IMPORTANT INFORMATION

Cost of brochure/application form:

Undergraduate degree	:	INR 1500.00
		INR 1550.00 (by post)
Masters degree	:	INR 3000.00
		INR 3050.00 (by post)

Event	**Date**
For both Under Graduate and Master Degree Programmes	
Commencement of issuance of brochure/ application form	15-04-2014
Last date of issuance of brochure / application form by post	12-05-2014
Last date of issuance of brochure/ application form in person	16-05-2014
Last date of receipt of application form	23-05-2014
Date of entrance examination	
Masters	14-06-2014 (Saturday)
Undergraduate	06-07-2014 (Sunday)
Test centers	
Undergraduate	• Srinagar /Jammu (to be notified separately)
Masters	• Faculty of Veterinary Sciences and Animal Husbandry, Shuhama, Alusteng, Ganderbal Phone: 0194-2262207
Date of counseling	To be notified separately
Availability of Brochure cum application form	• Office of the Registrar SKUAST-K, Shalimar Srinagar. • Faculty of Agriculture, Wadura, Sopore Kashmir. • Mountain Research Centre for field crops, Khudwani. • Mountain Agricultural Research & Extension Station, Leh • Mountain Agricultural Research & Extension Station, Kargil. • Principle Govt. MAM College Jammu, • Principal Govt. Degree College Rajouri, • Principal Govt Degree College, Kishtwar • Principal Govt. Degree College Doda • Principal Govt. Degree College, Ramban • Principal Govt. Degree College, Poonch • Principal Govt. Degree College, Kupwara
Submission of Application Form	**Registrar**, SKUAST-Kashmir, Shalimar Srinagar , 190025, (J&K) India Ph: 0194-2461271/2461349/2461258/2461259

Note:

1. **For all matters Resident Instructions Regulations of SKUAST-K shall prevail and decision of Vice Chancellor shall be final and binding.**

2. **University Entrance Test (UET-2014) is mandatory for seeking admission under all categories, including Self Finance.**

Prelude

Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu and Kashmir (SKUAST-J&K) was established in August, 1982 through an Act of Jammu & Kashmir State Legislature with its Jurisdiction throughout the State of Jammu and Kashmir. However, an amendment in Sher-e-Kashmir University of Agricultural Sciences & Technology (Act 1982) was promulgated through SRO-408 dated 20-09-1999, wherein SKUAST J&K was bifurcated into SKUAST-J & SKUAST-K with restriction of the territorial jurisdiction to Jammu & Kashmir Divisions, respectively. The SKUAST-K is a multi-campus institution with Head Quarter at Shalimar, Srinagar. The academic programmes of the University are being run at 05 campuses viz. Shalimar, Shuhama, Mirgund, Rangil & Wadura.

The University has excellent infrastructure and Facuties for Agricultural Research, Teaching and Extension Education. These three basic mandates of the University are being achieved by location and mandate specific 13 research Centers/ Stations/ Institutes, 05 different Subject Matter Faculties, 13 Krishi Vigyan Kendras and 01 Extension Training Centre placed in different districts of the Kashmir and Ladakh Division of the State. The University supports student learning, development, and achievement by providing tools and opportunities for their educational and professional growth.

The University is treading with big strides to achieve excellence specifically in Mountain Agricultural Systems of temperate and cold arid types. It is emerging in academic and research arenas as a seat of excellent learning and capacity building in Agriculture & allied sectors.

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1. ELIGIBILITY REQUIREMENTS

1.1 For Undergraduate Degree Programmes

• Bachelor of Veterinary Sciences & Animal Husbandry **(B.V.Sc. & A.H.)** • Bachelor of Science in Agriculture **(B.Sc. Agriculture)** • Bachelor of Science in Forestry **(B.Sc. Forestry)** • Bachelor of Science in Horticulture **(B.Sc. Horticulture)** • Bachelor of Science in Sericulture **(B.Sc. Sericulture)** • Bachelor of Fishery Science **(B. F. Sc)**	• A candidate seeking admission should be a permanent resident of J&K state or J&K state origin • With minimum age of 17 years as on 31-12-2014; • Should have passed 10+2/Higher Secondary Part-II or equivalent examination from a recognized statutory Board/University with **English, Physics, Chemistry & Biology** with aggregate marks not less than 50% marks for OM and 40% for reserve category candidates.
• Bachelor of Technology in Agricultural Engineering **(B. Tech. Agri. Engineering)**	• Same as above except should have passed 10+2/Higher Secondary Part-II or equivalent examination from a recognized statutory Board/University with **English, Physics, Chemistry & Mathematics** with aggregate marks not less than 50% marks for OM and 40% for reserve category candidates.

1.2. For Masters Degree Programmes

For all Masters Degree Programmes, a candidate must possess Bachelors degree in the relevant field with OGPA of not less than 2.80 on 4.000 scale or 6.00 on 10.00 scale or 60% aggregate marks in annual traditional system and must have GPA of not less than 3.00 on 4.000 scale or 7.00 on 10.00 scale or 60%marks in the subject concerned under traditional annual system.

Degree Programme	**Eligibility**
M.Sc. Agriculture	B.Sc. Agriculture
M.Sc. Horticulture	B.Sc. Horticulture/Agriculture
M.Sc. Forestry	B.Sc. Forestry / Agriculture/ Horticulture
M.Sc. Sericulture	B.Sc. Sericulture
Masters in Fisheries Science	Bachelors in Fishery Science (B.F.Sc)
Masters in Veterinary Sciences	B.V.Sc & A.H
M.Tech(Soil and Water Engineering)	B.Tech.(Agricultural Engineering)
M.Tech(Farm Power Machinary)	B.Tech.(Agricultural Engineering)
M.Sc. Statistics	B.Sc. Agriculture/ Horticulture/ Sericulture/ Forestry/ B.V.Sc. & A.H, and B.Sc. (Statistics and Mathematics)
M.Sc. Food Technology	B.Sc. Agriculture/Horticulture/Food Technology; and B. Tech. (Agricultural Engineering)
M.Sc. Environmental Science	B.Sc. Environmental Science/ Agriculture/ Horticulture/ Forestry/ Sericulture/ B.F.Sc / B.V.Sc.&A.H. and B.Tech. (Agricultural Engineering)
M.Sc. Biotechnology	B.Sc. Agriculture/ Horticulture/ Forestry/ Sericulture/ Biotechnology/B F Sc
M.V.Sc. Biotechnology	B.V.Sc & A.H
M.Sc. Microbiology	B.Sc. Agriculture/ Horticulture
M.Sc. Soil Sciences	B.Sc. Agriculture/ Horticulture
M.Sc. Biochemistry	B.Sc. Agriculture/ Horticulture/ Sericulture/ B.F.Sc/ B.Sc. Biochemistry; and Bachelors in pure and natural Science with Biochemistry as one of the subjects.
M.Sc. Agricultural Economics	B.Sc. Agriculture/ Horticulture/ Forestry /BVSc, & A.H / B.Sc. Home Science/ B.F.Sc./B.Sc. Dairy science./ B. Tech. (Agricultural Engineering)
M Sc. Agricultural Extension	B.Sc. Agriculture / Horticulture

NOTE: Only those candidates who have graduated from institutions/Universities recognized by ICAR/VCI/UGC are eligible to apply.

2. AVAILABILITY OF SEATS UNDER DIFFERENT STREAMS

Degree programme/ Discipline	Intake Capacity
2.1. UNDER GRADUATE PROGRAMMES OFFERED	
Bachelor of Veterinary Sciences & Animal Husbandry (B.V.Sc. & AH)	70
Bachelor of Fishery Science (B.F.Sc.)	20
Bachelor of Science in Forestry (B.Sc .Forestry)	30
Bachelor of Science in Agriculture (B.Sc. Agriculture)	56
Bachelor of Science in Horticulture (B.Sc. Horticulture)	40
Bachelor of Science in Sericulture (B.Sc. Sericulture)	10
Bachelor of Technology in Agricultural Engineering (B. Tech. Agri. Engineering)	20

NOTE:
In addition to above intake capacity there shall be certain number of seats available under Self Finance Category. Only those candidates who appear in University Entrance Test 2014 are eligible for Self Finance Category and selection will be on the basis of merit secured in the test.

Degree programme/ Discipline	Intake Capacity
2.2. MASTER DEGREE PROGRAMMES OFFERED	
Agronomy	06
Agricultural Extension	04
Agricultural Economics	03
Entomology	04
Floriculture & Landscape Architecture	10
Vegetable Science	08
Fruit Science	06
Genetics & Plant Breeding	06
Seed Science & Technology	04
Plant Pathology	08
Post Harvest Technology	02
Food Technology	03
Soil Science	02
Biotechnology	02
M. Tech (Soil & Water Engineering)	10
M.Tech. (Farm Power Mechinary)	03
Forestry	05
Statistics	04
Environmental Science	02
Sericulture	04
Bio-Chemistry	02
Microbiology	02
Animal Genetics & Breeding	01
Animal Nutrition	01
Animal Reproduction, Gynaecology & Obstetrics	01
Veterinary Surgery & Radiology	02
Veterinary Public Health	01
Veterinary Microbiology & Immunology	01
Veterinary Pathology	02
Veterinary Parasitology	01

Livestock Production & Management	01
Poultry Science	02
Livestock Products Technology	01
Veterinary Clinical Medicine and Jurisprudence	01
Animal Biotechnology	05
Veterinary Epidemiology & Preventive Medicine	01
Veterinary Biochemistry	02
Fisheries Sciences	04
Veterinary and Animal Husbandry Extension	01

NOTE:
In addition to above intake capacity there shall be certain number of seats available under Self Finance Category. Only those candidates who appear in University Entrance Test 2014 are eligible for Self Finance Category and selection will be on the basis of merit secured in the test.

2.3. Category-wise Breakup of Seats

a). Undergraduate Degree Programmes:

S.No.	Category	Category code	% age of seats
1	Open merit (OM)	01	50%
2	Residents of Backward Area (RBA)	02	20%
3	Scheduled Caste (SC)	03	8%
4	Scheduled Tribe Gujjar & Bakerwal (STGB)	04	6%
5	Resident of Area Adjoining Actual Line of Control(ALC)	05	3%
6	Children of Defence Personnel(Permanent Residents of the State (CDP)	06	3%
7	Scheduled Tribe Leh District (STL)	07	2%
8	Scheduled Tribe Kargil District (STK)	08	2%
9	Weak and underprivileged Classes (OSC)	09	2%
10	Candidates possessing Outstanding Proficiency in Sports (SP)	10	2%
11	Other Scheduled Tribes (STO)	11	1%
12	Children of State Police Personnel and Para-military Forces(JKPM)	12	1%

b). Master Degree Programmes:

S.No.	Category	Category	% age of seats
1	Open merit (OM)	21	65%
2	Residents of Backward Area (RBA)	22	10%
3	Scheduled Caste (SC)	23	4%
4	Scheduled Tribes (ST)	24	5%
5	Resident of Area Adjoining Actual Line of Control(ALC)	25	2%
6	Children of Defence Personnel/paramilitary forces and state police personnel (JKPM)	26	2%
7	Weak and Underprivileged Classes (OSC)	27	1%
8	Candidates possessing Outstanding Proficiency in Sports (SP)	28	1%
9	Open Merit category candidates other than those selected under S.No. 1 above who have served for a minimum period of 05 years in Rural Areas	29	10%

2.4. 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 Caste (SC)	
3	Scheduled Tribe Gujjar & Bakerwal (STGB)	
4	Resident of Area Adjoining Actual Line of Control(ALC)	
5.	Scheduled Tribe Leh District (STL)	
6.	Scheduled Tribe Kargil District (STK)	
7.	Weak and underprivileged Classes (OSC)	
8.	Other Scheduled Tribes (STO)	
9.	Children of Defence Personnel (Permanent Residents of the State) (CDP)	Commanding Officer of the unit not below the rank of DIG
10.	Candidates possessing outstanding proficiency in Sports (SP)	Secretary, J&K Sports Council
11.	Children of State Police Personnel and Para-military Forces (JKPM)	DIG concerned

3. MINIMUM RESIDENTIAL REQUIREMENTS

3.1. UNDERGRADUATE DEGREE PROGRAMMES

1	Bachelor of Veterinary Sciences & Animal Husbandry (B.V.Sc. & A.H.)	10 Semesters including six months internship programme
2	Bachelor of Science in Agriculture (B.Sc. Agriculture)	08 Semesters including one semester each for Experiential learning and Rural Agricultural Work Experience
3	Bachelor of Science in Forestry (B.Sc. Forestry)	08 Semesters including one semester each for Forestry Work Experience
4	Bachelor of Science in Horticulture (B.Sc. Horticulture)	08 Semesters including one semester each for Experiential learning and Rural Horticulture l Work Experience
5	Bachelor of Science in Sericulture (B.Sc. Sericulture)	08 Semesters including one semester each for Experiential learning and Rural Sericulture Work Experience
6	Bachelor of Fisheries Science (B.F.Sc.)	08 Semesters including one semester each for Experiential learning and Rural Fishery Work Experience
7	Bachelor of Technology in Agricultural Engineering (B. Tech. Agri. Engineering)	08 Semesters including one semester for Project work

3.2. MASTER DEGREE PROGRAMMES

All Master degree programmes are of two (02) years duration, comprising of 04 (Four) semesters. A candidate is required to complete requisite course work and thesis research work for/to earn the degree.

4. FEE STRUCTURE

4.1. Semester wise Fee Structure for all Undergraduate Degree Programmes:

S.No.	Particulars	
At the time of first admission i.e. Autumn 2014 (fresh candidates)		
University fee		
1	Admission fee/Re-admission fee	1127.00
2	University Registration fee	1127.00
3	Semester Registration fee	1127.00
4	Tuition fee	2181.00
	Sub Total (1-4)	**5562.00**
Recrurring semester fee (for each semester)		
Academic Charges		
5	Students Magazine fee	33.00
6	Identity card	46.00
7	Course work/examination fee	1127.00
8	Caution/security money for Library, Laboratory (refundable)	1000.00
	Sub Total (5-8)	**2206.00**
***Hostel charges**		
9	Mess security (refundable)	10000.00
10	Hostel charges	
	a. Single: 1. Electricity	1190.00
	2. Room rent	757.00
	b. Shared 1. Electricity	1190.00
	2. Room rent	541.00
	Sub Total (9-10): Single	**11947.00**
	Sub Total (9-10): Shared	**11731.00**
Students welfare charges		
11	Students welfare fund	46.00
12	Extra curricular fee	168.00
13	Medical fee	563.00
14	Red cross fund (Autumn semester of each academic year only)	67.00
	Sub Total (11-14)	**844.00**
Miscellaneous fee to be realized at the time of Autumn semester only		
15	Common room fund	33.00
16	Utensils, crockery & breakage fund	56.00
17	Sports fund	56.00
18	N.S.S. fund	67.00
	Sub Total (15-18)	**212.00**
Grand total without hostel		**8824.00**
Grand total with hostel (Single)		**20,771.00**
Grand total with hostel (shared)		**20,555.00**

**Limited hostel facilities are available for housing UG students*

4.2. Semester wise Fee Structure for all Master Degree Programmes:

S.No.	Particulars	
At the time of first admission i.e. Autumn 2014(fresh candidates)		
University fee		
1	Admission fee/Re-admission fee	1127.00
2	University Registration fee	1127.00
3	Semester Registration fee	1127.00
4	Tuition fee	2904.00
	Sub Total (1-4)	**6285.00**
Recrurring semester fee (for each semester)		
Academic charges		
5	Students Magazine fee	33.00
6	Identity card	46.00
7	Course work/examination fee	1127.00
8	Caution/security money for Library, Laboratory (refundable)	1250.00
	Sub Total (5-8)	**2456.00**
***Hostel Charges**		
9	Mess security (refundable)	10000.00
10	Hostel charges	
	a. Single: 1. Electricity	1190.00
	2. Room rent	757.00
	b.Shared 1. Electricity	1190.00
	2. Room rent	541.00
	Sub Total (9-10): Single	**11,947.00**
	Sub Total (9-10): Shared	**11,731.00**
Students welfare charges		
11	Students welfare fund	46.00
12	Extra curricular fee	168.00
13	Medical fee	563.00
14	Red cross fund (Autumn semester of each academic year only)	67.00
	Sub Total (11-14)	**844.00**
Miscellaneous fee to be realized at the time of Autumn semester only		
15	Common room fund	33.00
16	Utensils, crockery & breakage fund	56.00
17	Sports fund	56.00
18	N.S.S. fund	67.00
	Sub Total (15-18)	212.00
	Grand total without hostel	**9797.00**
	Grand total with hostel (Single)	**21,744.00**
	Grand total with hostel (shared)	**21528.00**

**Limited hostel facilities are available for housing PG students*

4.3 Semester wise fee structure for Self-Finance category (over and above normal fee)

1	B.Sc. Agriculture	20,000.00
2	B.Sc. Sericulture	20,000.00
3	B.Sc. Horticulture	20,000.00
4	B.Sc. Forestry	20,000.00
5	B.Tech (Agri. Engineering)	20,000.00
6	B.F.Sc.	20,000.00
7	B.V.Sc. & A.H.	80,000.00
8	Master degree programme	30,000.00

5. INSTRUCTIONS FOR CANDIDATE

1	Before mailing the application, check that
	Application form has been signed at specified places
	Recent clear colored photograph (passport size) taken on or after 01-04-2014 duly attested by the Head of the institution where the candidate had studied or the Gazetted Officer, have been pasted in the space provided
2	While submitting, application may be arranged in the following order
	Stamped Self- addressed Acknowledgement Card
	Duly filled OMR Application Form
	Photocopy of Matriculation certificate (showing date of birth of the candidate)
	Photocopy of marks sheet of 10+2 Examination
	Photocopy of State subject certificate
	Admit card envelope with postal stamp of Rs. 6.00
	Category certificate issued by competent authority for candidates applying under specific categories.
3	Application form which is Incomplete/Unsigned/Mutilated/without photograph/with unclear photograph/having overwriting/without requisite fee amount shall be rejected and no correspondence in this regard shall be entertained.
4	Online Application form shall be entertained only after requisite fee in shape of Demand Draft pledged to Comptroller SKUAST Kashmir is received along with computer generated application form complete in all respects in Registrar's Office by or before last date.
5	Merit obtained in UET shall determine the choice of programme
6	Duly completed application must be sent in original. Photo/Fax copies of the application shall not be considered.
7	SKUAST-K shall not be responsible for any postal delay/loss in transit in respect of submission of filled application forms.
8	Candidates submitting the application personally at SKUAST-K, Shalimar are advised to obtain acknowledgement card, duly signed by the concerned dealing person of the office.
9	Candidates are advised to retain photo copy of the Application and copy of Post Office receipt for dispatch through registered post or speed post for their personal record.
10	The records of the entrance test shall be preserved for a period of six months from the last date of counseling.
11	There will be no negative marking
12	The University shall endeavor to complete the admission process in all categories including up gradation within 15 days after the counseling. Thereafter the admission process may invariably close even if some seats are left unfilled.

Note: Ragging in any form, inside or outside the University campuses, is a cognizable offence.

6. HOW TO APPLY

1	Candidate can obtain application form along with information brochure from: • the Academic Section of Registrar's Office, Shalimar-Campus; • Faculty of Agriculture Sciences Wadura, Sopore, • Mountain Research Center for Field Crops Khudwani, • Mountain Agriculture Research and Extension Station Kargil; • High Mountain Arid Agriculture Research Institute Leh, • Principals of Govt .MAM collage Jammu, • Govt. Degree College Rajouri, • Govt. Degree College Doda, • Govt. Degree College Ramban, • Govt. Degree College Kishtwar, • Govt. Degree College Poonch, and • Govt. Degree College Kupwara against the payment of Rs. 1500/= (Rupees: one thousand five hundred only)for UG programme and Rs 3000/=(Rupees Three thousand only) for PG programme
2	Candidates can also apply online. Application and downloadable prospectus shall be available on SKUAST-K website: www.skuastkashmir.ac.in. Candidate has to visit www.skuastkashmir.ac.in and click the option of filling online application form of SKUAST-K, following guidance therein. He/she need not to purchase the separate prospectus or fill the form manually on OMR sheets. However printable version of online form should reach along with self addressed envelope of the size 4"x 8" with postal stamp of Rs. 6.00. Payment slip and requisite documents to Registrar's Office, by or before last date of submission of application form.
3	The application form duly filled in by the candidate in his/her own hand writing and complete in all respects accompanying with the attested copies of requisite academic /other documents should reach in the office of Registrar , SKUAST-Kashmir, Shalimar - 190025, Srinagar by or before 23-05-2014, during office hours on all working days (10.00 am to 5.00pm). **Do not staple the OMR Application form**
4	List of Requisite documents • Matriculation Certificate (Date of birth) • Marks sheet of 10+2/Higher Secondary Part-II or equivalent • State Subject (Permanent Resident Certificate of J&K origin) • UG Degree certificate (for Master degree programmes) • Admit Card envelope with postal stamp of Rs. 6.00 • Category Certificate (in respect of claim of belonging to any reserved category)
5	A candidate who applies for sitting in the entrance test, if found ineligible cannot claim refund of fees paid by him/her. Fee once paid shall not be refunded or reserved in any case for whatsoever reason

7. EXAMINATION/PREPARATION OF MERIT LIST/ SELECTION PROCEDURE

7.1. FOR UNDERGRADUATE DEGREE PROGRAMMES

7.1.a Test streams: The examination shall be conducted in following subject streams:

- Stream 01 comprising of physics, chemistry and Biology subjects (PCB)
- Stream 02 comprising of Physics, Chemistry and Mathematics (PCM)
- Stream 03 comprising of physics , chemistry , biology and Mathematics (PCBM)

Entrance Test will consist of a single sitting paper. The question paper shall comprise of multiple-choice questions, with 50 questions each from Physics, (serially numbered from 1-50), Chemistry (numbered from 51-100), biology (numbering from 101-150) and Mathematics (numbering from 151-200). The students shall have to attempt 150 questions pertaining to his stream (i.e. PCB or PCM). Time duration of the examination shall be 3 hours i.e. 60 minutes for each subject. **Candidates appearing for both PCBM stream shall have to attempt all 200 questions and duration of the examination shall be of 4 hours**.

S.No	Degree programme	Section	Subject	Marks	Time duration
1	B.V.Sc.& AH./,B.Sc.Agri./ Forestry / Horticulture / Sericulture / B.F.Sc & B.Tech Agri. Engineering (common for PCB, PCM and PCBM)	A B	Physics Chemistry	50 marks 50 marks	60 minutes for each subject (120 minutes=2hrs)
2	B.V.Sc. & AH., B.Sc.Agri. / Forestry / Horticulture / Sericulture. /B .F. Sc (for PCB and PCBM)	C	Biology	50 marks	60 minutes
3	B.Tech. Agri. Engineering (for PCM and PCBM)	D	Mathematics	50 marks	60 minutes

7.1. b. Syllabus for Undergraduate Degree Programmes Examination

For admission to UG courses, the question paper will be based on the latest syllabus adopted by J&K Board of School Education (JKBOSE). The detailed syllabus shall be available on the university website **www.skuastkashmir.ac.in and copy of the syllabus is enclosed as Annexure-III.**

7.1.c. Mode of Selection in Case of Tie in the Merit List

Following procedure will be followed on the basis of marks obtained in 10+2 level

B.V.Sc.&AH.,B.Sc.Agriculture / Forestry / Horticulture/ Sericulture/B.F.Sc		**B.Tech. Agri.Engineering**	
1	Aggregate percentage of marks (English, Physics, Chemistry & Biology)	1	Aggregate percentage of marks (English, Physics, Chemistry & Mathematics)
2	Aggregate percentage of marks (Physics, Chemistry & Biology) in case of tie at No.1 above.	2	Aggregate percentage of marks (Physics, Chemistry & Mathematics) in case of tie at No.1 above.
3	Aggregate percentage of marks (Chemistry & Biology) in case of tie at No.2 above.	3.	Aggregate percentage of marks (Chemistry & Mathematics) in case of tie at No.2 above.
4	Aggregate percentage of marks (Biology only) in case of tie at No.3 above.	4.	Aggregate percentage of marks (Mathematics only) in case of tie at No.3 above.
5	Candidates older in age in case of tie at No.4 above.	5.	Candidates older in age in case of tie at No.4 above.

7.2 FOR MASTER DEGREE PROGRAMMES

7.2.a. University Entrance Test Paper

For Masters degree courses, the University Entrance Test will consist of a single sitting paper of three hour duration comprising 180 objective questions. Selection list will be prepared on the basis of merit obtained by candidates at University Entrance Test for Master Degree Programmes and discipline allotted at the time of counseling on the basis of merit obtained in entrance test. Further where there is common eligibility at graduate level inter se merit shall be meshed in order to draw a common panel wherever it is applicable and discipline allocated giving consideration to close relation of the degree at graduate level with the subject chosen at master's level.

7.2.b. Syllabus for Master Degree Programmes Examination

Syllabus for admission to various Masters Courses will be based on ICAR syllabus with modifications wherever deemed necessary. The detailed syllabus will be available on the university website www.skuastkashmir.ac.in

7.2.c Mode of selection in Case of Tie in the Merit List

Following procedure will be followed on the basis of marks obtained in at Graduation Level.

1. OGPA of the candidates at Bachelors level.
2. Aggregate grade point in the concerned subject at Bachelors level in which admission is sought.
3. Candidates older in age incase of tie at point number 2

8. SCHEME OF EXAMINATION

1. The medium of test will be English.
2. The candidates have to report 30-minute ahead of scheduled time before commencement of examination and occupy their respective seats to facilitate verification of candidature etc.
3. The test will be of objective type. The candidates will be provided with a question paper booklet and OMR answer sheet.
4. **Question paper booklet** will have Multiple Choice Objective Type Questions. Each question will be followed by four alternatives marked as A), B), C) and D) out of which only one will have to be marked in OMR answer sheet.
5. **OMR Answer Sheet:** The specimen copy of the answer sheet is provided in the Information Brochure. Candidates are advised to go through it and be conversant with the requirements of giving particulars and marking the answers, to avoid any difficulty/mistake or loss of time during examination.
6. As the OMR sheet is scannable on optical scanner, the candidate must ensure that the answer sheet is not folded and no stray marks are made on it.
7. The candidates will fill-in the following particulars on the OMR Answer Sheet in the appropriate box(s).
   Roll No.
   Question Paper Booklet No.
   Name
   Signature of the candidate
8. **Marking of Responses in the OMR Answer Sheet.** The candidate shall indicate his response to the question by darkening the appropriate circle/ovals completely.
9. If more than one circle is darkened or if the response is marked in any other manner, the answer shall be treated as wrong and shall be rejected.
10. A slight or faintly darkened circle may also lead to rejection of answer.
11. If the candidate does not want to attempt any question, he/she should leave it blank.
12. For each correct response the candidate will get one mark.
13. There will be no negative marking.
14. **Important instructions for marking:**
    - Darken the appropriate circle with blue/black ballpoint pen only.
    - Completely darken only one circle for each entry/question.
    - Make the mark only in the space provided in the OMR Answer Sheet. Erasing, cutting and overwriting are not allowed.
15. All rough work should be done in the test booklet only. Do not make any rough work on the OMR Answer Sheet.

16. **Procedure to be followed in the Examination Hall:**
    - Sealed question paper booklet along with OMR answer sheet will be provided to the candidates ten minutes before the commencement of the Entrance Test.
    - Immediately on receipt of the question paper booklet and OMR answer sheet the candidate will fill in the required particulars on the cover page of the question paper booklet/answer sheet with **ballpoint pen** only (**blue/black**) and go through the instructions. He/She will open the seal of the booklet only when asked to do so by the invigilator.
    - The test will start exactly at the time mentioned in the admit card and an announcement to this effect will be made by the invigilator.
    - During the examination time, the Invigilator will check the admit card of the candidate and satisfy him/herself about the identity of each candidate. The **Invigilator will also put his/her signature** at appropriate place provided on the answer sheet.
    - The candidates shall bring their own ballpoint pens of good quality. These will neither provided nor allowed to be borrowed in the examination hall.
    - After completing the test and before handing over the question paper booklet and answer sheet, the candidate should check again that all the particulars required in the question paper booklet and answer sheet have been correctly written. Ensure that the Roll No. and other particulars are correctly written in the OMR answer sheet.
    - A signal will be given at the beginning of the examination and at half time. The final signal will be given at the closing time when the candidate will stop marking the responses.
17. Carrying of cell phone, pager, calculator or any other electronic gadget to the examination centre is strictly prohibited. Neither SKUAST-K will make any arrangement for the safety of these items nor be it responsible for loss of any such item.

9. INSTRUCTIONS FOR FILLING UP OF 'OMR' APPLICATION FORM

Candidates are advised to fill the OMR application as follows:

1. Application form number
2. Gender: write 1 for male and 2 for female and darken the appropriate circle.
3. Degree applied for: write 1 for UG and 2 for PG and darken the appropriate circle.
4. Choice of Center: write center as per below and darken the appropriate circle.

Programme	**Centre**	**Code**
Undergraduate:	Srinagar	1
	Jammu	2
Masters: (only one centre)	Srinagar	1

5. Test Stream:

A) Undergraduate Write

01 for PCB (Physics, Chemistry, Biology),
02 for PCM (Physics, Chemistry, Mathematics and
03 for PCBM (Physics, Chemistry, Biology and Mathematics) and darken the appropriate circle.

B) Master degree programmes: write the subject code as below and darken the appropriate circle

Degree programme / Discipline	Test stream Code
Agricultural sciences	11
Horticultural sciences	12
Forestry	13
Environmental sciences	14
Statistics	15
Sericulture	16
Microbiology	17
Biochemistry	18
Food technology	19
Biotechnology	20
Agri. Engineering	21
Veterinary sciences	22
Fisheries sciences	23

6. **Name of the candidate:** write the name as entered in Matriculation certificate in capital letters leaving one space in between and darken the appropriate circle.
7. **Father's name:** write the name of your father as entered in Matriculation certificate in capital letters leaving one space in between and darken the appropriate circle.
8. **Date of birth:** write your date of birth as entered in Matriculation certificate in capital letters leaving one space in between and darken the appropriate circle.
9. **Age:** write your age as on 31-12-2014 and darken the appropriate circle.
10. **Category (UG):** Write the category in the box in capital letters and darken the appropriate circle.
11. **Category (PG):** Write the category in the box in capital letters and darken the appropriate circle.
12. **Mothers name:** write the name of your mother as entered in Matriculation certificate in capital letters leaving one space in between and darken the appropriate circle.
13. **Result of UG programme:** state whether the results have been declared or awaited and darken the appropriate circle.
14. **University/Institute last attended:** write the name of the university/institute last attended.
15. **OGPA/ percentage:** enter the overall grade point average and aggregate percentage in UG and darken the appropriate circle.
16. **Study Programme for which Admission is sought at Masters level:** enter your choice for the PG programme for which admission is being sought. A candidate can enter multiple choice but the final stream allotted will be decided by the inter se merit of the entrance test.
17. **Result of 10+2 examination:** state whether the results have been declared or awaited and darken the appropriate circle.
18. **Board/University:** write the name of the board/university last attended..
19. **Total aggregate percentage of marks in 10+2:** enter the aggregate percentage in 10+2 and darken the appropriate circle.
20. **Aggregate percentage of EPCB and EPCM:** enter the aggregate percentage in 10+2 in respect of EPCB (English, Physics, Chemistry, Biology) and EPCM (English, Physics, Chemistry, Math) and darken the appropriate circle.
21. **Cell number:** write your 10 digit cell number and darken the appropriate circle.
22. **Correspondence address:** write your name and permanent address along with pin code leaving one space.
23. **Fee details:** write the details of fee along with the amount, DD number/electronic transfer (NEFT) etc.
25. **Declaration:** the candidate shall write in his own handwriting the statement of declaration provided at Sr. No. 24 of the same page on OMR sheet.

NOTE: FOR FILLING ADMIT CARD

i) Candidate should paste recent passport size photo at the space provided duly attested by a gazetted officer.
ii) Candidates should inscribe left hand thumb impression (males) or Right hand thumb impression (females) at the space provided.
iii) Candidates should fill the admit cards in their own handwriting.
iv) Candidates should write name and permanent address along with pin code ,e mail address and put his signature in appropriate space.

10. SELECTION PROCEDURE

- Entrance Examination based Merit list of all the candidates and the candidates short listed for counseling will be declared and placed on the university website **http//skuastkashmir.ac.in** and published in leading local English/Urdu newspapers. There will be a counselling system to allot the available seats in order of merit drawn category wise. The counseling will be held for the candidates at the Main Campus Shalimar on the dates to be notified separately.
- The candidates short listed for the counseling for admission to various undergraduate or Master degree Programme will have to submit duly completed 'Counseling Form' (to be provided at the time of counseling) along with one set of attested copies of all the relevant documents.
- All original certificates/testimonials and other documents relating to admission issued by the competent authority are to be presented on the date of counseling. The candidates who do not produce original certificates/testimonials at the time of counseling shall not be entertained and shall lose their right to admission.
- The committee will also prepare select and waiting list. As soon as vacancy arises, the candidate(s) from the waiting list will be allotted seat(s) as per admission schedule. The Registrar, SKUAST-K will notify the waiting list of each programme on the university website **(http//skuastkashmir.ac.in).** If a candidate fails to register him/ her and deposit the fee by the date of registration, his/her candidature will be cancelled and seat shall be allotted to the next candidate on merit, in respective category.
- The eligibility for the candidates will be verified by the selection committee and shall be recommended for the admission to different programmes.

11. RESERVATION RIGHTS OF UNIVERSITY

The University reserves the right to:

1. Withdraw any or all seats and /or defer filling up of any or all seats advertised/notified.
2. Decrease or increase the number of seats advertised/notified.
3. Reject the application, if it is found that the candidate has misinformed the university through his/her application or has therein furnished wrong/false information or concealed the facts.
4. Cancel the admission of a candidate, if at any stage, it is found that he/she has obtained the admission by misrepresentation/suppression of the facts or that the admission was made erroneously.
5. Reject the incomplete application or applications received after the last date.
6. Any other information not contained in the information brochures or any amendment required to be made shall be notified separately and placed on the University web site www.skuastkashmir.ac.in

12 DISCLAIMER

The information contained in this brochure is of general nature for the candidates seeking admission to various degree programmes of the University. It is neither an exhaustive nor a legal document. The information contained herein is believed to be correct at the time of publication. However, the University reserves the right to make change(s) in the explicit provisions of this brochure as deemed necessary without any notice. The University will not be responsible for any hardship or expense incurred by any candidate or any other person due to such changes, additions, ommissions or errors. The candidates are advised to refer to the Academic Regulation and other statutory/administrative provisons applicable at a particular point of time on various aspects viz., system of education, residence in the University, hostels, award of scholarships, stipends, fellowships, medals, certificates of merit, and conduct in the University premises and alike.

Admissions to the University implies acceptance of all provisons given in the University Act, Statutes, Regulation and admission policy and changes that are made from time to time therein.

Jurisdiction

All disputes pertaining to admission to the University shall fall within the jurisdiction of Hon'ble High Court of Jammu and Kashmir State only.

Right to petition

No representation/petition against the selection shall be entertained after the lapse of one month from the date of delaration of selection list.

ANSWER SHEET FOR UNDER - GRADUATE
SKUAST-K

ROLL NUMBER	QUESTION BOOKLET NUMBER
1 0 0 2 2 5	2 0 0 1 4 5

Name of Candidate : YASIR AFZAL DAR
Father's Name : ABDUL KABIR DAR
Mother's Name : FATIMA

CANDIDATE'S SIGNATURE: yasir

INVIGILATOR'S SIGNATURE

OMR SHEET NO. 100001

INSTRUCTIONS FOR MARKING ANSWERS
1. Mark your answers completely with BLUE/BLACK Ball Point Pen.
2. Mark only one choice for each question as indicated below.

Correct Method : ● Ⓑ Ⓒ Ⓓ Wrong Methods : ⊗ ✓ ◒ ◉

INVIGILATOR'S SIGNATURE | COORDINATOR'S SIGNATURE

PHYSICS					CHEMISTRY					BIOLOGY					MATHEMATICS				
1	●	Ⓑ	Ⓒ	Ⓓ	51	●	Ⓑ	Ⓒ	Ⓓ	101	Ⓐ	Ⓑ	Ⓒ	Ⓓ	151	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ	52	Ⓐ	●	Ⓒ	Ⓓ	102	Ⓐ	Ⓑ	Ⓒ	Ⓓ	152	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3	Ⓐ	●	Ⓒ	Ⓓ	53	Ⓐ	Ⓑ	●	Ⓓ	103	Ⓐ	Ⓑ	Ⓒ	Ⓓ	153	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ	54	Ⓐ	Ⓑ	●	Ⓓ	104	Ⓐ	Ⓑ	Ⓒ	Ⓓ	154	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	●	Ⓓ	55	Ⓐ	Ⓑ	●	Ⓓ	105	Ⓐ	Ⓑ	Ⓒ	Ⓓ	155	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6	Ⓐ	Ⓑ	Ⓒ	Ⓓ	56	Ⓐ	Ⓑ	●	Ⓓ	106	Ⓐ	Ⓑ	Ⓒ	Ⓓ	156	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7	Ⓐ	Ⓑ	●	Ⓓ	57	Ⓐ	Ⓑ	Ⓒ	●	107	Ⓐ	Ⓑ	Ⓒ	Ⓓ	157	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8	Ⓐ	●	Ⓒ	Ⓓ	58	Ⓐ	Ⓑ	Ⓒ	●	108	Ⓐ	Ⓑ	Ⓒ	Ⓓ	158	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9	Ⓐ	Ⓑ	Ⓒ	Ⓓ	59	Ⓐ	Ⓑ	Ⓒ	●	109	Ⓐ	Ⓑ	Ⓒ	Ⓓ	159	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10	Ⓐ	Ⓑ	●	Ⓓ	60	Ⓐ	Ⓑ	Ⓒ	●	110	Ⓐ	Ⓑ	Ⓒ	Ⓓ	160	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ	61	Ⓐ	Ⓑ	●	Ⓓ	111	Ⓐ	Ⓑ	Ⓒ	Ⓓ	161	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12	Ⓐ	Ⓑ	Ⓒ	●	62	Ⓐ	●	Ⓒ	Ⓓ	112	Ⓐ	Ⓑ	Ⓒ	Ⓓ	162	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13	Ⓐ	Ⓑ	Ⓒ	Ⓓ	63	Ⓐ	●	Ⓒ	Ⓓ	113	Ⓐ	Ⓑ	Ⓒ	Ⓓ	163	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14	Ⓐ	●	Ⓒ	Ⓓ	64	Ⓐ	Ⓑ	●	Ⓓ	114	Ⓐ	Ⓑ	Ⓒ	Ⓓ	164	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15	Ⓐ	Ⓑ	Ⓒ	Ⓓ	65	Ⓐ	Ⓑ	Ⓒ	●	115	Ⓐ	Ⓑ	Ⓒ	Ⓓ	165	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16	Ⓐ	Ⓑ	●	Ⓓ	66	Ⓐ	Ⓑ	●	Ⓓ	116	Ⓐ	Ⓑ	Ⓒ	Ⓓ	166	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17	Ⓐ	Ⓑ	Ⓒ	Ⓓ	67	Ⓐ	Ⓑ	Ⓒ	Ⓓ	117	Ⓐ	Ⓑ	Ⓒ	Ⓓ	167	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18	Ⓐ	Ⓑ	Ⓒ	Ⓓ	68	Ⓐ	Ⓑ	●	Ⓓ	118	Ⓐ	Ⓑ	Ⓒ	Ⓓ	168	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19	Ⓐ	●	Ⓒ	Ⓓ	69	Ⓐ	Ⓑ	Ⓒ	●	119	Ⓐ	Ⓑ	Ⓒ	Ⓓ	169	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20	Ⓐ	Ⓑ	Ⓒ	Ⓓ	70	Ⓐ	Ⓑ	Ⓒ	Ⓓ	120	Ⓐ	Ⓑ	Ⓒ	Ⓓ	170	Ⓐ	Ⓑ	Ⓒ	Ⓓ
21	Ⓐ	●	Ⓒ	Ⓓ	71	Ⓐ	Ⓑ	●	Ⓓ	121	Ⓐ	Ⓑ	Ⓒ	Ⓓ	171	Ⓐ	Ⓑ	Ⓒ	Ⓓ
22	Ⓐ	Ⓑ	Ⓒ	●	72	Ⓐ	Ⓑ	Ⓒ	●	122	Ⓐ	Ⓑ	Ⓒ	Ⓓ	172	Ⓐ	Ⓑ	Ⓒ	Ⓓ
23	Ⓐ	Ⓑ	Ⓒ	Ⓓ	73	Ⓐ	Ⓑ	Ⓒ	Ⓓ	123	Ⓐ	Ⓑ	Ⓒ	Ⓓ	173	Ⓐ	Ⓑ	Ⓒ	Ⓓ
24	Ⓐ	Ⓑ	●	Ⓓ	74	Ⓐ	Ⓑ	●	Ⓓ	124	Ⓐ	Ⓑ	Ⓒ	Ⓓ	174	Ⓐ	Ⓑ	Ⓒ	Ⓓ
25	Ⓐ	Ⓑ	Ⓒ	Ⓓ	75	Ⓐ	Ⓑ	Ⓒ	Ⓓ	125	Ⓐ	Ⓑ	Ⓒ	Ⓓ	175	Ⓐ	Ⓑ	Ⓒ	Ⓓ
26	Ⓐ	●	Ⓒ	Ⓓ	76	Ⓐ	Ⓑ	Ⓒ	Ⓓ	126	Ⓐ	Ⓑ	Ⓒ	Ⓓ	176	Ⓐ	Ⓑ	Ⓒ	Ⓓ
27	Ⓐ	Ⓑ	●	Ⓓ	77	Ⓐ	Ⓑ	Ⓒ	Ⓓ	127	Ⓐ	Ⓑ	Ⓒ	Ⓓ	177	Ⓐ	Ⓑ	Ⓒ	Ⓓ
28	Ⓐ	Ⓑ	Ⓒ	Ⓓ	78	Ⓐ	Ⓑ	Ⓒ	Ⓓ	128	Ⓐ	Ⓑ	Ⓒ	Ⓓ	178	Ⓐ	Ⓑ	Ⓒ	Ⓓ
29	Ⓐ	Ⓑ	Ⓒ	●	79	Ⓐ	Ⓑ	Ⓒ	Ⓓ	129	Ⓐ	Ⓑ	Ⓒ	Ⓓ	179	Ⓐ	Ⓑ	Ⓒ	Ⓓ
30	Ⓐ	●	Ⓒ	Ⓓ	80	Ⓐ	Ⓑ	Ⓒ	Ⓓ	130	Ⓐ	Ⓑ	Ⓒ	Ⓓ	180	Ⓐ	Ⓑ	Ⓒ	Ⓓ
31	Ⓐ	Ⓑ	Ⓒ	Ⓓ	81	Ⓐ	Ⓑ	Ⓒ	Ⓓ	131	Ⓐ	Ⓑ	Ⓒ	Ⓓ	181	Ⓐ	Ⓑ	Ⓒ	Ⓓ
32	Ⓐ	Ⓑ	●	Ⓓ	82	Ⓐ	Ⓑ	Ⓒ	Ⓓ	132	Ⓐ	Ⓑ	Ⓒ	Ⓓ	182	Ⓐ	Ⓑ	Ⓒ	Ⓓ
33	Ⓐ	Ⓑ	Ⓒ	Ⓓ	83	Ⓐ	Ⓑ	Ⓒ	Ⓓ	133	Ⓐ	Ⓑ	Ⓒ	Ⓓ	183	Ⓐ	Ⓑ	Ⓒ	Ⓓ
34	Ⓐ	Ⓑ	Ⓒ	●	84	Ⓐ	Ⓑ	Ⓒ	Ⓓ	134	Ⓐ	Ⓑ	Ⓒ	Ⓓ	184	Ⓐ	Ⓑ	Ⓒ	Ⓓ
35	Ⓐ	Ⓑ	Ⓒ	Ⓓ	85	●	Ⓑ	Ⓒ	Ⓓ	135	Ⓐ	Ⓑ	Ⓒ	Ⓓ	185	Ⓐ	Ⓑ	Ⓒ	Ⓓ
36	Ⓐ	Ⓑ	Ⓒ	●	86	Ⓐ	●	Ⓒ	Ⓓ	136	Ⓐ	Ⓑ	Ⓒ	Ⓓ	186	Ⓐ	Ⓑ	Ⓒ	Ⓓ
37	Ⓐ	Ⓑ	Ⓒ	Ⓓ	87	Ⓐ	Ⓑ	Ⓒ	Ⓓ	137	Ⓐ	Ⓑ	Ⓒ	Ⓓ	187	Ⓐ	Ⓑ	Ⓒ	Ⓓ
38	Ⓐ	Ⓑ	Ⓒ	●	88	Ⓐ	Ⓑ	●	Ⓓ	138	Ⓐ	Ⓑ	Ⓒ	Ⓓ	188	Ⓐ	Ⓑ	Ⓒ	Ⓓ
39	Ⓐ	Ⓑ	Ⓒ	Ⓓ	89	Ⓐ	Ⓑ	Ⓒ	Ⓓ	139	Ⓐ	Ⓑ	Ⓒ	Ⓓ	189	Ⓐ	Ⓑ	Ⓒ	Ⓓ
40	Ⓐ	Ⓑ	Ⓒ	Ⓓ	90	Ⓐ	Ⓑ	Ⓒ	Ⓓ	140	Ⓐ	Ⓑ	Ⓒ	Ⓓ	190	Ⓐ	Ⓑ	Ⓒ	Ⓓ
41	Ⓐ	●	Ⓒ	Ⓓ	91	Ⓐ	Ⓑ	Ⓒ	●	141	Ⓐ	Ⓑ	Ⓒ	Ⓓ	191	Ⓐ	Ⓑ	Ⓒ	Ⓓ
42	Ⓐ	Ⓑ	Ⓒ	Ⓓ	92	Ⓐ	Ⓑ	Ⓒ	Ⓓ	142	Ⓐ	Ⓑ	Ⓒ	Ⓓ	192	Ⓐ	Ⓑ	Ⓒ	Ⓓ
43	Ⓐ	Ⓑ	Ⓒ	Ⓓ	93	Ⓐ	Ⓑ	Ⓒ	Ⓓ	143	Ⓐ	Ⓑ	Ⓒ	Ⓓ	193	Ⓐ	Ⓑ	Ⓒ	Ⓓ
44	Ⓐ	●	Ⓒ	Ⓓ	94	Ⓐ	●	Ⓒ	Ⓓ	144	Ⓐ	Ⓑ	Ⓒ	Ⓓ	194	Ⓐ	Ⓑ	Ⓒ	Ⓓ
45	Ⓐ	Ⓑ	Ⓒ	Ⓓ	95	Ⓐ	Ⓑ	Ⓒ	Ⓓ	145	Ⓐ	Ⓑ	Ⓒ	Ⓓ	195	Ⓐ	Ⓑ	Ⓒ	Ⓓ
46	Ⓐ	Ⓑ	Ⓒ	●	96	Ⓐ	Ⓑ	Ⓒ	Ⓓ	146	Ⓐ	Ⓑ	Ⓒ	Ⓓ	196	Ⓐ	Ⓑ	Ⓒ	Ⓓ
47	Ⓐ	Ⓑ	Ⓒ	Ⓓ	97	Ⓐ	Ⓑ	●	Ⓓ	147	Ⓐ	Ⓑ	Ⓒ	Ⓓ	197	Ⓐ	Ⓑ	Ⓒ	Ⓓ
48	Ⓐ	Ⓑ	●	Ⓓ	98	Ⓐ	Ⓑ	Ⓒ	●	148	Ⓐ	Ⓑ	Ⓒ	Ⓓ	198	Ⓐ	Ⓑ	Ⓒ	Ⓓ
49	Ⓐ	Ⓑ	Ⓒ	Ⓓ	99	Ⓐ	Ⓑ	Ⓒ	Ⓓ	149	Ⓐ	Ⓑ	Ⓒ	Ⓓ	199	Ⓐ	Ⓑ	Ⓒ	Ⓓ
50	Ⓐ	Ⓑ	Ⓒ	Ⓓ	100	Ⓐ	Ⓑ	Ⓒ	Ⓓ	150	Ⓐ	Ⓑ	Ⓒ	Ⓓ	200	Ⓐ	Ⓑ	Ⓒ	Ⓓ

2712

SHER-E-KASHMIR
UNIVERSITY OF AGRICULTURAL SCIENCES & TECHNOLOGY OF KASHMIR SIDE - I
SHALIMAR, 190025, SRINAGAR
APPLICATION FORM FOR ADMISSION TO VARIOUS UNDER-GRADUATE/MASTERS DEGREE PROGRAMMES.

Roll Number (to be filled by office)

2. GENDER 1 Male ● Female ②

IMPORTANT INSTRUCTIONS

(I) Read the Admission Brochure - carefully before filling the Application Form.
(II) Use HB Pencil only to darken the ovals ○.
(III) Darken the oval fully as ●.
(IV) Erase ● completely to change responses.
(V) Do not make any stray mark on this sheet. Do not staple OMR Application Form
(VI) Use Black Ball Point Pen for writing the particulars ☐ in boxes.
(VII) All Signatures should be with Black Ball Point Pen.
(VIII) Please retain a photocopy of this form for future reference.
(IX) Verify the Test Stream Code from the admission brochure before submitting the form.
(X) Filling of Date of Birth field is mandatory.
(XI) Candidate should not fold the application form.

3. DEGREE APPLIED FOR: 1 U.G. ● MASTERS ②

4. CHOICE OF CENTRE: 1 SRINAGAR ● JAMMU ②

5. TEST STREAM CODE: 0 3

1. Application Form No. 100001

6. NAME OF THE CANDIDATE: YASIR AFZAL DAR

8. DATE OF BIRTH: Day 02 Month 05 Year 95

9. AGE ON 31-12-2014: Days 29 Month 00 Year 18

10. CATEGORY FOR (U.G.): RBA

OM ○ STL ○
RBA ● STK ○
Schedule Caste ○ OSC ○
STGB ○ SP ○
ALC ○ STO ○
CDP ○ JKPM ○

11. CATEGORY FOR (P.G.): OM

OM ● Social Caste ○
RBA ○
Schedule Caste ○ Sports ○
ST ○
ALC ○ Rural Area Service ○
CDP ○

7. FATHER'S NAME: ABDUL KABIR DAR

12. MOTHER'S NAME: FATIMA

2713

OFFICE COPY (ADMIT CARD)

ENTRANCE TEST - 2014

Roll number *(to be filled by office)*

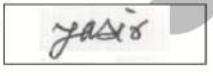
PERMANENT HOME ADDRESS *(WRITE IN CAPITAL LETTERS WITH BLACK BALL POINT PEN ONLY)*

Right thumb Impression for male
Left thumb Impression for female

NAME : YASIR AFZAL DAR
ADDRESS : LANE NO. 2
NOOR PORA
QAMARWARI
SRINAGAR
STATE : J & K PIN : 190003

Application Form No. 100001

CANDIDATE'S SIGNATURE



E-MAIL ID: yasirafzaldar12@yahoo.co.in

SIDE - II

FOR MASTERS PROGRAMME

13. RESULT OF UNDER-GRADUATE DEGREE DECLARED ○ AWAITED ○

14. UNIVERSITY/INSTITUTE ATTENDED

SKUAST-K

15. OVERALL GRADE POINT AVERAGE (OGPA) / %AGE

OGPA: 0 8 • 3 7

%AGE: 8 3 • 7 0 %

16. DEGREE PROGRAMME TO WHICH ADMISSION IS SOUGHT AT MASTERS LEVEL. *(Multiple choice permitted)*

1. AGRICULTURE SCIENCES ○	8. BIO-CHEMISTRY ○
2. HORTICULTURE SCIENCES ○	9. FOOD TECHNOLOGY ○
3. FORESTRY ○	10. MOLECULAR BIOLOGY & BIOTECH. ○
4. ENVIRONMENTAL SCIENCE ○	11. AGRICULTURAL ENGINEERING ○
5. STATISTICS ○	12. VETERINARY SCIENCES ○
6. SERICULTURE ○	13. FISHERIES SCIENCE ○
7. MICROBIOLOGY ○	

FOR U.G. PROGRAMME

17. RESULT OF 10+2 EXAMINATION DECLARED ○ AWAITED ○

18. BOARD /UNIVERSITY

J&K BOARD OF SCHOOL EDUCATION SRINAGAR

19. AGGREGATE PERCENTAGE OF MARKS AT 10+2 LEVEL.

9 1 • 2 3 %

20. AGGREGATE PERCENTAGE OF MARKS AT 10+2 LEVEL

EPCB: 9 0 • 3 4 %

EPCM: 8 8 • 7 6 %

21. CELL NUMBER

9 9 0 6 5 3 6 6 9 1

22. CORRESPONDENCE ADDRESS *(Leave one box blank between any two parts of the address).*

LANE NO 2 NOOR POR A QAMARWARI

SRINAGAR KASHMIR

P.O QAMARWARI DISTRICT SRINAGAR

STATE JAMMU AND KASHMIR PIN CODE 190003

23. FEE DETAILS

ACCOUNT NO. SB-0242040100004249
IFSC CODE :- JAKA0SKUAST

AMOUNT/BRANCH	DD NO./ Transfer No.	DATE

24. DECLARATION BY THE CANDIDATE

I, solemnly declare and affirm that the information furnished above is true to the best of my knowledge and nothing has been concealed/suppressed therein. I, declare, further that if any of the information furnished above is found to be false at the time of counselling/verification of required certificates, my candidature for admission be cancelled.

25. Please write the Declaration given above in own running handwriting.

I, solemnly declare and affirm that the information furnished above is true to the best of my knowledge and nothing has been concealed/suppressed therein. I, declare, further that if any of the information furnished above is found to be false at the time of counselling/verification of required certificates, my candidature for admission be cancelled.

.....

Jasir

Signature of the Candidate

TEST DATE FOR U.G. :- **06.07.2014 (Sunday)**

TEST DATE FOR MASTERS :- **14.06.2014 (Saturday)**

DURATION OF TEST :- **10.00 AM TO 1.00 PM /**

:- **10.00 AM TO 2.00 PM**

NAME OF TEST CENTRE AND VENUE ALLOTTED (To be filled by office)

ANSWER SHEET FOR POST GRADUATE COURSES
SKUAST-K

ROLL NUMBER	QUESTION BOOKLET NUMBER
0 0 0 1 4 5	1 0 0 0 0 1

Name of Candidate : YASIR AFZAL DAR
Father's Name : ABDUL KABIR DAR
Mother's Name : FATIMA

CANDIDATE'S SIGNATURE

INVIGILATOR'S SIGNATURE

OMR SHEET NO. 100001

INSTRUCTIONS FOR MARKING ANSWERS

1. Mark your answers completely with BLUE/BLACK Ball Point Pen.
2. Mark only one choice for each question as indicated below.

Correct Method : ● Ⓑ Ⓒ Ⓓ

Wrong Methods : ⊗ ✓ ◐ ◉

COORDINATOR'S SIGNATURE	SUBJECT CODE

ANSWER

1	●	Ⓑ	Ⓒ	Ⓓ	46	●	Ⓑ	Ⓒ	Ⓓ	91	●	Ⓑ	Ⓒ	Ⓓ	136	●	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ	47	Ⓐ	●	Ⓒ	Ⓓ	92	Ⓐ	Ⓑ	Ⓒ	Ⓓ	137	Ⓐ	●	Ⓒ	Ⓓ
3	Ⓐ	●	Ⓒ	Ⓓ	48	Ⓐ	Ⓑ	●	Ⓓ	93	Ⓐ	●	Ⓒ	Ⓓ	138	Ⓐ	Ⓑ	●	Ⓓ
4	Ⓐ	Ⓑ	●	Ⓓ	49	Ⓐ	Ⓑ	Ⓒ	●	94	Ⓐ	Ⓑ	Ⓒ	Ⓓ	139	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ	50	Ⓐ	Ⓑ	Ⓒ	Ⓓ	95	Ⓐ	Ⓑ	Ⓒ	●	140	Ⓐ	Ⓑ	Ⓒ	●
6	Ⓐ	Ⓑ	Ⓒ	●	51	Ⓐ	Ⓑ	●	Ⓓ	96	Ⓐ	Ⓑ	●	Ⓓ	141	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7	Ⓐ	Ⓑ	Ⓒ	Ⓓ	52	Ⓐ	Ⓑ	Ⓒ	●	97	Ⓐ	Ⓑ	Ⓒ	Ⓓ	142	Ⓐ	Ⓑ	●	Ⓓ
8	Ⓐ	●	Ⓒ	Ⓓ	53	Ⓐ	Ⓑ	●	Ⓓ	98	Ⓐ	●	Ⓒ	Ⓓ	143	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9	Ⓐ	Ⓑ	●	Ⓓ	54	Ⓐ	Ⓑ	Ⓒ	●	99	Ⓐ	Ⓑ	●	Ⓓ	144	Ⓐ	Ⓑ	Ⓒ	●
10	Ⓐ	Ⓑ	Ⓒ	●	55	Ⓐ	Ⓑ	Ⓒ	Ⓓ	100	Ⓐ	Ⓑ	Ⓒ	Ⓓ	145	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ	56	Ⓐ	Ⓑ	●	Ⓓ	101	Ⓐ	Ⓑ	Ⓒ	●	146	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12	Ⓐ	Ⓑ	●	Ⓓ	57	Ⓐ	Ⓑ	Ⓒ	Ⓓ	102	Ⓐ	Ⓑ	●	Ⓓ	147	Ⓐ	●	Ⓒ	Ⓓ
13	Ⓐ	●	Ⓒ	Ⓓ	58	Ⓐ	●	Ⓒ	Ⓓ	103	Ⓐ	Ⓑ	Ⓒ	Ⓓ	148	Ⓐ	Ⓑ	Ⓒ	●
14	Ⓐ	Ⓑ	Ⓒ	●	59	Ⓐ	Ⓑ	Ⓒ	Ⓓ	104	Ⓐ	●	Ⓒ	Ⓓ	149	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15	Ⓐ	●	Ⓒ	Ⓓ	60	Ⓐ	Ⓑ	●	Ⓓ	105	Ⓐ	Ⓑ	Ⓒ	Ⓓ	150	Ⓐ	Ⓑ	●	Ⓓ
16	Ⓐ	Ⓑ	●	Ⓓ	61	Ⓐ	Ⓑ	Ⓒ	●	106	Ⓐ	Ⓑ	Ⓒ	●	151	Ⓐ	Ⓑ	Ⓒ	●
17	Ⓐ	Ⓑ	Ⓒ	●	62	Ⓐ	Ⓑ	Ⓒ	●	107	Ⓐ	Ⓑ	Ⓒ	Ⓓ	152	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18	Ⓐ	Ⓑ	Ⓒ	●	63	Ⓐ	Ⓑ	●	Ⓓ	108	Ⓐ	Ⓑ	●	Ⓓ	153	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19	Ⓐ	Ⓑ	Ⓒ	●	64	Ⓐ	Ⓑ	●	Ⓓ	109	Ⓐ	Ⓑ	Ⓒ	●	154	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20	Ⓐ	Ⓑ	●	Ⓓ	65	Ⓐ	Ⓑ	Ⓒ	●	110	Ⓐ	Ⓑ	Ⓒ	Ⓓ	155	Ⓐ	●	Ⓒ	Ⓓ
21	Ⓐ	Ⓑ	●	Ⓓ	66	Ⓐ	●	Ⓒ	Ⓓ	111	Ⓐ	●	Ⓒ	Ⓓ	156	Ⓐ	Ⓑ	●	Ⓓ
22	Ⓐ	Ⓑ	Ⓒ	●	67	Ⓐ	Ⓑ	●	Ⓓ	112	Ⓐ	Ⓑ	Ⓒ	●	157	Ⓐ	Ⓑ	Ⓒ	Ⓓ
23	Ⓐ	Ⓑ	Ⓒ	Ⓓ	68	Ⓐ	Ⓑ	Ⓒ	Ⓓ	113	Ⓐ	Ⓑ	Ⓒ	Ⓓ	158	Ⓐ	Ⓑ	Ⓒ	●
24	Ⓐ	Ⓑ	Ⓒ	●	69	Ⓐ	Ⓑ	●	Ⓓ	114	Ⓐ	Ⓑ	●	Ⓓ	159	Ⓐ	Ⓑ	Ⓒ	Ⓓ
25	Ⓐ	Ⓑ	●	Ⓓ	70	Ⓐ	●	Ⓒ	Ⓓ	115	Ⓐ	Ⓑ	Ⓒ	Ⓓ	160	Ⓐ	Ⓑ	●	Ⓓ
26	Ⓐ	Ⓑ	●	Ⓓ	71	Ⓐ	Ⓑ	●	Ⓓ	116	Ⓐ	Ⓑ	Ⓒ	●	161	Ⓐ	Ⓑ	Ⓒ	●
27	Ⓐ	Ⓑ	Ⓒ	●	72	Ⓐ	Ⓑ	Ⓒ	●	117	Ⓐ	Ⓑ	Ⓒ	Ⓓ	162	Ⓐ	Ⓑ	Ⓒ	Ⓓ
28	Ⓐ	Ⓑ	●	Ⓓ	73	Ⓐ	Ⓑ	Ⓒ	Ⓓ	118	Ⓐ	Ⓑ	●	Ⓓ	163	Ⓐ	●	Ⓒ	Ⓓ
29	Ⓐ	Ⓑ	Ⓒ	●	74	Ⓐ	Ⓑ	Ⓒ	Ⓓ	119	Ⓐ	Ⓑ	Ⓒ	Ⓓ	164	Ⓐ	Ⓑ	Ⓒ	●
30	Ⓐ	Ⓑ	●	Ⓓ	75	Ⓐ	Ⓑ	Ⓒ	Ⓓ	120	Ⓐ	Ⓑ	Ⓒ	●	165	Ⓐ	Ⓑ	Ⓒ	Ⓓ
31	●	Ⓑ	Ⓒ	Ⓓ	76	Ⓐ	●	Ⓒ	Ⓓ	121	Ⓐ	Ⓑ	Ⓒ	Ⓓ	166	Ⓐ	●	Ⓒ	Ⓓ
32	Ⓐ	●	Ⓒ	Ⓓ	77	Ⓐ	Ⓑ	Ⓒ	Ⓓ	122	Ⓐ	Ⓑ	Ⓒ	Ⓓ	167	Ⓐ	Ⓑ	Ⓒ	Ⓓ
33	Ⓐ	Ⓑ	●	Ⓓ	78	Ⓐ	Ⓑ	●	Ⓓ	123	Ⓐ	●	Ⓒ	Ⓓ	168	Ⓐ	Ⓑ	Ⓒ	●
34	Ⓐ	Ⓑ	Ⓒ	●	79	Ⓐ	Ⓑ	Ⓒ	Ⓓ	124	Ⓐ	Ⓑ	●	Ⓓ	169	Ⓐ	Ⓑ	Ⓒ	Ⓓ
35	Ⓐ	Ⓑ	Ⓒ	Ⓓ	80	Ⓐ	Ⓑ	Ⓒ	●	125	Ⓐ	Ⓑ	Ⓒ	●	170	Ⓐ	Ⓑ	●	Ⓓ
36	Ⓐ	Ⓑ	Ⓒ	●	81	Ⓐ	Ⓑ	●	Ⓓ	126	Ⓐ	Ⓑ	Ⓒ	Ⓓ	171	Ⓐ	Ⓑ	Ⓒ	●
37	Ⓐ	Ⓑ	●	Ⓓ	82	Ⓐ	Ⓑ	Ⓒ	Ⓓ	127	Ⓐ	Ⓑ	Ⓒ	●	172	Ⓐ	Ⓑ	Ⓒ	Ⓓ
38	Ⓐ	●	Ⓒ	Ⓓ	83	Ⓐ	Ⓑ	Ⓒ	Ⓓ	128	Ⓐ	Ⓑ	Ⓒ	Ⓓ	173	Ⓐ	Ⓑ	●	Ⓓ
39	●	Ⓑ	Ⓒ	Ⓓ	84	Ⓐ	Ⓑ	Ⓒ	●	129	Ⓐ	Ⓑ	Ⓒ	Ⓓ	174	Ⓐ	Ⓑ	Ⓒ	Ⓓ
40	Ⓐ	●	Ⓒ	Ⓓ	85	Ⓐ	Ⓑ	Ⓒ	Ⓓ	130	Ⓐ	Ⓑ	Ⓒ	Ⓓ	175	Ⓐ	Ⓑ	Ⓒ	●
41	Ⓐ	Ⓑ	●	Ⓓ	86	Ⓐ	Ⓑ	Ⓒ	Ⓓ	131	Ⓐ	Ⓑ	Ⓒ	●	176	Ⓐ	●	Ⓒ	Ⓓ
42	Ⓐ	Ⓑ	Ⓒ	Ⓓ	87	Ⓐ	Ⓑ	Ⓒ	Ⓓ	132	Ⓐ	●	Ⓒ	Ⓓ	177	Ⓐ	Ⓑ	●	Ⓓ
43	Ⓐ	Ⓑ	●	Ⓓ	88	Ⓐ	Ⓑ	Ⓒ	●	133	Ⓐ	Ⓑ	●	Ⓓ	178	Ⓐ	Ⓑ	Ⓒ	●
44	Ⓐ	●	Ⓒ	Ⓓ	89	Ⓐ	Ⓑ	Ⓒ	Ⓓ	134	Ⓐ	Ⓑ	Ⓒ	●	179	Ⓐ	Ⓑ	●	Ⓓ
45	Ⓐ	Ⓑ	Ⓒ	●	90	Ⓐ	Ⓑ	Ⓒ	Ⓓ	135	Ⓐ	Ⓑ	Ⓒ	Ⓓ	180	Ⓐ	Ⓑ	Ⓒ	●

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Annexure-I

SUBMISSION OF AFFIDAVIT AT THE TIME OF ADMISSION

(For Undergraduate/Postgraduate Degree Programme admitted students)

I_____S/o,D/o_____
R/o_____Tehsil_____District_____
____ selected by SKUAST-Kashmir for admission into _____ Degree programme at SKUAST-Kashmir for the Academic year 2014-15 vide No._____ Dated _____ do hereby solemnly affirm and declare as under:

I will not indulge in any behavior or act that may come under the definition of ragging.

I will not hurt anyone psychologically or cause any other harm.

I will not participate in or propagate ragging in any form.

I hereby agree that if I am found guilty of any aspect of ragging, I may be punished as per the provisions of the UGC regulation or as per the law in force.

I hereby affirm that I have not been expelled or debarred from admission by any institution prior to admission in SKUAST- Kashmir.

I hereby affirm that I will not claim for refund of payment fee in case I leave the degree programme at my own.

I also affirm that at present, neither I am employed in nor I am on the rolls of any Academic /Professional/Technical/Govt./Private institution of the state/country.

I will submit migration certificate and other required certificates within 30 days of admission in SKUAST- Kashmir

Signature of Candidate

Verified at _____ today the _____day of_____. The statements stated above are correct to the best of our knowledge and belief and nothing has been concealed.

Signature of Candidate
(Fix Photograph)
Signature of Guardian

Annexure - II

A candidate selected in more than one course, at the time of counseling shall opt for the programme of his/ her choice as per his / her ranking in the merit list and available at that point of time of counseling. However, he / she will forfeit the claim for any other courses wherever his/ her name figures in the merit list of each degree / discipline. An affidavit shall be signed by his/ her parents to this effect. The same undertaking shall be given by the candidate at the time of counseling in the following format.

UNDERTAKING

I _____ SO/DO _____ R/o. _____ selected by the University after qualifying the SKUAST-Kashmir University Entrance Test and offered seat in_____ under _____ category for admission to _____ degree programme session 2014-15, do hereby solemnly affirm that I will not demand for any other degree programme/discipline other than the one selected for and offered during the counseling on the basis of my merit obtained at UET and availability of seat.

I further solemnly affirm that I will not resort to any method viz; legal or any other administrative requests for change of the degree programme/discipline.

I shall also abide by all actions taken by the University in the event of change of degree programme or discipline on the basis of availability of seat purely on merit of UET and subsequent placement of candidate (s) against that available seat, if desired by the candidate, in writing.

Name:_____

Parent/guardian:_____

R/o:_____

Annexure-III

SYLLABUS FOR UG ENTRANCE EXAMINATION

1. PHYSICS (2 to 4 questions from each unit) 50 Questions

UNIT 1 Physical World and Measurement

Physics scope and excitement; Nature of physical laws; Physics, technology and society. Need for measurement: Units of measurement; Systems of units; SI units, fundamental and Derived units. Length, mass and time measurements; Accuracy and precision of measuring instruments; errors in measurement; Significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

UNIT 2 Kinematics

Frame of reference. Motion in a straight line: Position time graph, speed and velocity. Uniform and non uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion: velocity time graph, position time graphs, relations for uniformly accelerated motion (graphical treatment). Elementary concepts of differentiation and integration for describing motion. Scalar and vector quantities: Position and displacement vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Relative velocity. Unit vector; Resolution of a vector in a plane rectangular component. Motion in a plane. Cases of uniform velocity and uniform acceleration projectile motion. Uniform circular motion. Motion of objects in three dimensional spaces. Motion of objects in three dimensional spaces.

UNIT 3 Laws of Motion

Intuitive concept of force. Inertia, Newton's first law of motion; Momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces. Static and kinetic friction, laws of friction, rolling friction. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).

UNIT 4 Work, Energy and Power

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

UNIT 5 Motion of System of Particles and Rigid Body

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

UNIT 6 Gravitation

Keplar's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy; Gravitational potential. Escape velocity. Orbital velocity of a satellite. Geostationary satellites.

UNIT 7 Properties of Bulk Matter

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

UNIT 8 Thermodynamics

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

UNIT 9 Behavior of Perfect Gas and Kinetic Theory

Equation of state of a perfect gas, work done on compressing a gas. Kinetic theory of gases assumptions, concept of pressure. Kinetic energy and temperature; rms speed of gas molecules; degrees of freedom, law of equipartition of energy (statement only) and application to specific heats of gases; Concept of mean free path, Avogadro's number.

UNIT 10 Oscillations and Waves

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

UNIT 11 Electrostatics

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

UNIT 12 Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V I Characteristics (linear and nonlinear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchoff's laws and simple applications. Wheatstone bridge, meter bridge. Potentiometer principle and its applications to measure potential difference and for comparing emf of two cells; Measurement of internal resistance of a cell.

UNIT 13 Magnetic Effects of Current and Magnetism

Concept of magnetic field, Oersted's experiment. BiotSavart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids. Force on a moving charge in uniform magnetic and electric fields. Cyclotron. Force on a current carrying conductor in a uniform magnetic field. Force between two parallel current carrying conductors definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer its current sensitivity and conversion to ammeter and voltmeter. Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para, Dia and ferro magnetic substances, with examples. Electromagnets and factors affecting their strengths. Permanent magnets.

UNIT 14 Electromagnetic Induction and Alternating Currents

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

UNIT 15 Electromagnetic waves

Displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, 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, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula. Magnification, power of a lens, combination of thin lenses in contact. Refraction and dispersion of light through a prism. Scattering of light blue colour of the sky and reddish appearance of the sun at sunrise and sunset. Optical instruments: Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers. Wave optics: wave front and Huygens' principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygens' principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarised light; Brewster's law, uses of plane polarised light and Polaroids.

UNIT 17 Dual Nature of Matter and Radiation

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

UNIT 18 Atoms & Nuclei

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

UNIT 19 Electronic Devices

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

UNIT 20 Communication Systems

Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitudemodulated wave.

2. CHEMISTRY (1 to 3 questions from each units) 50 Questions

UNIT 1 Some Basic Concepts of Chemistry

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

UNIT 2 Solid State

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

UNIT 3 Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties– relative lowering of vapour pressure, elevation of Boiling Point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.

UNIT 4 Structure of Atom

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

UNIT 5 Classification of Elements and Periodicity in Properties

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

UNIT 6 Chemical Bonding and Molecular Structure

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

UNIT 7 States of Matter: Gases and Liquids

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

UNIT 8 Thermodynamics

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

UNIT 9 Equilibrium

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

UNIT 10 Redox Reactions

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

UNIT 11 Hydrogen

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

UNIT 12 s Block

Elements (Alkali and Alkaline earth metals)

Group 1 and Group 2 elements

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

UNIT 13 Preparation and properties of some important compounds

Sodium carbonate, sodium chloride, sodium hydroxide and sodium hydrogen carbonate, biological importance of sodium and potassium. CaO, CaCO3 and industrial use of lime and limestone, biological importance of Mg and Ca.

UNIT 14 Some p Block

Elements General Introduction to p Block Elements: Group 13 elements General introduction, electronic configuration, occurrence. Variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group; Boron physical and chemical properties, some important compounds: borax, boric acids, boron hydrides. Aluminum: uses, reactions with acids and alkalies.

UNIT 15 Group 14 elements

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

UNIT 16 Organic Chemistry

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

UNIT 17 Hydrocarbons

Classification of hydrocarbons

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

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

Alkynes Nomenclature, structure of triple bond (ethyne), physical properties. Methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of hydrogen, halogens, hydrogen halides and water.

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

UNIT 18 Electrochemistry

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

UNIT 19 Chemical Kinetics

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

UNIT 20 Surface Chemistry

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

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

UNIT 21 General Principles and Processes of Isolation of Elements

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

UNIT 22 p Block Elements Group 15 elements

General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; nitrogen preparation, properties and uses; compounds of nitrogen: preparation and properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous allotropic forms; compounds .of phosphorous: preparation and properties of phosphine, halides (PCl3, PCl5) and oxoacids

UNIT 23 Group 16 elements

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

UNIT 24 Group 17 elements

General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens: preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

UNIT 25 Group 18 elements

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

UNIT 26 d and f Block Elements

General introduction ,electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation preparation and properties of K2Cr2O7 and KMnO4.

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

UNIT 27 Coordination Compounds

Coordination compounds Introduction, ligands, coordination number, colour, magnetic properties and shapes, UPAC nomenclature of mononuclear coordination compounds.

bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological systems).

UNIT 28 Haloalkanes and Haloarenes

Haloalkanes: Nomenclature, nature of CX bond, physical and chemical properties, mechanism of substitution reactions.

Haloarenes: Nature of CX bond, substitution reactions (directive influence of halogen for mono substituted compounds only) Uses and environmental effects of dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

UNIT 29 Alcohols, Phenols and Ethers

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

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

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

UNIT 30 Aldehydes, Ketones and Carboxylic Acids

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

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

UNIT 31 Organic compounds containing Nitrogen

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

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

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

UNIT 32 Biomolecules

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

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

Vitamins Classification and functions.

Nucleic Acids: DNA and RNA.

UNIT 33 Polymers

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

UNIT 34 Environmental Chemistry

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

UNIT 35 Chemistry in Everyday life

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

3. BIOLOGY (Botany and Zoology) 6-12 questions from each unit 50 Questions

Unit-I Diversity of Life

Variety of living organism Systematics, need, history and classification (Artificial,natural and Phylogenetic). Biosystematics, Binomial nomenclature, Two kingdom system, five kingdom system, their merits and demerits. Detailed study of kingdom,:Monera Protista and fungi, status of some acellular organisms/Slime moulds like: viruses and viroids. Lichens taxonomic aids i.e. Botanical garden, herbaria, museum & keys.

Characteristic features of living organisms.

Salient features of various plant groups for identification and their classes Algae, Bryophytes, Pteridophytes, Gymnosperms and angiosperms).

Morphology of flowering plants and their function. Morphology of root, stem, leaves, inflorescence, flowers, fruits and seed. Description of flowering plants of families Fabaceae, Solanaceae and Liliaceae. Salient features of animals (non chordates upto phylumlevel, chordates upto class level), Animal kingdom Zoological parks, Natural museums (with special reference to local Zoos/National Parks (Manda, Mahamaya, Dachigam, Hemis)

Unit-II Cell Structure and Function: Plants

Tissues and tissue system, Types of Tissues, Meristematic and Permanent and theirclassification and functions.A natomy of Dicot and Monocot Root, Stem and Leaves, Secondary. Growth in Dicot stemsand roots.

Transport in plants: means of transport, (diffusion, facilitated diffusion, Passive symports and anti ports, Active transport)

Plant water relations: water potential, osmosis, plasmolysis, imbibition, long distance transportof water, apoplast, symplast, pathways ascent of sap, Root pressure theory and transpirational pull theory (cohesion - tension theory).

Tranpiration: types & significance, mechanism of opening and closing of stomata, guttation, Phloem transport, flow from source to sink, (mass flow hypothesis) Methods to study mineral requirement (Hydrophonics). Essential mineral, elements criteria for essentiality of nutrients. Essential elements. Micro and Macro nutrients, their role and deficiency symptoms. Mechanism of absorption of elements, translocation of solutes, soil and reservoir of essential elements.

Nitrogen metabolism, Nitrogen cycleBiological nitrogenfixation, 'Photosynthesis, Historical background, site of photosynthesis. Various photosynthetic pigments, Mechanism, Light reaction including PS I, PS II and photophosphorylation (Cyclic and non-cyclic). Dark reaction orBiosynthetic phase, Calvin (C3) cycle, C4 cycle, factors effecting photosynthesis. Photorespiration.

Respiration:- Introduction mechanism- gycolysis, Kreb's cycle. Electron transport system,Aerobic and anaerobicrespiration. Respiratory quotient.

Growth and Development:- Characteristics of plant growth, phases of growth, growth curve and its components- differentiation, dedifferentiation and redifferentation, Development,sequence of developmental processes in a plant cell, plant growth regulators, discovery and physiological effects (Auxins, Gibberellins, cytokinins, ethylene and IBA, Photoperiodism and vernalisation.

Asexual Reproduction: Vegetative propagation in plants, micropropagation.

Sexual Reproduction: Flower structure, Development of male & female gametophytes. Pollination: types, agencies & examples, Out breeding devices. Pollen- Pistil interaction, Double fertilization. Post fertilization events, Development of endosperm, embryo, seed and fruit. Special modes: apomixes and polyembryony, significance of seed & fruit formation.

Unit-III Cell-Structure and Function: Animals Cell- Brief description of cell, Cell theory; Prokaryotic and eukaryotic cell, cell wall, cell membrane and cell organelles (Plastids, Mitochondria, Endoplasmic reticulum, Golgi bodies/dictyosomes, Ribosomes,Lysosomes,Nucleus, Vacoules, Centrioles), Cillia and flagella, and nuclear organization.

Cell Division:- Cell cycle, Mitosis, Meiosis. Basichemical constituent of living bodies.
Biomolecules: Structure and functions of :- carbohydrates, proteins, lipids and nucleic acids, Metabolites (Pry and Secondary, Meltabolism (elementary idea).
Enzymes: Types, Properties and Functions.
Animal tissues:- Epithelial, Connective, Muscular & Nervous, Organ and Organ system.
Elementary Knowledge of :-Morphology and Anatomy of Frog, Earthworm & Cockroach. Digestion and Absorption,Breathing and Respiration, Body fluids and circulation,Excretory products and elimination(v) Locomotion and Movement,Neural control and coordination,Chemical coordination and integration
Asexual Reproduction: Uniparental, modes: binary fission, sporulation, budding, gemmule, fragmentation, regeneration.
Human Reproduction- Male and female reproductive systems, Microscopic anatomy of testis & ovary; Gametogenesis (spermatogenesis & oogenesis. Menstrual cycle), Fertilization, embryo development upto blastocyst formation, implantation; Pregnancy and placenta formation (elementary idea), Parturition (elementary idea) and Lactation (elementary idea).
Reproductive Health: Need for reproductive health & prevention of Sexually Transmitted Diseases (STD), Birth control- need & methods, Contraception and Medical Termination of Pregnancy (MTP), Amniocentesis, Infertility & assisted reproductive technologies: IVF, ZIFT, GIFT (Elementary idea for general awareness).
Unit-IV: Genetics
Heredity and variation Mendelian inheritance, Deviations from Mendelism: incomplete dominance, co-dominance, Multiple alleles, Pleiotropy, Chromosomal theory of inheritance, Elementary idea of polygenic inheritance, Chromosomes & genes, Search for genetic material & DNA as genetic material: Structure of DNA & RNA, DNA, packaging, DNA Replication (Semiconservative), Central dogma, Protein Biosynthesis: Transcription, translation, genetic code, Gene expression and regulation (lac-operon). Sex determination in humans, birds and honeybee., Inheritance pattern of Hemophilia and Color blindness in human beings., Mendelian Disorders in humans: Chromosomal disorders in humans, Down's syndrome, Turner's & Klinefelter's syndromes. Genome and Human Genome project., DNA finger printing. Origin of life: Theories & evidences with special reference to Darwin & Modern Synthetic theory of evolution, Hardy – Weinberg's principal. Adaptive radiation. Origin and evolution of Man.
Unit-V: Biology and Human welfare Plant breeding: Introduction, steps in plant breeding and application of plant breeding, and single cell protein, Biofortification.
Tissue culture: Cellular totipotency, technique and application of tissue culture,
Microbes in Human Welfare: in household food processing, industrial production, sewage treatment, Production of energy (Biogas), biocontrol agent (Biopesticides) & Biofertilizers. Genetically Modified organism-Bt crops, Biopiracy and patents.
Health and Disease: Basic concepts of immunology, vaccines pathogens, parasites causing human diseases (Typhoid, Hepatitis, Malaria, Filariasis, Amoebiasis, Ring Worm); Cancer, HIV and AIDS.
Insects & human welfare: Silk, honey, lac. Adolescence, drug & alcohol abuse. Poultry, Dairy Farming. Genetic Engineering (Recombinant DNA technology), cloning, Applications in Health: Human insulin & vaccine production, gene therapy, Biosafety issues.
Unit- VI: Biology and Environment Meaning of ecology, environment, habitat and niche: Organisms and environment.
Population and ecological adaptations: Population Interactions-mutualism, competition, predation, parasitism. Population attributes-growth, birth rate and death rate, age distribution.
Ecosystems: Patterns, Components, energy flow, nutrient cycling (carbon and phosphorus), decomposition and productivity. Pyramids of number, biomass, energy. Ecological succession. Ecological Services: Carbon fixation, Pollination, Oxygen release.
Biodiversity and its conservation: Threats to, and need for biodiversity conservation. Hotspots, endangered organisms, extinction, Red Data Book. Biodiversity conservation-biosphere reserves, national parks and sanctuaries.
Environmental Issues: Air and water pollution and their control, solid waste management, agrochemicals and their effects, Radioactive waste management, Green house effect and global warming, Ozone depletion in stratosphere, Deforestation, Any three case studies as success stories addressing environmental issues.

4. MATHEMATICS (3 to 7 questions from each units) Questions 50

UNIT I Sets and Functions
Sets : Sets and their representations. Empty set. Finite & Infinite sets. Equal sets. Subsets, Subsets of the set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set.
Relations & Functions: Ordered pairs, Cartesian product of sets. Number of elements in the cartesian product of two finite sets. Cartesian product of the reals with itself (upto R x R x R). Definition of relation, Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations, Pictorial representation of a function, domain. Co domain and range of a relation. Function as a special kind of relation from one set to another. Real valued function of the real variable, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions with their graphs. Sum, difference, product and quotients of functions.

Trigonometric Functions: Positive and negative angles. Measuring angles in radians & in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity sin2x + cos2x=1, for all x. Signs of trigonometric functions and sketch of their graphs. Expressing sin (x+y) and cos (x+y) in terms of sin x, sin y, cos x & cos y. Deducing the identities like the following:

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

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

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

Identities related to sin2x, cos2x, tan2x, sin3x, cos3x and tan3x. General solution of trigonometric equations of the type sin è ?= sin á, cos è ?= cos á ?and tan è ?= tan á.

Inverse Trigonometric Functions: Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions. Properties of triangles, including centroid, incentre, circumcentre and orthocentre, Solution of triangles. Heights and Distances.

UNIT II Algebra

Principle of Mathematical Induction: Processes of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.

Complex Numbers and Quadratic Equations: Need for complex numbers, especially 1, to be motivated by inability to solve every quadratic equation. Brief description of algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system.

Linear Inequalities: Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Solution of system of linear inequalities in two variables graphically.

Permutations & Combinations: Fundamental principle of counting. Factorial *n*. (*n!*). Permutations and combinations, derivation of formulae and their connections, simple applications.

Binomial Theorem: History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.

Sequence and Series: Sequence and Series. Arithmetic progression (A. P.). arithmetic mean (A.M.) Geometric progression (G.P.), general term of a G.P., sum of *n* terms of a G.P., geometric mean (G.M.), relation between A.M. and G.M. Sum to *n* terms of the special series Ón, Ón2 and Ón3.

Matrices: Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non commutativity of multiplication of matrices and existence of nonzero

matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists.

Determinants: Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of atriangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

UNIT III Coordinate Geometry

Straight Lines: Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axes, point slope form, slope intercept form, two point form, intercepts form and normal form. General equation of a line. Distance of a point from a line.

Conic Sections: Sections of a cone: circle, ellipse, parabola, hyperbola, a point, a straight line and pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle. Introduction to Three dimensional

Geometry: Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.

UNIT IV Calculus

Limits and Derivatives: Derivative introduced as rate of change both as that of distance function and geometrically, intuitive idea of limit. Definition of derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

Continuity and Differentiability: Continuity and differentiability, derivative of composite functions, chain rule, derivatives of inverse trigonometric functions, derivative of implicit function. Concept of exponential and logarithmic functions and their derivative. Logarithmic differentiation. Derivative of functions expressed in

parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

Applications of Derivatives: Applications of derivatives: rate of change, increasing/ decreasing functions, tangents & normal's, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems.

Integrals: Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts; only simple integrals of the type

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

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

to be evaluated. Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

Applications of the Integrals: Applications in finding the area under simple curves, especially lines, areas of circles/ parabolas/ellipses (in standard form only), area between the two above said curves.

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

$$\frac{dy}{dx} + py = q$$

where p and q are functions of x

UNIT V Vectors and Three Dimensional Geometry

Vectors: Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.

Three dimensional Geometry: Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

UNIT VI Linear Programming

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

UNIT VII Mathematical Reasoning

Mathematical Reasoning: Mathematically acceptable statements. Connecting words/ phrases consolidating the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/or", "implied by", "and", "or", "there exists" and their use through variety of examples related to real life and Mathematics. Validating the statements involving the connecting words, difference between contradiction, converse and contra positive.

UNIT VIII Statistics & Probability

Statistics: Measures of central tendency, mean, median and mode from ungrouped/grouped data. Measures of dispersion, mean deviation, variance and standard deviation from ungrouped/grouped data. Correlation, regression lines.

Probability: Random experiments: outcomes, sample spaces (set representation). Events:
occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events Axiomatic (set theoretic) probability, Probability of an event, probability of 'not', 'and' & 'or' events. Multiplication theorem on probability. Conditional probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean and variance of stochastic variable. Repeated independent (Bernoulli) trials and Binomial distribution.

UNIT IX Statics

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

UNIT X Dynamics

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