be provided to candidate.

- Question papers shall be distributed sharp at 09.55 AM

- Candidates arriving late by more than half an hour will not be permitted to appear in the test.

- Calculator, log tables, pager, mobile phone, notebook or written notes, pamphlets, slide rules, protractors, rulers, highlighters dictionary etc. are not allowed inside the Examination Hall. Any violation would amount to disqualification of candidature.

- Use of correcting fluid / eraser/ ink remover including use of blade on OMR Answer sheet is strictly prohibited and any discrepancy in the evaluation on account of ignoring this caution shall be the sole responsibility of the candidate.

- The candidates are expected to behave responsibly while appearing in the entrance examination and shall not adopt any unfair/ fraudulent/ mischievous means. The candidates herein are sternly warned not to resort to any unfair/fraudulent means or act of impersonation. In case a candidate is found resorting to such acts during the test, criminal proceedings shall be initiated under rules.

- Any candidate who creates disturbance of any sort during the test or otherwise misbehaves in or around the Examination Centre or exchanges his/her seat with any candidate will be expelled from the test.

- Any candidate having in his/her possession or in his/her access any paper/book or note which may have potential of providing assistance, or copying from any paper/book or note or allowing any other candidate to copy from his/her answer sheet or found writing on any other paper, or using or attempting to use any other unfair means will be expelled from the test.

- The decision of the Centre Superintendent/Coordinator/Controller of Examinations to expel a candidate from the examination centre shall be final.

- If a candidate puts any identification mark on the OMR sheet, the same shall be cancelled. The decision of the university in this regard will be final.

- Disabled students shall be granted an extra time @ 20 minutes per hour in entrance tests.

(U.) INSTRUCTIONS FOR ATTEMPTING PAPER

- Read the given instructions on the question paper carefully.
- Write your roll number only in the space provided on the question paper and OMR sheet and nowhere else.
- The candidates are required to follow the correct procedure while attempting the question paper. Darken the oval pertaining to the most appropriate answer on the OMR sheet. If you darken more than one oval, your answer will be treated as wrong. Incorrect marking will also be taken as wrong answer. For example, if you think that the answer given against choice (B) for question number 1 is the most appropriate, then darken the oval (B) given against 1 (the number of that question) as follows on the OMR sheet:

Correct Method   Wrong Method   Wrong Method   Wrong Method

- Do not use any other mark except to darken the oval.
- The candidates will not be allowed to leave the examination hall within first 60 minutes of commencement of the examination and during the last 30 minutes.
- Each correct answer will carry one mark and each wrong answer shall fetch minus 0.25 (-0.25) marks per question.
- There will be no re-evaluation of the answer sheets.

(V.) CANDIDATES MUST BRING
- Two ball point pens (blue/ black ink).
- Admit card issued by the University.
- Valid Identity such as Aadhar/Election Card

(W.) TEST STRUCTURE

(a) Undergraduate Programmes:

The test shall comprise of one paper of three hours duration. It will be split into different section covering different subjects. The course contents as well as the level of the paper shall be that of the qualifying examination. The paper will contain 180 multiple choice objective type questions. Each question will carry one mark. For correct one answer 1 mark will be given and for incorrect answer ¼ mark will be deducted. The subjects for the SKUAST-J Test-2023, shall be as under:

Physics
Chemistry
Biology/or Mathematics*/or Agriculture*
Common Entrance

60 (compulsory for all courses)

60 (compulsory for all courses)

60 (students have to appear in any of the three subjects as the case may be)

*Mathematics/or Agriculture can only be taken by the candidates appearing for admission to B.Sc. (Hons.) Agriculture.

Model Questions

PHYSICS
1. A particle starts with initial velocity for 10m S^{-1}. It covers a distance of 20 cm along a straight line in two seconds. What is the acceleration of particle?
   (A) Zero   (B) $1m/S^2$ (C) $10m/S^2$ (D) $20m/S^2$
2. What is the barometric height of a liquid of density 3.4 g cm-3 at a place where that for mercury barometer is 70 cm?
   (A) 70 cm   (B) 140 cm   (C) 280 cm   (D) None of these

CHEMISTRY
1. The electronic configuration 2, 8, 8, 2 represents the element:
   (A) Argon   (B) Potassium   (C) Calcium   (D) Chlorine
2. In a double bond connecting two atoms there is sharing of:
   (A) 2 electrons   (B) 4 electrons   (C) 1 electron   (D) 6 electrons

BIOLOGY
1. One of the following terms involves all others?
   (A) Stock   (B) Scion   (C) Graft   (D) Cambium
2. The following plant has male and female reproductive parts in the same flower:
   (A) Papaya   (B) Date palm   (C) Cycas   (D) Datura

(b) Postgraduate Programmes:
Examination Schedule

Duration: 2½ hours. Time 10.a.m to 12.30 pm

Major subjects:
There will be six major subject groups as given in the table below. Candidate shall have to appear in one major subject group.

Major Subject Group	Code
Basic Sciences	01
Agricultural Sciences	02
Statistics	03
Forestry	04
Sericulture	05
Agricultural Engineering	06
Biotechnology	07
Fisheries	08

The examination shall have one question paper each for concerned major subject group. The questions will consist of 150 multiple choice objective type questions, each with four options.

i. In each major subject group, 150 multiple choice, objective type questions would be serially numbered from 1-150 and will carry one mark each.

ii. Candidate will be required to choose the correct answer and mark in the OMR answer Sheet by darkening the corresponding circle/ bubble against the serial number of the question with black/ blue ink ball-point pen.

iii. For correct answer 1 mark will be given and for incorrect answer -¼ mark will be deducted.

SYLLABUS FOR SKUAST-J ENTRANCE TEST FOR ADMISSION TO UNDERGRADUATE PROGRAMMES

Note: The syllabus for the entrance test shall include the contents as prescribed for 10+1 and 10+2 by the J&K State Board of School Education for the subjects of Physics, Chemistry and Biology. The syllabus for agriculture subject is as prescribed by the university. However, for the convenience of the students, the contents of the syllabus are reproduced hereunder:

Note:
➢ **Candidates applying for admission to B.V.Sc. & A.H Programme have to select Physics (A), Chemistry (B), and Biology (C) sections respectively in the Entrance Test.**

➢ **Candidates seeking admission to B.Sc. (Hons.) Agriculture, B.Sc. (Hons.) Horticulture and B. Tech. Biotechnology can either select Biology (B), Mathematics (E) or Agriculture (D) sections in the Entrance Test besides Physics (A) and Chemistry (B) sections.**

➢ **Candidates seeking admission to B. Tech. Agricultural Engineering and B.Tech, Diary Technology have to appear / select Physics (A), Chemistry (B) and Mathematics (E) in entrance test.**

A. PHYSICS (2-4 marks from each unit)

UNIT 1: PHYSICAL WORLD AND MEASUREMENT
 scope and excitement, nature of physical law, physics, technology & society. SI units, Fundamental and derived units. Accuracy and precision of measuring instruments, Errors in measurement, Significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

UNIT 2: KINEMATICS
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, position-time graphs, relations for uniformly accelerated motion, (graphical treatment and calculus approach). Scalar and Vector quantities, addition and Subtraction of vectors, general Vector and notation, Relative Velocity. Scalar and Vector products of two vectors with properties, unit vector, resolution of a vector in plane rectangular components, Motion in a plane, Projectile Motion, cases of uniform velocity and uniform acceleration.

UNIT 3: LAWS OF MOTION
Intuitive concept of force and Inertia, Newton's First Law of motion- Momentum and Newton's Second Law of motion, Impulse- Newton's Third Law of motion/ Law of conversation of linear momentum and its applications, Equilibrium of concurrent forces. Friction, static and kinetic friction, laws of friction, rolling friction. Dynamics of uniform circular motion: Centripetal force and examples of circular motion (vehicle on level circular road, vehicle on banked road.)

UNIT4: WORK ENERGY AND POWER
Concept of scalar products of vectors, Work done by a constant force and, variable force; kinetic energy, work energy theorem, power. Potential energy, Potential energy of spring, conservative forces, conservation of mechanical energy (K.E. and P .E.), non-conservative forces; Elastic and inelastic collision in one and two dimensions.

UNIT 5: MOTION OF SYSTEM OF PARTICLES AND RIGID BODY
Centre of mass of a two-particle system, Centre of mass of a rigid body; concepts of vector product of vectors: moment of a force, torque, angular momentum, conservation of angular momentum with some examples. moment of inertia, radius of gyration. Values of moment of inertia for simple geometric objects (no derivation), statement of parallel and perpendicular axes Theorems and their applications. Rigid body rotation and equations of rotational motion.

UNIT 6: GRAVITATION
The universal law of gravitation. Acceleration due to gravity and its variation with altitude, depth and shape, Kepler's laws of planetary motion/ Gravitational potential; gravitational potential energy. Escape velocity. Orbital velocity of satellite. Geo-stationary satellites.

UNIT 7: PROPERTIES OF BULK MATTER
Elastic behavior, Stress-strain relationships, Hooke's Law, Young's modulus, bulk modulus, shear modulus of rigidity. pressure due to a fluid column- Pascal's law and its applications (hydraulic lift and hydraulic brakes) Viscosity, Stoke's law, terminal velocity, streamline and urbulent flow, Renold's number/ Bernoulli's theorem and its applications Surface energy and surface tension, angle of contact, applications of surface tension ideas to drops, bubbles and capillary action. 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 (concept only).

UNIT 9: BEHAVIOUR OF PERFECT GAS AND KINECTIC 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 applications to specific heat capacities 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 a wave. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats, Doppler effect.

UNIT 11: ELECTROSTATICS

Electric charges. Conservation of charge, Coulombs law -forces between two point charges, forces between multiple charges; superposition principle and Continuous charge distribution. Electric field: Electric field due to a point charge, Electric field lines, Electric dipole, Electric field due to a dipole, Torque on a dipole in uniform electric field. Electric flux, Statement of Gauss theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, electric potential due to a point charge, a dipole and system of charges; Equi-potential surfaces, Electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.~conductors and insulators, Dielectrics and electric polarization, capacitor and capacitance, combination of capacitors in series and in parallel, capacitance of parallel plate capacitor with and without electric medium between the plates, Energy stored in a capacitor.

UNIT 12: CURRENT ELECTRICITY

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

UNIT 13: MAGNETIC EFFECTS OF CURRENT AND MAGNETISM

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

UNIT 14: ELECTROMAGNETIC INDUCTION AND ALTERNATING CURRENTS

Electromagnetic induction. Faradays law, induced emf and curren t- Lenzs Law/ Eddy currents. Self and mutual inductance. Alternating currents, peak and rms value of alternating current/ voltage; reactance and impedance; LC oscillations (qualitative treatment only) & LCR series circuits, resonance; power in AC circuits, wattles current. AC generators and transformer.

UNIT 15: ELECTROMAGNETIC WAVES

Electromagnetic waves and their characteristics. Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, Xrays, 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, Refraction at spherical surfaces, thin lens formula, Lens-makers Formula, Magnification, Power of a Lens. Combination of thin lenses in contact, Microscopes and Astronomical Telescope (reflecting and refracting) and their magnifying powers. Wave optics: wave front and Huygens principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proofs of laws of reflection and refraction using Huygen's principle. Interferences, Coherent sources, Young's double slit experiment and expression for fringe width, Diffraction due to a single slit, width of central maximum. Resolving power of pes and astronomical telescopes, Polarization, plane polarized light; Mallus's law, Brewester's law, uses of plane polarized 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/Mater waves-wave nature of particle, de Broglie relation. Davisson-Germer experiment

UNIT 18: ATOMS AND NUCLEI

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

UNIT 19: ELECTRONIC DEVICES

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

UNIT 20: COMMUNICATION SYSTEM

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

B. Chemistry (3-4 marks from each unit)

UNIT 1: CHEMICAL ARITHMETIC, ATOMIC STRUCTURE AND NUCLEAR CHEMISTRY

 Laws of chemical combination, mole concept (numericals) calculations using chemical equations. Equivalent weight of oxidizing and reducing agents. Atomic structure, Bohr's model of Hydrogen atom, Quantum numbers, Pauli's exclusion principle, Hund's rule and Aufbau principle/ Heisenberg's uncertainty principle, de-Broglie wave equation and its significance.

UNIT 2: CHEMICAL EQUILIBRIUM

Law of mass action, Le-Chatelier's principle, and its application to physical and chemical equilibria/ lonisation of weak electrolytes (Ostwalds dilution law). Acids and bases: Acid base equilibria. Bronsted-Lowry and Lewis concept, of acids and bases. Ionic product of water. pH and pOH scales, pKa & pKb values, solubility product, buffer solutions common ion effect, hydrolysis of salts.

UNIT 3: CHEMICAL KINETICS
Effect of concentration and temperature on rate of chemical reactions, Arrhenius equation) temperature co-efficient, Concept of activation energy, first and second order reactions, half-life period, Units of rate constants for zero, first and second order reactions.

UNIT 4: SOLUTIONS
Different ways of expressing the concentration of solutions (molarity, molality, mole fraction, ppm and normality), vapour pressure, Raoults law, ideal and non - ideal solutions, colligative properties, determination of molecular masses of non- volatile solutes using various colligative properties, abnormal molecular masses and Vant Hoff factor.

UNIT 5: CHEMICAL THERMODYNAMICS
Energy changes during chemical reactions, internal Energy and enthalpy changes enthalpy of combustion solution and neutralization, Hess's Law (Numerical problems). first, second, third law of thermodynamics, concepts of entropy and free energy, spontaneity of a chemical reaction and thermodynamic equilibrium.

UNIT 6: REDOX REACTIONS AND ELECTROCHEMISTRY
Determination of oxidation numbers, oxidation and reduction in terms of electron transfer, dependence of electrode and cell potential on concentration (Nernst Equation), electrode potential as a criteria for product formation in electrolysis. E.M.F. of Galvanic cell, relationship between free energy change and E.M.F. of a cell, definition and units of equivalent, molar and specific conductivity.

UNIT 7: SOLID STATE & STATES OF MATTER
Boyle's Law, Charle's law, Dalton's law of partial pressure, Graham's law of diffusion of gases, causes of deviation from ideal behaviour, ideal gas equation and nature of R, Vander Waals equation, surface tension and viscosity of liquids, crystalline and amorphous solids, crystal lattice, crystal types, Packing efficiency, calculation of density of unit cell, number of atoms per unit cell in a cubic cell, co-ordination number, stoichiometric defects (Schottky, Frenkel and interstitial defects.), Properties of solids(electrical, magnetic & dielectric)

UNIT 8: SURFACE CHEMISTRY & POLYMERS
Freundlich absorption isotherm, preparation of colloidal solutions by physical and chemical methods, electrical properties (cataphoresis, electorosmosis, coagulation and protective colloids) homogeneous and heterogeneous catalysis. Classification of polymers, addition and condensation free radical cationic and anionic polymerization, commercially important polymers.

UNIT 9: PERIODIC PROPERTIES
Classification of elements into s, p, d, and f blocks, variation of ionization energy, electron affinity, electro-negativity, atomic and ionic radii along the period and down the group.

UNIT 10: CHEMICAL BONDING AND MOLECULAR STRUCTURE
Types of chemical bonds, Ionic & covalent bonds, Bond parameters, quantum theory of covalent bond, pi and sigma bonds, hybridization involving s, p and d- orbitals, dipole moments and hydrogen bond. VSEPR-theory and shapes of simple molecules like H_2O, NH_3, SO_2, CO_2, PCI_3, PCIS, CIF_3, BF_3, SF_4, XeF_{-2}, XeF_4 Molecular orbital theory, bond order and its significance, electronic configuration of H_2, H_2+, He_2, O_2, O_2 ,O^{2-}_{-2} & F2.

UNIT 11: CHEMISTRY OF REPRESENTATIVE ELEMENTS.
(S and P Block Elements) Electronic configuration, oxidation states and trends in various properties like ionization energy, electron affinity, atomic radii, electro negativity and diagonal relationship of sand p block elements.

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

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

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

d. Carbon family: Hydrides and oxides.

e. Nitrogen family: Oxides of nitrogen and phosphorous, Reducing nature, basic strength and boiling points of their halides.

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

g. Halogen family. Bond energy, colour and oxidizing power, boiling point, acid strength and diple moment, thermal stability, reducing power of hydracids, relative acidity and oxidizing power of oxyacids of halogens.

UNIT 12: TRANSITION METAL INCLUDING LANTHANIDES
Electronic configuration, oxidation states, colour and magnetic properties of transition elements oxides of V, Cr and Mn, alloys of copper silver and iron, oxidation states of lanthanides.

UNIT 13: CO-ORDINATION CHEMISTRY AND ORGANOMETALLICS
Werner's coordination theory, nomenclature, isomerism in co -ordination compounds (ionization, linkage, hydrate, co-ordination, geometrical and optical), bonding in co-ordination compounds on the basis of V.B. theory, stability of co- ordination compounds in solution, Ferrocene and Zeises salt.

UNIT 14: CHEMISTRY OF METALS
General aspects of Metallurgy, metallurgy of iron, copper and zinc and their properties, various forms of iron.

UNIT 15: NOMENCLATURE AND BASIC CONCEPTS IN THE ORGANIC CHEMISTRY
Nomenclature of organic compounds (monofunctional and polyfunctional groups), inductive, eletromeric resonance and hypercojugtion effects, reaction mediates, carbocations, carbanions and free radicals with their general stability order, types of organic reactions (addition, substitution, elimination and redox reactions), aromaticity on the basis of Huckel rule. Ortho, meta and para directing groups.

UNIT 16: HYDROCARBONS
Structural isomerism in alkanes, alkenes, alkynes and arenes, stereoisomerism: ,geometrical and optical isomerism, chirality, origin of chirality, specific rotation, racemisation and resolution, conformations in ethane and cyclohexane, relative configuration (D,L-Nomenclature), absolute (R and S system of nomenclature).Relations of hydrocastions:-Addition, Subsititution and Oxidation reactions, eletrophiles and neucleophiles; acidic character of aklyines.

UNIT17: ORGANIC CHEMISTRY BASED ON FUNCTIONAL GROUP-I
Haloalkanes, haloarenes, alcohols and phenols, General methods of preparation properties of haloalkanes, choloroform, iodoform.

UNIT18: ORGANIC CHEMISTRY BASED ON FUNCTION GROUP-II
(Ethers, aldehydes and ketones, monocarboxylic acids). General methods of 3ration and properties of ethers, aldehydes, ketones and monocarboxylic I derivatives of monocarboxylic acids like, acid halides, acid anhydrides acid amides and esters, relative strength of carboxylic acids.

UNIT 19: 0RGANIC CHEMISTRY BASED ON FUNCTIONAL GROUP-III
(Cyanides, isocyanides, nitro compounds and amines)General methods of preparation and properties of cyanides, Isocyanides, nitro compounds and amines, relative basic character of amines

UNIT 20: MOLECULES OF LIFE (BIOMOLECULES)
Carbohydrates: definition, classification, muta-rotation, structure of animoacids, peptides and proteins (Molish and ninhydrin tests). classification and uses of vitamins. Chemicals in medicine and health care, dyes and drugs, chemical reactions in atmosphere, ozone depletion and its effects. acid rain, green house effect & global warming

C. BIOLOGY (3-5 marks from each unit)

UNIT: 1 DIVERSITY AND CLASSIFICATION OF PLANTS

Systematics need and history; Salient features of two and five kingdom systems their merits and demerits; types of classifications (artificial, natural and phylogenetic); General characters of algae, fungi, bryophytes, lichens---basic characteristics pteridophytes, gymnosperms and angiosperms; Status of some a cellular organisms like viruses viroids;.

UNIT-2: MORPHOLOGY AND ANATOMY OF PLANTS

Morphology of root, stem and leaf and their modifications; types of inflorescence, flower, fruit and seed. Description of Liliaceae, Fabaceae, Solanaceaea. Tissues and tissue system: Types of tissues (meristematic and permanent) and their functions. Anatomy of dicot and monocot root, stem and leaves; secondary growth.

UNIT 3: PLANT PHYSIOLOGY

Transport in plants: Mechanisms of transport diffusion, facilitated diffusion, Passive and active   transport. Plant water relations: Water potential; osmosis; plasmolysis; imbibition; long distance transport of water; apoplast, symplast pathways; ascent of sap; root ;sure theory and tanspirational pull theory. Transpiration: Types and significance; mechanism of opening and closing of stomata, guttation; phloem transport (Mass Flow hypothesis) Mineral Nutrition: Criteria for essentiality of nutrients; macro and micro nutrients their role and deficiency symptoms. Mechanism of   nutrient uptake by plants from soil. Nitrogen metabolism nitrogen cycle, biological nitrogen fixation. Photosynthesis: Historical background; site of hotosynthesis; various photosynthetic pigments; mechanism of light reaction; hotophosphorylation (cyclic and non-cyclic); Dark reaction-fixation of carbon dioxide (C3 cycle, C4 cycle); factors affecting photosynthesis; photorespiration. Respiration: Introduction; glycolysis, Kreb's cycle, Electron Transport System; Aerobic and anaerobic respiration; respiratory quotient. Growth and evelopment: Characteristics and phases of plant growth; growth curve; differentiation, dedifferentiation and re-differentiation; plant growth regulators- discovery, nature and physiological effects of auxins, gibberellins, cytokinins, ethylene and abscisic acid. Photoperiodism and vernalisation.

UNIT -4: REPRODUCTION IN FLOWERING PLANTS

Modes of reproduction in flowering plants (Vegetative, asexual and sexual); flower structure, development of male and female gametophytes; Pollination types, agencies and examples; in-breeding and out-breeding, factors promoting out-breeding, pollen-pistil interaction; double fertilization; post-fertilization events; development of endosperm, embryo, seed and fruit; apomixis and polyembryony; types and importance.

UNIT -5: GENETICS

Heredity and variation (somatic and germinal)- Mendel's laws of inheritance- I deviations from Mendelism; incomplete dominance; co-dominance; multiple/alleles; pleiotropy; chromosomal theory of inheritance. Evidence for DNA as genetic material; structure of DNA and RNA; DNA packaging; I DNA replication; Protein synthesis transcription, translation, genetic code; gene expression and regulation (lac-operon).

UNIT -6: ECOLOGY AND ENVIRONMENT

Meaning of ecology, community, ecosystem and niche. Population and ecological adaptations: Characteristics of populations (birth rate (natality /fecundity), death rate (mortality) and age distribution; population interactions; competition, predation, parasitism and mutualism.

Ecosystems: Biotic and abiotic components; energy flow, nutrient cycling (carbon and phosphorus), litter decomposition and primary productivity; pyramids of number, biomass and energy; ecological succession types.

Biodiversity and its conservation: Levels of biodiversity; threats to biodiversity; mega-biodiversity countries and biodiversity hotspots; IUCN threat categories; in situ and ex situ methods of biodiversity conservation. Environmental issues: Causes and consequences of air and water pollution and their control; solid waste management; agro-chemicals and their effect; greenhouse effect and global warming; stratospheric ozone layer depletion causes and consequences.

UNIT- 7: BIOLOGY AND HUMAN WELFARE

Plant breeding: Introduction, steps in plant breeding and application of plant breeding. Tissue culture: Cellular totipotency; technique and application of tissue culture. Microbes in human welfare: Role of microbes in food processing; industrial production; sewage treatment; energy production (biogas); bio-pesticides and bio-fertilizers Elementary idea of Genetically Modified Organisms (GMOs); bio-piracy and patents.

ZOOLOGY

UNIT -1: DIVERSITY IN THE LIVING WORLD.

Co Characteristic features of living organisms Salient features of different animal phyla (non-chordates upto phylum level, chordates up to class level). National parks of J&K State:- Dachigam National Park, Hemis High altitude National Park and Kishtwar High altitude National Park.

UNIT-2: HISTOLOGY & MORPHOLOGY

Animal Tissues:- Epithelial, Connective, Muscular and Nervous Elementary knowledge on morphology & anatomy of Frog, Earthworm and Cockroach.

UNIT-3: CELL-STRUCTURE & FUNCTION

Modern cell theory, Prokaryotic and eukaryotic cells, cell wall, cell membrane structure & function (fluid mosaic model), cell organelles (Plastids, Mitochondria, Endoplasmic reticulum, Golgi bodies/ dictyosomes, riobosomes, lysosomes, nucleus, vacuoles, centrioles, cilia & flagella). Cell division: Cell cycle, Mitosis and Meiosis Bio molecules: Structure and function of carbohydrates, proteins, lipids and nucleic acids, primary and secondary metabolites, metabolism Enzymes: Types, properties functions and factors controlling enzyme activity.

UNIT-4: HUMAN PHYSIOLOGY

Alimentary canal, digestion and absorption of food, disorders of digestive system (jaundice, vomiting, diarrhea, constipation, indigestion etc.). Respiratory organs, mechanism of breathing, respiratory volumes and capacities, transport of gases (oxygen and carbon dioxide), disorders of respiratory system (asthma, emphysema, fibrosis etc.) Circulatory system:- Blood & lymph and their functions, blood groups, coagulation of blood, human heart, cardiac cycle, ECG, double circulation, ~ disorders of circulatory system. (hypertension, coronary artery disease, angina, heart failure) Human excretory system:- urine formation, functions of tubules, mechanism of concentration of the filtrate, regulation of kidney function, micturition, role of other organs in excretion (lungs, liver and skin), haemo-dialysis and peritoneal dialysis, disorders of the excretory system (kidney failure, glomerulonephritis, renal calculi), Types of movement (amoeboid, ciliary and muscular), different types of muscles, structure of contractile proteins (actin and myosin), mechanism of muscle contraction, joints, disorders of muscular and skeletal system (Myasthenia gravis, muscular dystrophy, tetany, arthritis, gout, osteoporosis) Human nervous system:- neuron as a structural and functional unit of nervous system, generation and conduction of nerve impulse, transmission of impulses, reflex action and reflex arc, structure and functioning of the sense organs (eye and ear), Endocrine glands, Mechanism of hormone action, hormones of heart, kidney and gastrointestinal tract.

UNIT-5: REPRODUCTION

Asexual reproduction:- Characteristics and types of asexual reproduction (binary fission, sporulation, budding, gemmules, fragmentation, regeneration) Human reproduction:- male and female reproductive system, microscopic anatomy of testis and ovary, spermatogenesis and oogenesis, menstrual cycle, fertilization, embryo development upto blastocyst formation, implantation, pregnancy and placenta formation, parturition and lactation, Reproductive health:- need for reproductive health, sexually transmitted diseases and their control and prevention, birth control, (its need and methods), contraception and medical termination of pregnancy (MPT), amniocentesis, infertility and associated reproductive technologies (IVF,ZIFT,GIFT).

UNIT-6: GENETICS AND EVOLUTION

Sex determination in humans, birds and honey bee. Inheritance pattern of Mendelian disorders in humans (colour blindness, haemophilia, cystic fibrosis, sickle- cell anaemia, phenyl ketonuria, halesemia). Chromosomal disorders in humans:- Down's syndrome, Turner's syndrome and Klinefelter's syndrome. Genome and human genome project. DNA fingerprinting. Origin of life, theories and evidences for evolution with special reference to Darwinian theory, and Modern synthetic theory, Hardy-Weinberg principle, Adaptive radiation.

UNIT-7: BIOLOGY AND HUMAN WELFARE

Health and Diseases:- basic concepts of immunology, vaccines, common diseases in human beings (their causative agents, symptoms and prevention and control) with reference to thyphoid, hepatitis, malaria, filariasis, bubonic plague, ascariasis, common cold, amoebiasis and ring worm, Detailed account of diseases like cancer and HIV/ AIDS. Insects and human welfare:- Silk, honey and lac producing insects, their life-cycle and usefulness of their products. Adolescence and drug and alcohol abuse (effects of drug/ alcohol abuse, prevention and control.

UNIT 8: BIOTECHNOLOGY AND ITS APPLICATIONS

Genetic engineering (recombinant DNA technology), cloning. Biotechnological production of human insulin, vaccines and growth hormone. Gene therapy. Bio safety/ ethical issues regarding recombinant DNA technology

(D) AGRICULTURE (60 Marks)

UNIT 1. AGRONOMY   20 marks

Cultivation of common crops-wheat, paddy, cotton, jowar, bajra, maize, soybean, arhar, mustard, sunflower, pea, groundnut, gram, tobacco, barseem, potato and sugarcane under the following heads:

Recommended varieties and their main characteristics, suitable areas, seed rate, time and method of sowing, irrigation, fertilizer use, control of weeds, insect-pests and diseases, harvesting, processing and yield. Soils-origin and classification loam, silt, clay, sandy loam, etc.; physical and chemical properties; soil conservation. Use of fertilizers, essential nutrients- nitrogen, phosphorus and potassium uptake by different crops, organic and inorganic fertilizers and their effects on crops and soil, methods of using fertilizers, farmyard manure, composting, green manauring, study of organic and inorganic fertilizers/ manures. Pollution of soil, water and air in modern agriculture and remedial measures.

Irrigation and Drainage - water requirement of crops, measurement of water discharge, prevention of loss of water; quality of water; different methods of irrigation - flooding, basin method, border /strip method, sprinkler and drip irrigation - their advantages and limitations. Necessity for drainage, damage to soil and crops due to excess moisture, prevention of formation of acidic and alkaline soils and their management; natural calamities- floods and drought and their management.

UNIT 2. HORTICULTURE   10 marks

Study of following horticultural crops including recommended varieties and their main features, suitability for different regions, time and method of sowing, fertilizer use, irrigation, diseases and pests and their control.
Crops- cabbage, cauliflower, onion, garlic, cucurbits, bittergourd, bottlegourd, muskmelon, squash, ridgegourd; root crops-carrot, radish sweet potato, turnip; peas, tomato, bringal, lady's finger, spices; fruit crops such as banana, apple, mango, litchi, citrus, guava, papaya, peach etc.

UNIT 3. AGRICULTURAL ENGINEERING   10 marks

Type of iron and steel, wood, plastic and tin used in agricultural implements and their forms & properties. Study of different types of ploughs-their merits and demerits; mechanical devices such as cultivator, harrow, sprayer, seed drill, threshers etc. their management & cost, selection of prime movers, water lifting devices; discharge, command area, cost of different system; soil preparation, methods of ploughing, need for tillage, kinds of tillage, interculture, equipment for interculture.

Power transmission through belts, pullies and gears, questions relating to number of teeth in gears according to speed and size of pullies, hand operated chaff cutters, cane crusher etc., draught and its measurement.

UNIT 4. AGRICULTURAL ECONOMICS　　　　　　　　　　　　**10 marks**

Introductory agricultural economics-meaning and scope, significance of agricultural economics in national planning. Production - meaning, factors of production such as land, labour, capital and management, properties of factor of production; law of returns; intensive and extensive agriculture; Exchange - meaning, types, advantages; types of markets, general price determination; money and credit; banks and their functions; principle of international trade, Distribution-meaning, rent, wages, interest and profit; Consumption -meaning, wants and their properties, law of diminishing marginal utility, law of demand, relative prices and standard of living; Cooperation - meaning, principles of cooperation, types of cooperative societies in agriculture, single purpose and multi-purpose cooperative societies, land development banks: Agriculture-place in Five Year Plans; statistics of agricultural production in the State; Major programmes of agricultural development.

UNIT 5.ANIMAL HUSBANDRY AND VETERINARY SCIENCE　　　　　**10 marks**

Study of major breeds of cows, buffaloes, goat, sheep and poultry; elementary physiology and anatomy of cows and bullocks; estimate of their age; characteristics of good milch cows and buffaloes, bulls and bullocks. Care and management of pregnant cow, during calving, newborn calves, young calves, mulch cows; poultry management. Principles of feeding of various classes of livestock and poultry. Economic feeds for various classes of livestock and poultry. Clean milk production and maintenance of hygiene. Common medicines and vaccines used in treatment/prevention of animal diseases; handling of animals for treatment; castration. Operation flood, Milk and Milk products, Identification of Adult rated milk. Note: Questions from similar topics can also be included.

(E) MATHEMATICS (06 marks each unit)

UNIT 1: SETS, RELATIONS AND FUNCTIONS

Sets and their representation, finite and infinite sets, empty set subsets, subset of real numbers especially intervals, power set, universal set. Venn diagram, union and intersection of sets. Difference of sets, Compliment of a set. Ordered pairs, Cartesian product of sets, number of elements in the Cartesian product of two finite sets. Cartesian product of real with itself (upto RxRxR). Relation, Domain, co- domain and range of relation, types of relations, reflexive, symmetric, transitive and equivalence relations. Function as special kind of relation from one set to another, domain, co-domain and range of a function. One to one, onto functions. Real valued functions of the real variable, constant identity, polynomial, rational modulus signum and greatest integer functions with their graph. Sum, difference, product and quotients of functions. Composite of functions, inverse of a function, binary operations.

UNIT 2: COMPLEX NUMBER; LINEAR INEQUATION; LINEAR PROG

Complex number: Conjugate of a complex number, modulus and amplitude (argument) of a complex number, Argand's plane and polar representation of complex numbers, algebraic properties of complex numbers. Fundamental theorem of algebra, solution of Quadratic equation in the complex number system. Square root of a complex number. Linear inequation: Algebraic solution of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities of two variables. Linear programming: Introduction , definition of related terminology such as constraints, objective function, optimization, different type of linear programming problem (L.P), mathematical formulation of L.P problem, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

UNIT 3: SEQUENCE AND SERIES, PERMUTATION AND COMBINATION

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

Fundamental principle of counting, factorial n., permutations P(n,r) and combinations C(n,r), derivation of formulae and their connections, simple applications. Mathematical Induction and Binomial Theorem: The principle of mathematical induction and simple applications. Binomial theorem, statement and proof of Binomial theorem for positive integral power. Pascal's triangle, general and middle terms in the Binomial expansion, simple application.

UNIT 4: TRIGONOMETRIC AND INVERSE TRIGONOMETRY FUNCTIONS

Positive and negative angles, measuring angles in radians and in degrees, Conversion from one measure to another. Definition of trigonometric functions with the help of unit circle, identity sin2x+cos2x=1 for all Sign of x, Trigonometric functions and their graphs. Expression of sin ± cos ± in terms of Sin x, Sin y, Cos x and Cos y.

Identities related to Sin2x, Cos2x, tan2x, Sin3x, Cos3x, and tan3x. General solution of trigonometric equations of the type Sin, Cos. Sine and Cosine formulae and their simple applications. Inverse trigonometric functions, defunction, range, domain, principal value branches. Graphs of inverse trigonometric functions, elementary properties of inverse trigonometric functions

UNIT 5: MATRICES AND DETERMINANTS

Matrices, concepts, notation, order, equality, types of matrices, Zero matrix, transpose of matrix, Symmetric and skew symmetric matrices. Addition, multiplication, scaler multiplication of matrices, simple properties of addition, multiplication and scalar multiplication of matrices. Non-cumulative of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (order 2x2). Concept of elementary row and column operation, Invertible matrices and uniqueness of inverse, if it exists. (Matrices with real entries). Determinants of square matrix (upto 3x3 matrices) properties of determinants, minors, cofactors and applications of determinants in finding area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables using inverse of a matrix. Crammer's Rule and its applications.

UNIT 6: LIMIT, CONTINUITY AND DIFFERENTIATION

Concept of limit of a function. Theorems on Limits, Evaluation of limits using standard results
Continuity of a function at a point. Continuity of Sum, product and quotient of functions. Derivative: definition of a derivative of a function, geometrical interpretation of the derivative.

- Derivative of sum, difference, product and quotient of two or more functions.
- Derivative of algebraic and composite functions.
- Derivative of trigonometric and inverse trigonometric functions.
- Chain rule, derivative of implicit functions.
- Derivative of logarithmic and exponential functions.
- Logarithmic differentiation.
- Derivative of functions expressed in parametric forms.
- Second order derivatives.
- Rolle's and Lagrange's Mean Value Theorem and their geometrical interpretation and their simple applications.
- Chain Rule, derivative of implicit functions.

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

UNIT 7: INTEGRATION AND DIFFERENTIAL

Integration as inverse process of differentiation. Integration of variety of functions by Substitution, by parts, by partial fractions. Simple integrals. Definite integrals as a Limit of a sum. Fundamental Theorem of calculus. Basic properties of definite integrals Evaluation of definite integrals. Application of integrals: Application in finding the area under simple curves, especially lines. Areas of circles, parabolas and ellipses (in standard form) Area under the curve y= Sinx, y= Cosx, area between the above two curves. Differential Equations: Definition, order and degree of a differential equation. General and particular solutions of a

differential equation. Formation of a differential equation whose general solution is given. Solution of differentiation equation by method of separation of variables. Solution of Homogeneous differential equation of first order and first degree. Solution of linear differential equation of the type:

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

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

UNIT 8: STRAIGHT LINES AND CONIC SECTIONS
Distance between two points, section, slope of a line, angle between two lines, various forms of equations of lines, point-slope form, intercept form, two point form, and normal form. General equation of a line, distance of a point from a line. Conic Section: Sections of a cone, circles, parabola, ellipse, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of conic section. Standard equation of a circle, parabola, ellipse, and hyperbola and their simple properties.

UNIT 9: STATISTICS AND PROBABILITY
Measure of dispersion, mean, deviation, variance and standard deviation of ungrouped/ grouped data. Analysis of frequency distribution with equal means but different variances. Random Experiment: outcome, sample spaces. 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, Baye's theorem, random variable and its probability, distribution, mean and variance of a random variable. Repeated independent (Bernouli) trials and Binomial distribution.

UNIT 10: VECTORS AND THREE DIMENSIONAL GEOMETRY
 Vectors and scalers, magnitude and direction of a vector Direction Cosines and ratios of a vector. Types of vector, equal, zero, unit, parallel and collinear vectors. Position vector of a point , negative of a vector, components of a vector, addition of vectors, Scalar multiplication, position vector of a point dividing a line segment in a given ratio.

SYLLABI FOR SKUAST-JAMMU ENTRANCE EXAMINATION FOR ADMISSION TO MASTER DEGREE PROGRAMMES

Code 01: Major Subject Group- Basic Sciences
1. **General Agriculture**   **30 marks**
Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; bio-pesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

2: **Biochemistry**   **30 marks**
 UNIT-I: Importance of biochemistry in agriculture. Acid-base concept and buffers; pH. Classification, structure and metabolic functions of carbohydrates, lipids and proteins. Structure and function of nucleic acids. Enzymes, nomenclature, mechanism of action enzyme kinetic purification vitamins and minerals as coenzymes and cofactors. Metabolic pathways: glycolysis, TCA cycle, fatty acid oxidation, triglyceride biosynthesis. Electron transport chain; ATP formation. Photosynthesis: C-3, C-4 and CAM pathways. Nitrate assimilation; biological nitrogen fixation. Secondary metabolites, pathways and its role in biological sciences. DNA replication, transcription and translation; genetic code; operon concept Centrifugation, spectrophotometric , electrophoresis and chromatographic techniques, concept and application of Radio Isotopes in Biological Sciences.

3: Biotechnology   **30 marks**
Unit -II: Characteristics of prokaryotic and eukaryotic organisms; differences between fungi, bacteria, mycoplasms and viruses. Physical and chemical basis of heredity; cell organelles, chromosome structure. DNA replication, transcription and translation; genetic code; operon concept. Genetic engineering; restriction enzymes; vectors; gene cloning; gene transfer. Molecular markers and their applications . Basic techniques of cell , tissue and organ culture and their implications. General applications of biotechnology. Molecular and immunological techniques. Concept of bioinformatics, genomics and proteomics.

4- Genetics & Plant Breeding   **60 marks**
Unit-I: Mendel's laws of inheritance and exceptions to the laws. Types of gene interactions, Pleiotropism-Penetrance and expressivity. Multiple alleles, Quantitative traits and qualitative traits and differences between them, Multiple factor hypothesis. Ultra structure of cell and cell organelles and their functions. Study of chromosome structure, morphology, number and types-karyotype and ideogram. Numerical chromosomal aberrations (Polyploidy) . Structural chromosomal aberrations. Mitosis and meiosis-their significance and differences between them. DNA and its structure, function, types, modes of replication and repair. Cytoplasmic inheritance-its characteristic features and differences between chromosomal and cytoplasmic inheritance. Mutation- its characteristic features, methods of inducing mutations and ClB technique. Gene expression and differential gene activation. Lac operon and fine structure of gene.

Unit -II: Aims and objectives of Plant Breeding; Modes of reproduction, Sexual, Asexual, Apomixis and their classification, significance in plant breeding. Modes of pollination, genetic consequences, differences between self and cross-pollinated crops. Methods of breeding – introduction and acclimatization. Selection . Mass selection Johannson's pure line theory, genetic basis, pure line selection. Hybridization – Aims and objectives, types of hybridization. Methods of handling of segregating generations – pedigree method, bulk method, back cross method and various modified methods. Incompatibility and male sterility and their utilization in crop improvement. Heterosis, inbreeding depression, various theories of Heterosis, exploitation of hybrid vigour-development of inbred lines, single cross and double cross hybrids. Population improvement programmes, recurrent selection, synthetics and composites. Methods of breeding for vegetative propagated crops. Clonal selection. Mutation breeding – Ploidy breeding. Wide hybridization, significance in crop improvement.

Unit-III: Chemical composition of seed. Seed dormancy, Seed germination, Male sterility, self-incompatibility and their role in hybrid seed production. Principles and methods of seed production of varieties and hybrids of cereals like wheat, paddy, sorghum, pearl millet and maize; pulses like chickpea, pigeon pea, green gram, black gram, soybean and cowpea; oilseeds like groundnut, brassica, sesame, sunflower and castor. Different classes of seed (Breeders seed, foundation seed, certified seed, etc.,) Seed Certification Schemes, concepts and procedures. Seed Testing concepts and objectives, its role in seed quality control. Seed sampling, seed moisture testing, purity analysis, germination testing, tolerance tests and equipment. Testing for genuineness of varieties – principles and methods based on seed, seedling and plant characters, biochemical techniques namely electrophoresis of proteins and iso-enzymes and DNA fingerprinting.

Code 02: Major Subject Group- Agricultural Sciences

1: General Agriculture   **30 marks**
Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; bio-pesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

2: Agronomy   12 marks

UNIT-I: Principles of Agronomy, Crop ecology and geography and Agricultural Meterology: Agronomy-meaning and scope, National & International agricultural research institutes in India, Agro climatic zone of India , Tillage, crop stand establishment and planting geometry and their effect on crop, Physiological limits of crop yield and variability in relation to ecological optima, organic farming , Precision farming , integrated farming system, principles of field experimentation. Principles of crop ecology and crop adaptation, crop plants, Greenhouse effect, climatic factors and their effect on plant processes and crop productivity. Atmospheric temperature and global warming. Crops and atmospheric humidity, weather forecasting, sustainable agriculture parameter and indicators, conservation agriculture.

UNIT-II: Field crops: Origin, distribution, economic importance, soil and climatic requirement, varieties, cultural practices and yield of cereals (rice , wheat, maize, etc), pulses (chickpea, lentil, peas, Pigeon pea, mungbean, urdbean), oilseeds (rapeseed & mustard, sunflower, sugarcane, fodder & forage crops)sorghum, maize, napier , berseem, Lucerne, oats, medicinal & aromatic plants and commercial crops.

UNIT-III: Weed management: Principles of weed management, classification, biology and ecology of weeds, crop weed competition and allelopathy, concepts and methods of weed control, integrated weed management, Classification, formulations, selectivity and resistance of herbicides, Herbicide persistence in soil and plants, Application methods and equipments, Weed management in field crops.

UNIT-IV: Water management: Principles of irrigation, water resources and irrigation development in India , water and irrigation requirements, concepts and approaches of irrigation scheduling , methods of irrigation, Measurement of irrigation water, application, distribution and use efficiencies, conjunctive use of water, irrigation water quality and its management , water management in major field, crops (rice, wheat, maize , groundnut, sugarcane) Agricultural drainage.

UNIT-V: Dry land Agronomy: Characteristics of Dry land farming and delineation of Dry land tracts, constraints of Dry land farming in India, types of drought and their management, contingency crop planning and mild-season corrections for aberrant weather and its recycling. Watershed management.

3: Soil Science and Agricultural Chemistry   12 marks

UNIT-I: Soil as medium for plant growth, weathering of rocks and minerals, soil profile, soil -physical mineralogical and chemical nature. Biological properties and soil, calculations of porosity and bulk density. Soil air, Soil temperature its importance in plant growth. Soil-water plant relationship, Soil colloids-properties, structure of silicate clay minerals, sources of negative charges, properties, kaolinite , iolite, montmorillonite and vermiculite clay minerals, milli-equivalent concept, ion exchange capacity, buffering of soils. Problems soils-acid, saline and acid sulphate soils- their characteristics, formation, problems and management. Irrigation, water quality. Waterlogged soils.

UNIT-II: Essentiality criteria for plant nutrition, mechanism for movement and uptake of ions in soils and plants, Forms of nutrients in soil, deficiency symptoms in plants, luxury consumption of K nutrient, nutrient interactions and chelated micronutrients. Soil fertility, evaluation and management for plant growth, soil testing and fertilizer recommendations. Soil, soil survey-type, objectives, uses, land capability classifications. Remote sensing and its application in agriculture. SIS, GIS and GPS, basic features and uses in agriculture, Elementary concepts of radio isotopes and uses in agriculture. Soil micro-organisms, classifications and their roles. Organic matter decomposition, C:N ratios, mineralization and immobilization processes, humus, role of organic matter in soil quality. Soil erosion, types and control measures. Fertilizers and manures-classifications, NPK fertilizers, their reactions in soils, green manuring , recycling of organic wastes, composting . Soil and water pollution-sources, brief idea about different pollutants in soils and their managements

4: Fruit Science   12 marks

UNIT-I: Definition and importance of horticulture, Layout and establishment of orchards; propagation methods & use of root stocks, pruning and training methods, Use of growth regulators in fruit production, High density planting, advantages of HDP and tree vigor control, Assessment of requirement of irrigation water & its methods: merits and demerits, methods of application and fertigation for important fruit crops, studies on flower & fruit drop and its control, Studies on post harvest management in major fruit crops climatic requirement and cultivation practices of fruits like mango, banana, citrus, guava, grape, litchi, spota, papaya , apple, pear, peach, pineapple, pomegranate, ber, fig, phalsa, Jack, cherry and plum; nutritive value of fruits and their role in human nutrition; basic physiology of ripening in fruits and their products; type of fruits and control of fungal and bacterial diseases; plant nutrients, deficiency symptoms of nutrients, manures and fertilizers, system of irrigation, management of important pests and diseases of fruits .

Unit-II: Nursery management: Importance of commercial nurseries in India and its management/ planning, Use of controller structures, shade houses, poly houses in fruit cultivation and propagation, Micro- propagation of plants, aseptic cultures and disadvantages, Study of tools , accessories and other equipment necessary for nursery.

5: Food Science & Technology   12 marks

Unit-I Importance of post harvest technology in horticulture crops. Maturity indices, harvesting and post harvest handling of fruits and vegetables. Pre-harvest factors affecting quality on post harvest life of fruits and vegetables. Factors responsible for deterioration of harvested fruits and vegetables. Methods of storage-pre-cooling, pre-storage treatments, low temperature storage, controlled atmospheric storage, hypobaric storage, irradiation and low cost storage structure. Various methods of packing, packaging material and transport. Types of containers, cushioning material, vacuum packing, poly shrink packing, specific packing for export of mango, banana, grapes etc.

Unit-II Importance and scope of fruits and vegetables preservation in India. Principles of preservations by heat, low temperature, chemical and fermentations. Preservation through canning, freezing, dehydration, drying, ultraviolet and ionizing radiations. Preparation of jam, jellies, marmalades, candies, crystallized and glazed fruits, preserve, chutneys, pickles, ketchup, sauce, puree, syrups, juices, squashes and cordials. Spoilage of canned products-biochemical, enzymatic and microbial spoilage. Preservatives, colors-permitted and prohibited in India.

6: Vegetables Sciences   12 marks

Unit:-I Origin & Importance of vegetables in human diet; Vegetable Gardens; Classification of Vegetables; Vegetables regions and their climatic requirements; Seed treatment; Preparation of germination media; Containers and growing of nurseries of different vegetables; Hardening of seedlings; Different methods of fertilizer application; Different irrigation & weed management practices in vegetable crops.

Unit-II: Package of Practices for various fruit vegetables (Tomato, Brinjal, Chilli & Okra); Cucurbitaceous vegetables(Melons, Cucumber & Gourds) ; Cole crops (Cauliflower, Cabbage & Knol-Khol); Bulb Crops (Onion& Garlic); Leguminous crops (Peas & Beans); Root Crops (Carrot, Radish, Turnip & Beetroot) tuber crops (Sweet Potato, Colocasia, Tapioca & Yam), Leafy vegetables (Spinach & fenugreek); Perennial Vegetables (Drum stick, Coccinia & Curry leaf)

Unit-III: Introduction ,history, definition & world scenario of protected cultivation ; Green House effect; Uses of Green Houses; Status & scope of green house technology in India ; Planning & Designing for green house – Site selection , green house orientation; Plan layout ; Green house utilities-Water electricity etc; Type of green houses-classification based on the shape, material utility and covering material; Consideration of greenhouse establishment Materials for green house construction ; Management of green house – Temperature, Light , Relative Humidity, Ventilation, Carbon dioxide, Irrigation & Nutrition.; Methods of green house cooling; Methods of ventilation-Natural & forced Ventilation ; Green house Heating – Heating Systems heat distribution & heat Conservation practices; Nutrient film techniques

(NFT)/ hydroponics; Detailed production technology of vegetables – tomato, capsicum ,lettuce & cucumber, under protected conditions ; Marketing of green house crops; Major diseases & insect pests of green house crops & their management .

Unit:-IV Scope & importance of vegetables seed industry in India; Different categories of seed; Techniques of seed production:-Annual & biennial habits with reference to seed production in different vegetables; Seed harvesting, curing, extraction, cleaning, drying, grading, packing & storage; Viability maintenance; Minimum seed germination standards for vegetable crops ; Seed certification and seed act.

7: Floriculture & Landscape Architecture   12 marks
Unit-I: History and Principles of landscaping ; Characteristics of formal & informal gardens ; Cultivation & landscape utilization of important trees, shrubs, climbers, ground covers, potted and shade loving plants ; Principles and practices of lawn management, principles of floriculture; Importance & planning of ornamental Garden; Types & styles of ornamental gardens.

Unit-II: Regulation of commercial flowers, Post harvest management; Oil extraction techniques in commercial flowers; Dry flower arrangements , Making of greetings ; Flower dyeing ; Practicing the art of bonsai-wiring, selection of plants and training the bonsai plants; Constructed features- greenhouse, conservatory design; Economics of commercial flowers.

Unit:-III Production technology of Rose, Jasmine , Chrysanthemum, Gladiolus , Marigold, Tuberose, Lilium, Gerbera, Dahlia, Carnation , Anthurium & Orchids both under open and green house conditions; Pot culture; Cacti and Succulents; Scope & importance of flower seed industry in India; Seed harvesting, curing, extraction, cleaning, drying, grading, packing & storage of flower crops; Minimum seed germination standards for flower crops .

8: Plant Pathology   12 marks
UNIT-I: Pesticides- History, Production and Consumption of pesticides in India and world,. Introduction- Important plant pathogenic organisms- different groups- fungi, bacteria, fastidious vesicular bacteria, phytoplasmas, spiroplasmas, viruses, viriods, algae, protozoa and phanerogamic parasites with examples of diseases caused by them. Characteristics of prokaryotic and eukaryotic organisms, integrated diseases management; sterilization, disinfection and pasteurization; Koch;s postulates; etiological agents of rusts, smuts, powdery/downy mildews, wilts, yellows, mosaic, necrosis, enations, blights and witchesbrooms; pH , buffer, vitamins, Major pests and diseases of major field crops like rice, wheat, Maize, rapeseed mustard, pulses, vegetable/fruit crops, chickpea, and their management.,

UNIT-II: Microflora of Rhizosphere and Phyllosphere ,microbes in composting Microbiology of water and food, Importance of stored grain pests, types of damage of stored product insects. Application of biotechnology in plant disease management – Importance, production of pathogen free plants through tissue culture techniques. Development of disease resistant transgenic plants through gene cloning. Importance of Mushrooms morphology and types of cultivated Mushrooms. Disease and pests of Mushroom and their management. Post harvest handling of Mushrooms.

9: Entomology   12 marks
UNIT-I: Classification of animal kingdom up to class; distinguishing characters up to orders in class general organization of an insect external morphology; metamorphosis and moulting; different physiological systems; insect pests of agricultural and horticultural crops, and their stored/processed products, insect vectors of plant disease; pests of household, medical and veterinary importance and their control; useful and beneficial insects like honeybee, lac insect, silkworm and pollinators; important plant parasitic nematodes and their control; entomopathogenic nematodes, pest surveillance and sampling; basic principles of insect pest management-cultural, mechanical, physical, biological control (bio-control agents, techniques in biocontrol, biopesticides, microbial pesticides), host plant resistance, insecticidal (classification, mode of action, formulations), quarantine, regulatory and other novel techniques; plant protection equipments; safety measures in handling of pesticides; biotechnological approaches in IPM.

10: Agricultural Economics   **12 marks**

UNIT-I: Elementary principles of economics importance of Agriculture/Forestry/ livestock in national economy. Theory of consumer behavior, theory of demand, elasticity of demand, indifference curve analysis, theory of firm, cost curves, theory of supply, price determination , market classification, concept of macroeconomics, money and banking, national income. Agricultural marketing-role, practice , institutions, cooperatives, capital formation in agriculture agrarian reforms, globalization, WTO & its impact on Indian agriculture.

11: Agricultural Extension Education   **12 marks**

UNIT-I: Education and their characteristics. Teaching-Learning process Extension Education and Agricultural Extension Concepts, Objectives and Principles. Sociology and Rural Sociology and its Classification. Motivation and its role. Social stratification and its form. Social Institutions and its role and role of Social change –Classification, Role of a leader, Different methods Training learning processes and Educational Psychology.

UNIT-II: Rural development and developmental programmes of pre and post independence era, community development Programme - National Extension service and Panchayati Raj system types, powers and functions. Agricultural Development Programmes -Entrepreneur behaviour, Infrastructure and Policy support for entrepreneurship forecasting market demand, sustainability of enterprise. Technical Appraisal.

UNIT-III: Communication Extension Programme Planning Project, Importance, Principles and Steps in Programme Development process, Monitoring and Evaluation of Extension Programmes Extension Teaching methods, Result Demonstration, Field trials Group contact methods and Field Trips Symposium, Panel, Debate, Forum, Buzz group, Workshop, Brain Storming, Seminar and Conference, Mass contact Methods Merits & Demerits. Factors influencing in selection of Extension Teaching Methods and Combination (Media Mix) of teaching methods. Innovative Information sources- Internet, Cyber Cafes, Video and Tele conferences, Kisan Call centers, Consultancy clinics. Agricultural and Journalism innovation. Models of adoption process, Innovation – Decision process – Elements, Adopter categories and their characteristics, factors influencing adoption process.

Code 03: Major Subject Group- Statistics

1: General Agriculture   **30 marks**

Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; biopesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

2: Statistics   **120 marks**

UNIT-I: Mathematics: Real and complex numbers; polynomial and roots; de Moivre's theorem and its applications. Elements of set theory-De Morgan's laws; vector space, linear independence orthogonality; matrices addition and multiplication, rank of matrix , determinants, inverse of matrix ,solution of a system of linear equations, characteristic roots and vectors; convergence of infinite sequences and infinite series-tests for convergence, absolute convergence ; co-ordinate geometry in two dimensions-line, circle, parabola, ellipse and hyperbola. Differential calculus: limits, differentiation of function of a single variable; Tylor's and Maclaurin's theorem, composite functions, total derivatives, derivative of an implicit function, change of variables, Jocabians. Integral calculus; integration by simple methods, standard forms, simple definite integrals, double integrals, change of order of integration, Gamma and Beta functions, application of double integrals to find area. Ordinary differential

equations: differential equations of first order, Exact and Bernoullis's differential equations, equations reducible to exact form by integrating factors, equations of first order and higher degree, Clairaut's equation, methods of finding complementaryfunctions and particular integrals Calculus offinite differences, interpolation; numerical differentiation and integration, difference equations; solution of simple non-linear equations by numerical methods like Newton method.

UNIT-II: Introduction:Statistics-definition , use and limitations; Frequency Distribution and Curves; Measures of Central Tendency : Arithmetic mean; Geometric mean, Harmonic mean, Median, Mode; measures of Dispersion: Range , Mean deviation, Quartile deviation, Variance and Coefficient of Variation, Probability: Definition and concepts , law of addition and multiplication, conditional probability, Bayes' theorem; Binomial, multinomial, Poisson and normal distribution; Introduction to sampling: Random sampling; standard Error; Tests of Significance-Types of Errors, Null Hypothesis, Level of Significance-Testing of hypothesis; Large sample Test- SND test for Means, single sample and two samples; Student's t-test for Single Sample, Two Samples and Paired t test. F test; Chi-Square Test for goodness of fit and independence of attributes; Correlation and Regression and associated tests of significance. Experimental Designs: basic principles, Analysis of variance, Completely Randomized Design (CRD), Randomized Block Design (RBD).

Code 04: Major Subject Group - Forestry

1: General Agriculture   30 marks

Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; biopesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

2: Forestry   90 marks.

UNIT-I: Forest-importance, types, classification; ecosystem , biotic and abiotic components; ecological succession and climax; nursery and planting techniques; social forestry , farm forestry, urban forestry , community forestry; forest menstruation, forest management; silvicultural practices, natural regeneration; man-made plantations, shifting cultivation, taungya; dendrology, hardwoods, softwoods, pulp woods, fuel woods, multipurpose tree species; wasteland management. Agroforestry- importance and classification; forest soils, classification and conservation, watershed management; tree improvement- forest genetics and biotechnology; tree seed technology; rangelands, wildlife- importance, abuse, depletion, management; major and minor forest products including medicinal and aromatic plants; forest inventory, aerial photo interpretation and remote sensing; forest depletion and degradation - importance and impact on environment; global warming, role of forests and trees in climate mitigation; tree diseases, wood decay and discolouration; tree pests, integrated pest and disease management; biological and chemical wood preservation; forest conservation, Indian forest policies, Indian forest act; forest engineering; forest economics, joint forest management and tribology.

3: Plant Pathology   15 marks

UNIT-I: Pesticides- History, Production and Consumption of pesticides in India and world,. Introduction- Important plant pathogenic organisms- different groups- fungi, bacteria, fastidious vesicular bacteria, phytoplasmas, spiroplasmas, viruses, viriods, algae, protozoa and phanerogamic parasites with examples of diseases caused by them. Characteristics of prokaryotic and eukaryotic organisms, integrated diseases management; sterilization, disinfection and pasteurization; Koch;s postulates; etiological agents of rusts,

smuts, powdery/downy mildews, wilts, yellows, mosaic, necrosis, enations, blights and witches brooms; pH , buffer, vitamins, Major pests and diseases of forest trees and their management.,

UNIT-II: Microflora of Rhizosphere and Phyllosphere ,microbes in composting Microbiology of water and food, Application of biotechnology in plant disease management – Importance, production of pathogen free plants through tissue culture techniques. Development of disease resistant transgenic plants through gene cloning.

4: Entomology   **15 marks**
UNIT-I: Classification of animal kingdom up to class; distinguishing characters up to orders in class general organization of an insect external morphology; metamorphosis and moulting; different physiological systems; insect pests of agricultural and horticultural crops, and their stored/processed products, insect vectors of plant disease; pests of household, medical and veterinary importance and their control; useful and beneficial insects like honeybee, lac insect, silkworm and pollinators; important plant parasitic nematodes and their control; entomopathogenic nematodes, pest surveillance and sampling; basic principles of insect pest management-cultural, mechanical, physical, biological control (biocontrol agents, techniques in biocontrol, biopesticides, microbial pesticides), host plant resistance, insecticidal (classification, mode of action, formulations), quarantine, regulatory and other novel techniques; plant protection equipments; safety measures in handling of pesticides; biotechnological approaches in IPM.

Code 05: Major Subject Group- Sericulture

1: General Agriculture   **30 marks**
Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; biopesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

2: Sericulture   **90 marks**
Unit-I: Introduction and brief history of Sericulture, Morphology and systematic of silkworm, Anatomy of silkworm- reproductive system, digestive system, nervous system and silk gland, Life cycle of silkworm, Disinfection and disinfectants used in Sericulture, Eggs their incubation, brushing, Chawki rearing, late age rearing moulting, seriposition and post cocoon operations, Grainage operations, Silkworm rearing technology, Diseases and pests of silkworm, Different silkworms and their host plants, Taxonomy and systematic of mulberry, Propagation and cultivation practices, Application of manures and fertilizers, Training and pruning, Leaf quality and its importance, leaf harvesting and preservation, Chawki rearing garden, Diseases and pests of mulberry.

Unit-II: Mendel's laws of inheritance and exceptions to the laws. Types of gene interactions, Pleiotropism-Penetrance and expressivity. Multiple alleles, Quantitative traits and qualitative traits and differences between them, Multiple factor hypothesis. Ultra structure of cell and cell organelles and their functions. Study of chromosome structure, morphology, number and types-karyotype and ideogram. Numerical chromosomal aberrations (Polyploidy) . Structural chromosomal aberrations. Mitosis and meiosis-their significance and differences between them. DNA and its structure, function, types, modes of replication and repair. Cytoplasmic inheritance-its characteristic features and differences between chromosomal and cytoplasmic inheritance. Mutation - its characteristic features, methods of inducing mutations and ClB technique. Gene expression and differential gene activation. Lac operon and fine structure of gene.

3: Plant Pathology   15 marks

UNIT-I: Pesticides- History, Production and Consumption of pesticides in India and world,. Introduction-Important plant pathogenic organisms- different groups- fungi, bacteria, fastidious vesicular bacteria, phytoplasmas, spiroplasmas, viruses, viriods, algae, protozoa and phanerogamic parasites with examples of diseases caused by them. Characteristics of prokaryotic and eukaryotic organisms, integrated diseases management; sterilization, disinfection and pasteurization; Koch;s postulates; etiological agents of rusts, smuts, powdery/downy mildews, wilts, yellows, mosaic, necrosis, enations, blights and witches brooms; pH , buffer, vitamins, Major pests and diseases of forest trees and their management.

UNIT-II: Microflora of Rhizosphere and Phyllosphere ,microbes in composting Microbiology of water and food, Application of biotechnology in plant disease management – Importance, production of pathogen free plants through tissue culture techniques. Development of disease resistant transgenic plants through gene cloning.

4: Entomology   15 marks

UNIT-I: Classification of animal kingdom up to class; distinguishing characters up to orders in class general organization of an insect external morphology; metamorphosis and moulting; different physiological systems; insect pests of agricultural and horticultural crops, and their stored/processed products, insect vectors of plant disease; pests of household, medical and veterinary importance and their control; useful and beneficial insects like honeybee, lac insect, silkworm and pollinators; important plant parasitic nematodes and their control; entomopathogenic nematodes, pest surveillance and sampling; basic principles of insect pest management-cultural, mechanical, physical, biological control (bio control agents, techniques in bio control, bio pesticides, microbial pesticides), host plant resistance, insecticidal (classification, mode of action, formulations), quarantine, regulatory and other novel techniques; plant protection equipments; safety measures in handling of pesticides; biotechnological approaches in IPM.

Code 06: Major Subject Group- Agricultural Engineering

1: General Agriculture   30 marks

Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; biopesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

UNIT-I: Elementary Statistics and theory of probability, differential and integral calculus, linear algebra and Fourier series, differential equations, vector algebra & vector calculus, elementary numerical analysis**.** *Electric* motors: Types, performance, selection, Installation and maintenance, measuring instruments, fundamentals of computers, power distribution. Thermodynamic principles; fluid mechanics, theory of machines   **(10 marks)**

UNIT-II: Soil mechanics, soil classification, compaction & shear strength of soils, engineering mechanics,strength of materials , Importance of farm equipment and role of mechanization in enhancing productivity & profitability of Indian agriculture; analysis of forces, design and production of farm machinery and power units; mechanics of tillage &traction operation, repair and maintenance of farm machines and equipment, farm engines; tractors and power tillers; tractor stability and operators comfort; field capacity and cost analysis; test codes and procedure; safety and ergonomic principles. Role of energy in economic development; solar, wind and bio-energy; biogas plants & gasifiers; bio-fuels from biomass; collection, characterization and storage of biomass, solar cookers & solar refrigerators.

     (40 marks)

UNIT-III:-Biochemical and engineering properties of biological materials ;quality control & safety of raw and finished products. Principles, practices and equipments for drying, milling, separation and storage of agricultural produce and by-products; material handling equipment and operations; farmstead planning; heating & cooling load calculation; seed processing practices and equipments; food preservation methods and products development; refrigeration and air conditioning; cold stores; waste management, cost analysis& food processing plants layout, feasibility reports   **(30 marks)**

UNIT-IV: Surveying and leveling; hydrology, water resources in India; efficiency in water use; irrigation system and equipment; water conveyances and associated efficiency; soil-plant-water relationship; estimation of evaporation and water requirements of crop; water harvesting and use, farm ponds and reservoirs, command area development, land use capability classification, ground water development, wells and pumping equipment, soil erosion and its control, land shaping and grading equipment and practices, hydraulic structures, drainage of irrigated and humid areas; salt balance and reclamation of saline and alkaline soils.   **(40 marks)**

Code 07: Major Subject Group- Biotechnology

1: General Agriculture   **(30 Marks)**
Importance of agriculture in national economy; basic principles of crop production; cultivation of rice, maize, wheat, rapeseed, mustard, chickpea, pigeon-pea, tomato, and mango. Major soils of India; role of NPK and their deficiency symptoms. General structure and function of cell organelles; mitosis and meiosis; Mendelian genetics. Elementary knowledge of growth, development, photosynthesis, respiration and transpiration; Elements of economic botany. General structure and function of carbohydrates, proteins, nucleic acids, enzymes and vitamins. Major pests and diseases of rice, wheat, cotton, chickpea, sugarcane and their management. Organic farming; bio-fertilizers; biopesticides. Recombinant DNA technology; transgenic crops. Important rural development programmes in India; organizational set up of agricultural research, education and extension in India. Elements of statistics.

UNIT-I: Characteristics of prokaryotic and eukaryotic organisms; differences between fungi, bacteria, mycoplasms and viruses. Physical and chemical basis of heredity; chromosome structure. DNA replication, transcription and translation; genetic code; operon concept. Genetic engineering; restriction enzymes; vectors; gene cloning; gene transfer. Plant cell and tissue culture; micro-propagation; somaclonal variation. Transformation; recombination; General application of biotechnology. Molecular and immunological techniques. Concept of bioinformatics, genomics and proteomics.
          (40 marks)

UNIT-II: Organelle DNA mitochondria!, chloroplast; DNA sequencing principles and translation to large scale projects; Recognition of coding and non-coding sequences and gene annotation; Molecular Tools and Their Applications, Restriction enzymes, modification enzymes, DNA and RNA markers; Conventional cytogenetics, Physical mapping by restriction hybridization analysis, FISH and related techniques, Role of antisense and RNAi in crop improvement, regulated and tissue specific expression of transgenes for crop improvement, Terminator gene technology, Environmental issues associated with transgenic crops, food safety issues and risk assessment of transgenic food crops.   **(40 marks)**

UNIT-III: Plant physiology– importance in agriculture. Seed germination, viability and vigour. Photosynthesis- significance of C-3, C-4 and CAM pathway; photorespiration and its implications. Translocation of assimilates; dry matter partitioning; Harvest index of crops. Growth and development; growth analysis; crop-water relationship. Plant nutrients and their functions. Phytohormones and their physiological role. Photo-periodism and vernalisation; in flowering plants. Importance of biochemistry in agriculture. Acid-base concept and buffers; pH. Classification, structure and metabolic functions of carbohydrates, lipids and proteins. Structure and function of nucleic acids. Enzymes: structure, nomenclature, mechanism of action; vitamins and minerals as coenzymes and cofactors. Metabolic pathways: glycolysis, TCA cycle, fatty acid oxidation, triglyceride biosynthesis. Electron transport chain; ATP formation.   **(40 marks)**

Code 08: Major Subject Group- Fisheries: (150)

Unit-I   Classification and taxonomical characteristics of cultivable fisheries. crustaceans and molluscs. Fresh water, brackish water and marine fishery resources of India, marine fisheries of the world. Estuarine, lacustrine. brackish water and pond ecosystem. Population dynamics, fish stock, abundance methods and analysis. Conservation and management of fishery resources. Fisheries legislations and law of the water bodies. Impact of over exploitation and climate change on fisheries resources.

UNIT-II Reproduction and breeding behaviour in fishes and shellfishes, brood stock improvement, maturity and fecundity studies. Induced spawning methods and seed production, natural fish seed collection and rearing methods. Types of eggs and development of larval stages of fin fishes and shellfishes. Preparation and management of fresh water and brackish water fishponds. Cultivable species identification, introduction of exotic fishes in India. Culture methods: Pen and cage culture practices, crap and shrimp hatchery management, basic aspects of biotechnology in relation to fisheries.

UNIT-III Important limnological, oceanographical and biological parameters in relation to fisheries of lotic and lentic waters, biological productivity and its impact on fisheries. Environmental impact assessment on fisheries in lentic and lotic waters. Biological, parameters including energy flow, community ecology and aquatic association, biodiversity and its conservation, aquatic pollution and its management.

UNIT-IV Common crafts and gears used for fish capture. Boat building material and demerits of wood, steel, aluminum, Ferro cement and FRP. Different types of fibres and netting materials and their characteristics, preservation of netting. parts of a trammel net, purse-scene, gill net and tuna long line.

UNIT-V Food chemistry, fundamentals of microbiology. General methods of fish preservation and fishery by products. Canning and packaging techniques, processing and product development techniques.

UNIT-VI Introduction to fishery economics and concepts of cooperative, marketing and banking management. Supply v/s demand economics of hatchery management and fish culture operations. Profit maximization. Problems in estimating costs and returns in fisheries. WTO agreements in Fisheries sector, intellectual property rights (1PR) and international fish trade. Basics of statistics in fisheries and computer science.

UNIT-VII Fisheries extension methods. Training and education needs in fisheries. Communication concepts, Modern tools of fishery extension education, participatory rural appraisal (PRA), Rapid rural appraisal (12RA). role of women in fisheries.

(Annexure –A)

Affidavit to Certify Sponsorship by NRI

I _____ son/daughter of _____

Resident of_____Telephone No. _____

Fax number _____ e-mail _____, do hereby solemnly

declare on oath as under:

1. That I migrated to _____ in the year _____ and my

   passport number is _____

2. That Mr./Ms/Mrs. _____ seeking admission to
   _____course at Sher-e-Kashmir University of Agricultural Sciences &
   Technology of Jammu, Jammu, India, is related to me (nature of relationship) _____

3. That I do hereby sponsor Mr./Ms/Mrs. _____ for
   admission to above stated course.

4. That I undertake to make full payment of prescribed fee for the entire duration of the
   programme in the manner as may be fixed by the University.

5. That I make this affidavit to certify my sponsorship as NRI of Mr./Ms/Mrs.
   _____ for admission to above mentioned course.

I solemnly declare on oath that the above facts and particulars are true to the best of my knowledge
and belief.

Deponent

Sworn to and appeared before me

at _____

on this day _____

_____
Signature and seal of Solicitor

Note: To be sworn in and attested in the country of NRI's residence

SAMPLE OF OPTIONS FORM FOR COUNSELLING

Counselling Date: -2023   _____ S.No.

Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu

DISCIPLINE ALLOTMENT PREFERENCE FORMAT FOR SKUAST-J CET COUNSELLING-2023

Roll No. [   ]   Name [   ]

Category [   ]   Marks [   ]   Rank [   ]

Telephone/cell No. [   ]   Email ID [   ]

OPTIONS/PREFERENCE FORMAT FOR ALLOTMENT OF DISCIPLINE

S.No.	Name of the Discipline where you desire admission (in order of preference)
1.	
2.	
3.	
4.	

I have deposited non-refundable counselling fee of Rs. 1000/-

Signature of the Candidate

Recommended provisionally for admission in Discipline _____

Signature of Counselling Committee Members.

Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu,

Chatha, Jammu, J & K 180 009, INDIA

www.skuast.org