

# **INFORMATION BROCHURE**

With Application Form

For

Admission to

**Undergraduate Professional Courses in Jammu and Kashmir**

**Common Entrance Test**

**2006**

**Board of Professional Entrance Examinations  
Jammu and Kashmir.**



## **INTRODUCTION**

The Board of Professional Entrance Examinations ( BPEE) has been established by an Act of the State Legislature ( Act No. XXV of 2002). Under the Act, the Board is entrusted with the task of conducting entrance tests and making selection of candidates for admission to various professional courses in the State of Jammu and Kashmir .

Common Entrance Test, 2006 is being conducted for the purpose of determining eligibility / merit of students for admission to undergraduate medical , dental, engineering and agriculture courses in the Government-run and privately managed Institutions in the J&K State . The test will be conducted in accordance with the provisions of the Board of the Professional Entrance Examinations Act, 2002, Jammu and Kashmir, Reservation Act, 2004 , J&K Reservation Rules, 2005, rules , orders , notifications and directions issued/ to be issued by the Govt. of Jammu and Kashmir from be time to time concerning undergraduate professional education in medical, agriculture and engineering fields .

This Information Brochure has been prepared to provide procedural details of the Common Entrance Test to the prospective candidates. The most crucial step is the filling of the application form . The selection is made according to the choice of the courses and the colleges shown by the applicants in their application forms in order of merit secured in the Entrance Test . The candidates, should , therefore carefully go through the Information Brochure before filling their application forms . Any error at the initial stage may not be rectified later and this may prove costly for a promising student.

**Terms and Expressions used in the Information Brochure and Their Meanings.**

- (i). **Available Seats** : The seats against which admissions are ordered by the Government of Jammu and Kashmir.
- (ii). **Qualifying Examination**: The examination on the result of which candidates become eligible for admission to entrance examination.
- (iii). **Eligible Candidates** : A candidate, who fulfills the requirements of eligibility as prescribed by the Board of Professional Entrance Examinations and State Government.
- (iv). **Incomplete Form**: The form which is lacking in any documentary proof or is wrongly filled in or contains false information of any kind or suffers from any other incompleteness.
- (v). **Late Receipt** : Applications not received in the office of the Board of Professional Entrance Examinations or the officer authorised by the Board of Professional Entrance Examinations in this behalf, even by post on the date and time as specified in the notification.
- (vi). **Advertisement Notice**: The notification issued by the Board of Professional Entrance Examinations inviting applications from eligible candidates for permission to appear in the Entrance Test.
- (vii). **Application Form** : The form prescribed by the Board of Professional Entrance Examinations to be submitted by the eligible candidates for permission to appear in the Entrance Test.

- (viii) **Free Seats** : The seats in the Government- run Institutions for which only nominal fee is charged .
- (ix) **Merit List** : The list of candidates, who appear in the Entrance Test, drawn up in the descending order of the inter-se merit.
- (x) **Private Educational Institutions** : The Institutions / Colleges established and / or administered by registered societies, public trusts or religious and charitable trusts offering professional courses and duly approved / recognized by the Government of Jammu and Kashmir and Professional Bodies such as M. C.I/DCI/AICTE/ICAR, as the case may be.

#### **GENERAL INFORMATION AND INSTRUCTIONS**

1. It is expected that the candidates shall be sincere, honest and responsible in their activities pertaining to appearance in entrance examination and shall not adopt any unfair / fraudulent / cunning means in the examination. However, the candidates herein are sternly warned not to resort to any unfair / fraudulent means or cunning stratagem of impersonation. In case a candidate is found taking course to such acts / stratagem, criminal prosecution shall be launched against the candidate besides debarring him / her permanently from appearing in the Entrance Examinations.
2. The candidates seeking admission to Entrance Examination are required to :
  - i. Go through Information Brochure carefully and acquaint themselves with all the requirements;
  - ii. Satisfy eligibility criteria prescribed for appearing in the entrance examination;

- iii. Send Application duly filled in, in the prescribed form, given along with this Information Brochure. Application submitted on a copy / photocopy of Application Form will be summarily rejected; and
  - iv. Write complete address with Postal Pin Code, Telephone No., Email address, if any, in the Application Form. The candidate is required to mention in the postal address the District to which he/she belongs.
3. The candidates applying for admission, if found eligible, will be required to appear in the Entrance Test at their own expenses.
  4. Selection of the candidates in all the categories shall be subject to production and verification of all the relevant certificates in original.
  5. No intimation whatsoever about non-selection will be sent individually and no correspondence in this regard shall be entertained. The result will, however, be available in the offices of the BPEE at Jammu and Srinagar for information and perusal of the candidates. The result will also be available on Internet at the website of the Govt. [Http://www.jammukashmir.nic.in](http://www.jammukashmir.nic.in)
  6. The Board shall have the power to review the provisional selection in case of any bonafide error, lapse, mistake, fraud, misrepresentation or glaring injustice that occurs or is brought to its notice before completion of the selection process or thereafter and the selection list will be amended accordingly. Mere figuring in the selection list will not confer any right on the candidate if he / she is otherwise found ineligible on detection of an error / mistake / fraud / misrepresentation.
  7. Complaints relating to certificates, particularly those of reserved categories will not be entertained as BPEE is not an appellate authority or an investigating agency.
  8. Admission of candidates to entrance examination is provisional, subject to their being eligible for admission to the courses applied for.

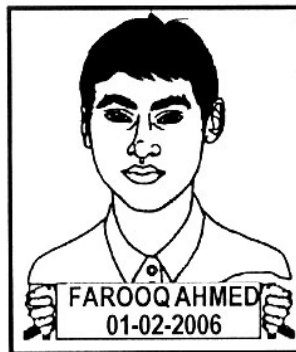
### **Destruction of Examination Records by Burning :**

1. The unused question booklets shall be destroyed after three months, after the declaration of the result.
2. The answer sheets, used and un-used, shall be destroyed in the manner as prescribed for the unused question booklets.
3. Application forms of the non-selected candidates shall be destroyed in the manner as prescribed for the question booklets and answer sheets.

### **Instructions for Photographs**

1. Four recent high contrast passport size similar photographs with light background are required. Polaroid photographs are NOT acceptable.
2. Photograph MUST be snapped on or after 01-05-2006.
3. Photograph must be taken with name of the candidate (as in application) and date of taking photograph.

Example



**Important:**

- (i) The photograph must be snapped with a placard indicating name of the candidate and the date of taking photograph. In case name and date are written on the photograph after taking it, the application will be rejected.
- (ii) The name and the date on the photograph must be clear and legible.
4. Photograph should NOT have cap, goggles. Spectacles are allowed.
5. One photograph each should be pasted (NOT stapled) on
  - (a) Scannable Application Form and
  - (b) Non-Scannable Application Form.
6. The photograph on the Non-Scannable Application Form must be attested by a Gazetted Officer/Principal with a clear stamp. The photograph on the Scannable Application Form is NOT to be attested.
7. Applications not complying with these instructions or with unclear photographs will be rejected.
8. The candidates should submit two more photographs alongwith the application form. Application form number should be written at the back side of the photographs.

**Eligibility for admission**

Candidates applying for Common Entrance Test must fulfill the following eligibility conditions :

1. Must be permanent residents of J&K State as defined in Section 6 of the Constitution of the J&K .
2. Passed Hr. Sec. Part II ( 12<sup>th</sup> / 10+2 ) or an equivalent examination from a recognised statutory Board or University .

3. Have obtained 50 % marks in aggregate in 10+2 examination in case of general category and 40% in aggregate in case of reserved categories candidates.
4. Have passed 10+2 examination with English, Physics , Chemistry and Biology, as elective subjects in case of admission to MBBS, BDS, BVSC, Animal Husbandry , BUMS and BAMS courses .
5. Have passed 10+2 examination with English , Physics , Chemistry and Math or Biology as their elective subjects in case of admission to B. Sc. Agriculture and B.Sc. Forestry Courses .
6. Have passed 10+2 examination with English , Physics , Chemistry and Math as their elective subjects in case of admission to Bachelor of Engineering Courses .

**Note:** In case the result of the qualifying examination is not declared till the last date fixed for submission of applications for CET, the candidates can submit their application forms along with an affidavit to the effect that their marks sheets of 10+2 examination will be submitted in the office of the BPEE on or before the last date fixed for issuing of Admit Cards. However , the admit card will be issued only to an eligible candidate on production of attested copy of mark sheet of 10+2 examination up to the last date fixed for issuing of admit cards.

**AGE LIMIT:**

1. Candidate must be 17 years old on or before 31<sup>st</sup> of December of the year in which he/ she applies for entrance test for admission to MBBS, BDS and BAMS Courses.
2. Candidate must be 17 years old on or before 1<sup>st</sup> of October of the year in which he/ she takes entrance test for admission to BUMS .

**PROGRAMMES OFFERED AND INTAKE CAPACITY.**

The number of seats in different courses/ colleges may increase or decrease. The precise number of seats in colleges is liable to change . Further in the event of

failure of a private college to obtain necessary approval / affiliation from the appropriate authority for the current year by or before the date of holding the Entrance Examination, no admission will be made thereto. IN case of CET the necessary approval is required to be obtained from MCI/DCI/AICTE/ICAR, as the case may be , the concerned Department of the J&K Govt. , and the affiliating Universities

Brief details of the programmes offered and intake capacity in various Colleges and Institutions in the State for the academic year 2006-07 are as follows

S.No.	Name of the Institution	Weather Govt./ Private.	Courses	Intake capacity	Seats to be filled by BPEE	Free Seats	Pay-ment Seats	Manage-ment Seats
1.	Govt. Medical College Srinagar	Govt.	MBBS	100	100	100	Nil	Nil
2.	Govt. Medical College Jammu	Govt.	MBBS	100	100	100	Nil	Nil
3	SKIMS Medical College Bemina Srinagar	Govt.	MBBS	50	50	50	Nil	Nil
4.	ASCOMS,Jammu	Private	MBBS	40+10	40+10	Nil	40+10*	
5.	Govt. Dental College Srinagar	Govt.	BDS	20	20	20	Nil	Nil
6.	Govt. Dental College Jammu	Govt.	BDS	20	20	20	Nil	Nil
7	Institute of Dental * Sciences Trikuta Charitable Trust Sehora Jammu	Private	BDS	-----	-----	-----	-----	-----
8	AIMS Zakura Srinagar	Private	BUMS	40	27+3	Nil	27+3*	10
9.	Jammu Institute of Ayurveda & Research kot Balwal Jammu	Private	BAMS	60	40+5	Nil	40+5*	15

**Note No.1 :-**

10 seats in ASCOMS, Jammu are reserved for children of poor and backward families. Similarly 3 seats in AIMS Zakura, Srinagar and five seats in Institute of Ayurveda and Research Kot Balwal Jammu are reserved for children of poor and backward families.

**Note No.2:-**

\* Seats of the Institute shall be notified and filled Subject to the approval of the Dental Council of India and affiliating University.

**Note No. 3**

Candidates seeking admission for MBBS/ BDS Courses in Govt.-run Medical / Dental Colleges must mention option for Courses / Colleges in order of preference in the Application Form . As far as possible such candidates will be accommodated in Colleges of their preference keeping in view the in-take capacity of each Government - run Medical College for open/ reserved categories candidates . Admission in MBBS in Acharya Shri Chandra College of Medical Sciences and Hospital is on payment basis and should not be identified with admission to MBBS in Government - run Medical Colleges .

**Note No. 4**

A candidate seeking admission to the MBBS Course can opt for selection in Govt. Medical College and ASCOMS simultaneously. In case the candidate is not selected on merit for a seat in the Govt. Medical College, he/she will be considered for a seat in ASCOMS. If the candidate is allotted seat on merit and choice in ASCOMS, subsequently he/she shall not be allowed to refuse to accept that seat and claim seat in BDS and B. V.Sc. etc under any circumstances.

**Note No. 5**

In BAMS medium of instruction shall be Hindi.

### **AGRICULTURE COURSES**

<b>S.No.</b>	<b>Name of the Institution</b>	<b>Weather Govt./ Private.</b>	<b>Courses</b>	<b>Intake capacity</b>	<b>Seats to be filled by BPEE</b>	<b>Free Seats</b>	<b>Payment Seats</b>	<b>Management Seats</b>
1.	SKUAST Kashmir	Govt	a)BVSc & AH b) Bsc Agri c)BSc Forestry	61 65 16	61 65 16	54 60 14	7 5 2	Nil Nil Nil
2.	SKUAST Jammu	Govt	a)BVSc & AH b) Bsc Agri	60 60	60 60	54 54	6 6	Nil Nil

Note : If a candidate accepts a payment seat in an agriculture course, which has been allotted on merit by the Board, thereafter he/she shall not be permitted to claim refund of that payment seat in the eventuality of allotment of free seat as a result of upgradation. However, if the Board is able to provide another candidate for the vacated payment seat, refund shall be paid to the candidate.

## ENGINEERING COURSES

S.No.	Name of the Institution	Weather Govt./ Private.	Courses	Intake capacity	Seats to be filled by BPEE	Free Seats	Payment Seats	Management Seats
1.	GCET Jammu	Govt.	Civil	30	30	30	Nil	Nil
			E&C	30	30	30	Nil	Nil
			Computer	40	40	40	Nil	Nil
			Electrical	30	30	30	Nil	Nil
			Mechanical	30	30	30	Nil	Nil
2	MIET Jammu	Private	E&C	60	57	Nil	57	3
			Computer	60	57	Nil	57	3
			Electrical	60	57	Nil	57	3
			I.T	60	57	Nil	57	3
3	MBS Jammu	Private	I.T	60	30	Nil	30	30
			E&C	60	30	Nil	30	30
			Mechanical	60	30	Nil	30	30
			Computer	60	30	Nil	30	30
			Electrical	60	30	Nil	30	30
			Applied Electronics & Instrumentation	60	30	Nil	30	30
4	S.S.M. Srinagar	Private	Civil	60	51	Nil	51	9
			Mechanical	60	51	Nil	51	9
			E&C	60	51	Nil	51	9
			Computer	60	51	Nil	51	9

### **Reservation**

There shall be no reservation in private Colleges/ Institutions . The reservation in Government-run Colleges / Institutions in the State shall be as under:-

<b>S.No.</b>	<b>Category</b>	<b>Codes</b>	<b>% age seats</b>
1.	Open Merit ( OM)	A. 06	50%
2.	Scheduled Castes ( SC)	B.07	8%
3.	Scheduled Tribe Gujjar & Bakerwal(STGB)	C.08	6%
4.	Scheduled Tribe Leh. Distt. (STL)	D. 09	2%
5.	Scheduled Tribe of Kargil Distt. (STK)	E. 10	2%
6.	Other Scheduled Tribes (STO)	F.11	1%
7.	Weak and under privileged Classes (Social Caste)	G. 12	2%
8.	Resident of Backward Area (RBA)	H. 13	20%
9.	Residents of Area Adjoining Actual Line of Control (ALC)	I. 14	3%
10.	Children of Defence Personnel (Permanent Residents of the State(CDP)	J.15	3%
11.	Candidates possessing outstanding proficiency in sports	K. 16	2%
12.	Children of State Police Personnel and Para-military Forces (Permanent residents ) of J&K State (JKPM)	L.17	1%
13.	Poor and Backward Families	M.18	-

Benefit of reservation shall be available only if the category to which a candidate belongs is mentioned in the original application form at the time of submission of form. The candidate has to submit certificate in original from the Competent Authority indicating the category to which he/ she belongs (a list of Competent Authorities who issue certificates of reserved categories are given in Annexure-I)

If a candidate fails to submit reserved category certificate along with the Application Form , his/ her Application Form will be considered under General Category (OM).

A candidate can apply for one reserved category only. Choice regarding reserved category once exercised shall be final. At later stage under no circumstances choice concerning category will be allowed to be changed.

In the Government Medical and Dental Colleges , 50% of seats are reserved for female candidates under all categories. In case of odd number of seats in a particular category, the last seat will go to the candidate with higher merit irrespective of sex.

**Notes :**

- I. The Seat for the Central Pool in Medical Colleges outside the State will be notified later on and selection of candidates will depend upon the availability of seats from the Government of India and will also be subject to such conditions as may be prescribed by the State Government .
- II. Selection of the candidates belonging to Central Pool category shall be made in terms of the merit in the common entrance test. Consequently only those candidates shall be considered for allotment of seats under Central Pool category who have appeared in the common entrance test.
- III. There are limited Seats available in MBBS/ Indian System of Medicine in Private Professional Colleges which are allocated on merit to children of Poor and Backward families whose annual income does not exceed Rs. 70,000.00 ( Seventy thousand rupees ). Format of income certificate is given at **Annexure II**. These seats are a part of the 'Open Merit' Candidates and should not be identified with any Reserved Category under SRO Notification 294 of 2005. These candidates have been given a code ( R-18) only for the purpose of identification for evaluation of Answer Sheets.

**FEE STRUCTURE (PER ANNUM)**

S. No.	Name of the Course	Name of the Institution	Free Seats (Govt. Seats)	Payment Seats	Seats for the Children of Poor & Backward Families
1.	M.B.B.S	I. Govt. Medical College Srinagar II. Govt. Medical College Jammu. III. Shar-e- Kashmir Institute of Medical Sciences Soura Srinagar IV. Achariya Shari Chandra College of medical Sciences Jammu.	10,000.00 10,000.00 10,000.00	1,45,000.00	15,000.00
2.	B.D.S.	I. Govt. Dental College Srinagar II. Govt. Dental College Jammu.	3200.00 3200.00		
3.	B.U.M.S.	Institute of Asian Medical Sciences Zakura Srinagar		60,000.00	10,000.00
4.	B.A.M.S.	Jammu Institute of Ayurveda & Research Jammu		75000.00+ 10,000.00 Refundable Security	10,000.00
5.	B.Sc. Agri.	I. SKUAST Kashmir with Hostel Charges II. SKUAST Jammu with Hostel Charges	11877.00 11330.00	60,000.00 60,000.00	
6.	B.Sc. Forestry	SKUAST Kashmir	11877.00	80,000.00	
7.	B.V.Sc. & AH	I. SKUAST Kashmir with Hostel Charges II. SKUAST Jammu with Hostel Charges	11877.00 11830.00	100,000.00	

S. No.	Name of the Course	Name of the Institutions	Free Seats (Govt. Seats)	Payment Seats	Seats for the Children of Poor & Backward Families
8.	BE	I. G.E.C.T. Jammu = For Candidates of J&K Board of School Education	- 2410.00		
		= For Candidates Other than J&K Board of School Education	2690.00		
		II. MIET Jammu	Nil	28000.00	
		III. S.S.M.College of Engineering Srinagar.	Nil	28000.00	
		IV. M.B.S.College of Engineering Technology Jammu	Nil	28000.00	

**Note:-**

In BAMS , Jammu refundable security amounting to Rs. 10,000.00 shall be charged only once for the full training course at the time of admission .

**APPLICATION FORM**

**(a) How to Get :**

The application form with the Information Brochure is made available at all District Headquarters in the specified Branches of the Jammu & Kashmir Bank Ltd. against a fee of Rs. 750.00. In addition to the above fee of Rs. 750, candidates shall have to pay such service charges as may be fixed by the Bank. The Branches of the J&K Bank where application forms shall be available will be specified in the Advertisement Notification.

The examination fee is non-refundable. If a candidate who applies for sitting in the Entrance Test is later found ineligible, he/she cannot claim refund of the fee paid by him/her.

**(b) How to fill up :**

(I) Fill in the application form in BLOCK LETTERS in English, using blue/black ball point pen, within the prescribed boxes.

(ii) Incomplete application forms will be rejected. Besides, any overwriting, cutting or erasing in the application form will lead to rejection of the form and should therefore, be avoided. Any error arising on this account shall be the responsibility of the candidate.

(iii) Candidate must write his/ her name and father's name in capital letters as given in matriculation certificate issued by the competent Board of School Education. Each letter should be filled in one box as shown below. One box should be kept blank between each part of the name. Before filling in the application form, write on a plain paper and ascertain the correctness of spellings.

M	O	H	A	N		S	I	N	G	H
---	---	---	---	---	--	---	---	---	---	---

Father's Name

R	A	M		S	I	N	G	H		
---	---	---	--	---	---	---	---	---	--	--

**(IV)Date of Birth**

Enter the Date, Month and Year of birth as per English Calendar and as recorded in the Matriculation Certificate. Use numerals 01 to 31 for the date, 01 to 12 for the month and last two digits for the year as shown below :-

**3rd of November,1970**

**10th of February,1974**

0	3	1	1	7	0	1	0	0	2	7	4
---	---	---	---	---	---	---	---	---	---	---	---

**(V) Category Options**

The Application Form devised by the Board provides an opportunity to a candidate to indicate his preference for a course, category and the institution in which he/she would like to be considered. The codes (various codes have been given at **Annexure III.**) for these options must be filled carefully because the selection of a candidate for a particular course will depend upon the codes for courses / Institutions / categories written by him/her in the relevant spaces provided in the Application Form. These options are of the following kinds :

**A. Category Option (S.No. 2)**

A candidate shall be considered for selection against the seats reserved for a category the code of which has been recorded by him/ her at Serial No. 2, even if he /she is eligible to be considered for seats available in more than one category. For example, the applicant may be the child of a Police Officer ( Code L 17 ) hailing from a Reserved Backward Area ( Code H 13) and belonging to a Scheduled Caste ( Code B. 07 ) . If he/ she indicates the Code "B 07" at S. No. 2 , he /she will be considered for selection against the available seats for Scheduled Castes candidates only.

**B. Course Option (S.No. 1) :**

A candidate can fill several course options ( A to H ) in the Application Form . If his/ her preferences are in the order of " A,C,F.....", he/she will be first of all considered for selection in M.B.B.S. course . If the candidate does not make it, he/she will be considered for selection in B.V. Sc. and A. H. courses, and so on .

**C. Streams Options for Engineering (S. No. 14):**

Five stream options are available for admission in Govt. College of Engineering and Technology, Jammu. A candidate who prefers Electronics and Communication Engineering (Code C3) may write this code in the boxes at 1. If his/her second choice be Computer Engineering ( Code B. 2 ) , he/ she must write this code in the boxes at 2 . All the five available streams can be indicated in this order .

**D. College/University Option (S. Nos. 12, 13, 14 and 15):**

- I. A candidate must indicate at S. No. 12 preference for the Govt. -run Medical College where he/she would like to seek admission by writing the code for that College in the three boxes at 1. He/she can choose the next best preference by writing the relevant code in the boxes at 2, and so on .
- II. A candidate who wishes to be considered for admission in Acharya Shri Chandra College of Medical Sciences Sidhra , Jammu ( ASCOMS) must indicate the same by filling the relevant code.
- II. College / University options are available for B.D.S. and B.V.Sc. & A.H courses also . These too must be filled carefully at serial Nos. 14 & 16, respectively.

**Note :** An option once exercised cannot be changed before or after the Entrance Test .

**Certificates to be attached**

Attested photostat copies of the following certificates should be attached with the non-scannable application form :

- I) Certificate of permanent residence.

- II) Marks certificate of the qualifying examination issued by the concerned Board .
- III) Date of birth as given in matriculation or equivalent examination certificate.
- IV) Certificate in respect of claim of belonging to any reserved category.
- V) No "under process" certificate shall be accepted under any circumstances.

**How to Submit**

- (i) Filled in application form, complete in all respects, can be submitted personally at the offices of the Board of Professional Entrance Examinations, 9A Polo View, Srinagar (Kashmir) or 4th Floor, South Block, Bahu Plaza, Jammu 180012 against receipt (Acknowledgement Card) during working hours on or before the last date fixed for receipt of application forms.
- (ii) Application Form can also be sent by registered post/ speed post in the name of the Controller of Examinations, BPEE at Jammu and Srinagar on the address as indicated above at (i). Application Forms received after the prescribed last date by whatever mode, including registered and speed post, will not be entertained. Nor will those forms be returned to the concerned candidates.
- (iii) If an application form is sent through post and is lost in transit or does not reach the office of the Board or reaches the office of the Board after prescribed date due to postal lapses/delays, the Board shall not accept any responsibility for the same.

- (iv) The candidates are advised not to send the application through courier service.
- (v) Once the application form is submitted, no alteration will be allowed thereafter.

## **9. ADMIT CARD**

1. No candidate shall be admitted to enter Examination Hall/Venue of Examination without valid admit card in original issued by the Board.
2. Admit card indicating allotted Roll No. and centre of examination shall be issued only to the eligible candidates. Mere possession of admit card shall not ipso facto confer eligibility on a candidate who is otherwise not eligible for appearing in entrance examination.
3. Admit card is an extremely important document. It should not be mutilated, defaced or any entry of it changed in any manner to make it doubtful.
4. Candidates shall have to collect admit card from the offices of the Board located at Srinagar and Jammu prior to the date of the entrance examination. The dates for the issue of admit cards shall be announced by a separate notification to be published atleast in two leading English Newspapers of the State. No separate intimation shall be sent to individual candidates for collection of admit card.
5. Candidates shall have to preserve admit card till the allotment of seats/completion of selection process.
6. Duplicate admit card shall be issued only before the conduct of entrance examination and in no case after the conduct of examination.

7. Candidate seeking a duplicate admit card shall have to submit an affidavit, quote his/her application form number, enclose a passport size photograph duly attested by a gazetted officer and adduce proof of submission of application form in the office of the Board.

### **CONDUCT OF ENTRANCE TEST**

#### **SCHEME OF EXAMINATION :**

Entrance Examination shall consist of 3 papers of objective type questions. Each paper will have 75 questions. Subjects combination for and , total marks for each paper and time duration are as follows:

Name of the Course	Number of Papers	Subjects	Marks	Time Duration
MBBS, BDS, B.V.Sc & A.H, BAMS, BUMS	Three	Physics Chemistry, Biology.	75 each	1½ Hours each
B.Sc ( Agri. ) & B. Sc. (Forestry)	Three	Physics Chemistry, Biology. or Mathematics.	75 each	1½ Hours each
B.E.	Three	Physics , Chemistry, Mathematics.	75 each	1½ Hours each



3. Do not open the seal containing question booklet until you are asked to do so.
4. Write your roll number on the cover page of the question booklet at the space provided for the purpose.
5. Candidates should not make any type of marking on the question booklet. Paper for rough work is included in the question booklet.
6. Each question paper has four series, which are in alphabets i.e. A, B, C, D printed on the cover page of the question booklet. The candidates may or may not get the same series for all the papers. At the end of the test, candidates can take the question booklets with them.

**(c) Nature of OMR Answer Sheet. (Annexure IV)**

1. The OMR Sheets are used in order to simplify the procedure of evaluation of the answer sheets and also to ensure highest accuracy. Each circle on the OMR sheet has an alphabetical or numerical value. So a small mistake in shading the round spot on the circle may make a big mistake.
2. The answer sheet will be supplied to the candidates in the examination hall.



**For Example Q. 11**

Chennai is the capital of the State of:

- |                   |               |
|-------------------|---------------|
| 1. Karnataka      | 2. Tamil Nadu |
| 3. Andhra Pradesh | 4. Kerala     |

The *correct response* is (2). Locate the question number in the Answer Sheet and darken the circle under column (2) as shown below.

A

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

Correct way of answering

Ensure that the circle is completely darkened. Incomplete or faintly darkened circle will be *rejected* by the *Optical Scanner* and will be treated as a wrong method of marking and consequently no mark will be awarded for the same.

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

B

27	○	●	○	●
28	○	○	○	○
29	○	◐	○	○
30	○	○	○	○
31	○	◑	○	○

In correct way of answering

**(d) Instructions**

Candidates are required to go through the instructions given below carefully.

1. No textual material, printed/handwritten, will be allowed in the hall. Candidates are advised not to carry any such material in the examination hall.
2. No candidate shall be allowed to enter examination hall for appearing at examination after the distribution of question paper i.e, 9:55 am.
3. The candidates are not allowed to bring mobile phones/ calculators/ pocket transistors / electronic watches with facilities of calculator/ slide rules, any form of table or any other such aid.
4. Tea, Coffee, Cold Drinks or snacks are not allowed in the examination hall during the course of examination.
5. Smoking in the examination hall is prohibited.
6. The candidate must sit in the seat allotted to him/ her.
7. In no case will any candidate change his/ her seat.
8. No candidate will leave the hall before the expiry of full time duration prescribed for the examination and without handing over answer sheet, to the Invigilator on duty.

9. No person/ persons other than those authorized by the BPEE shall be allowed to enter the examination hall.
10. Amanuensis will not be allowed.
11. The candidate's misbehaviour in any manner in the examination hall shall entail him/ her disqualification. Any disturbance in the examination hall shall be deemed as misbehaviour and the candidates shall forfeit the right to continue to sit in the examination hall. The decision of the centre Supervisor shall be final:

Time activity schedule for the candidates in the examination hall on each day/shift of examination.

***For Paper I***

9:25 am	Reporting time
9:30 am	The Invigilator shall ascertain the identity of each candidate by comparing his/her facial appearance with the photographs on the admit card and attendance sheet. The centre Supervisor shall also check the identity of the candidates and ensure that only the genuine candidates have been allowed to sit in the examination hall and there is no case of impersonation.

9:45 am	Candidates will be given answer sheet. They will go through instructions printed and fill in the particulars on the answer sheet.
9:55 am	They will be given question booklet. The question booklet number is to be entered on the answer sheet.
10:00 am	They will break open the seal of the question booklet and start attempting the questions.
11.30 am	Paper I ends The candidate will remain in their seats. They will hand over the answer sheets to the Invigilator and leave the examination hall only when they are asked to do so.

**Note:-** After distribution of answer sheets, no candidate shall be allowed to go out of the examination hall under any circumstances,

***For Paper II***

1:25 pm	Reporting time
1:30 pm	The Invigilator shall ascertain the identity of each candidate by comparing his/her facial appearance with the photographs on the admit card and attendance sheet. The centre supervisor shall also check the identity of the candidates and ensure that only the genuine candidates have been allowed to sit in the examination hall and there is no case of impersonation.



## MERIT LIST

### PREPARATION OF MERIT LISTS.

1. Merit list for each course shall be prepared on the basis of inter-se merit of the candidates in the Common Entrance Test in the descending order for Open Merit Category and for each Reserved Category, separately.
2. In case of any subsequent vacancy / vacancies caused by whatsoever reason in any category, the same shall be filled from amongst the candidates of that particular category strictly according to merit. In the event of non-availability of eligible candidates in any Reserved Category, the relevant vacancies shall go to the Open Merit Category.
3. In case two or more candidates obtain equal merit, the inter-se merit of such candidates shall be determined (as per preference shown by them) in the Application Form as under:
  - a). MBBS / BDS / B.V.Sc & BAMS & BUMS.
    - i). Candidates obtaining higher marks in Biology.
    - ii). Candidates obtaining higher marks in Biology and Chemistry in aggregate, if marks in Biology are equal.
    - iii). Candidates older in age to be preferred if points as per (i) and (ii) are equal.
  - B). B.Sc (Agriculture & B.Sc Forestry)
    - i). Candidates obtaining higher marks in Chemistry.

ii). Candidates obtaining higher marks in Chemistry and Physics, if marks in Chemistry are equal.

iii). Candidate older in age to be preferred if points as per (I) and (II) are equal

(C) B.E.

i). Candidates obtaining higher marks in Mathematics.

ii). Candidates obtaining higher marks in Mathematics and Physics, if marks in Mathematics are equal.

iii). Candidates older in age to be preferred if points as per (i) and (ii) are equal

#### **Rechecking / Retotalling of marks.**

Rechecking / retotalling of marks will be allowed in C.E.T. Rechecking / retotalling of marks will be allowed by submitting an application alongwith a bank draft of Rs. 300.00 per subject in favour of F A/CAO, Board of Professional Entrance Examinations, payable at RCC Srinagar / RCC Jammu, within 30 days of the declaration of result.

## COUNSELLING

1. Counselling is an important element in the process of selection. This affords the candidates an opportunity of indicating their preferences in a transparent manner following the announcement of result of the Entrance Test of a course which is basis for the process of counselling. Therefore, Board of Professional Entrance Examinations arranges counselling for allotment of streams under various available courses selection to which does not otherwise get completed on the basis of result of Entrance Test itself.
2. In the Common Entrance Test for selection to MBBS/BDS and different Agricultural Courses, candidates usually indicate their first preference for MBBS followed by BDS and Agricultural courses. As it is, the number of seats available in the Government - run Medical Colleges in the State is limited and after selecting candidates for Medical courses on merit against the available seats, a large number of candidates have to be considered for different courses in Agricultural Sciences in terms of their merit in the Common Entrance Test and also according to the preference shown by them in their application forms..
3. Again, in Engineering courses many streams are available and selection has to be made in accordance with the choices of the candidates, which requires counselling.
4. Details of the seats available in BDS/B.V.Sc./Agriculture/Forestry are given in the Brochure together with the information about availability of free seats as also of payment seats in these courses. Free seats in B.V.Sc., for instance,

are available in both the Agriculture Universities of the State and so are the payment seats. The result of the test conducted by the Board indicates merit of the candidates and they should make an exercise at their own level immediately after the declaration of the result to see whether their merit is such as would entitle them to allotment of free seats available in the two Agricultural Universities, and then indicate preferences during counselling accordingly. Depending upon the merit of the candidates, free seats are allotted according to the choices made by the candidates during counselling. Payment seats are likewise allotted on merit.

5. Options should be indicated clearly in the Register during the counselling. For example, a candidate can indicate his options in the following manner:

i) B.V.Sc. free (Kashmir)/B.V.Sc. free (Jammu)

ii) B.V.Sc. payment (Kashmir)/B.V.Sc. payment (Jammu)

iii) Agriculture free(Kashmir)/ Agriculture free( Jammu)

iv) Agriculture payment(Kashmir)/ Agriculture payment(Jammu) and so on.

Such a candidate will first be considered on merit for allotment of a 'free seat' in B.V.Sc. available in Kashmir Division. If he/she does not qualify for allotment of such a free seat, he/she can then be considered for a free seat in the Jammu Division.

Consideration for payment seats will be made similarly. If he/she is not entitled to B.V.Sc. seat, either free or payment, he / she will then be considered for other courses on merit strictly in the order of preferences indicated by him/her.

Another candidate records his/her option as follows :

i) B.V.Sc. free (Kashmir) / B.V.Sc payment (Kashmir)

ii) B.V.Sc. free (Jammu)/B.V.Sc. payment(Jammu and so on.

Such a candidate will first be considered for a free seat in B.V.Sc. course in Kashmir Division. Since this candidate has indicated his/her preference for a payment seat in Kashmir Division in preference to a free seat available in Jammu Division, he/she will be considered for selection accordingly.

6. Regarding admission to Engineering Courses, counselling will be confined to selection to Government College of Engineering & Technology, Jammu and the Private Engineering Colleges functioning in the State. The details of fee structure and streams available in these institutions are contained in the Information Brochure. Candidates should thoroughly familiarize themselves with the streams available in each Engineering Institution before they come for counselling. Multiple choice of streams as also of Institutions can be indicated during counselling and each candidate will be considered strictly in the order of the choices indicated in the Register maintained for recording options. It ought to be noted that choices of institutions or streams once made shall not be changed under any circumstances.

### **Illustration**

A candidate for Engineering Course from Kashmir Division gives the following choices in the relevant columns of the Register for counselling: -

<b>S.No.</b>	<b>College/Institution opted (In order of priority)</b>	<b>Streams opted (In order of priority)</b>
1.	<b>SSM (Kashmir)</b>	<b>Civil/ Mech./ Electronics etc.</b>
2	<b>GECT (Jammu)</b>	<b>E&amp;C/ Electrical/ Mech./ Civil etc.</b>
3	<b>MIET (Jammu)</b>	<b>E&amp;C/I.T./ Electrical etc.</b>

This candidate is clearly making a conscious choice of seeking admission in a private Engineering College, where there are only payment seats, in preference to seeking admission in Government Engineering College where nominal fee is charged. His/her choice is either based on the calculation that because of merit, he/she can not get a seat in Government Institution, or because he/she would like to study in an Institution nearer his/her home.

7. The important point is that immediately after the result of the Entrance Test, the candidates who figure in the merit list, in the open merit as also the reserved categories, should make their own assessment of what can accrue to them in the shape of allotment of streams on the basis of their merit in the relevant categories and then make their choices of individual streams during counselling. Lack of proper appreciation of the logic of result of the

Entrance Test can lead to avoidable unintended consequences. The responsible officers of the Board charged with the task of conducting counselling are there to render all legitimate assistance.

8. The candidate is to appear personally for counselling and will be required to bring with him/her admit card issued by the Board . If, however, for some unavoidable reasons it is not possible for a candidate to appear personally , he / she may send his / her authorized representative with admit card , undertaking and authority letter to the effect that allotment made on the basis of choice indicated by such representative shall be binding on him/her . Formats of undertaking and authority letter are given at **Annexure V**.
9. If a candidate or a person authorized by him/ her in the manner indicated above fails to appear on the date fixed for counselling , he/she or the authorized representative can be accommodated within the dates fixed by the Board for counselling of candidates as a whole provided a cogent reason is adduced in writing for failure to appear for counselling on the date fixed by the Board. If a candidate fails to appear for counselling either personally or through authorised representative during the entire period for which counselling is conducted by the Board, such a candidate will not be accommodated after the conclusion of the counselling and will forfeit his / her right to selection.
10. On the conclusion of the counselling process, allotment of streams in a course of study will be published in local newspapers through notification, and the candidates must take admission in the concerned institutions within

the period indicated in the notification. Failure to join the allotted institutions within the prescribed period will mean automatic forfeiture of the right to selection of the concerned candidates.

11. After the allotment of streams and selection process , if some candidates do not join the course in the allotted institutions and it comes to the notice of the Board that there are unfilled seats in such institutions, these available seats will be filled in the following manner:
  - (a) Candidates who were allotted streams based on second or third preferences and so on , as the case may be, in terms of their merit , will be considered for the first choice indicated by them , if the available seats happen to be of first choice or the second choice , and so on, as the case may be. They shall be accommodated against these available seats in that stream in terms of the merit secured by them in the Entrance Test . Thus in such cases only upgradation will be involved. This will be done by the Board on its own.
  - (b) The residual seats that become available after upgradation or otherwise will be allotted on second counselling for which separate notification will be issued by the Board indicating the range of merit and all candidates falling in that range will be called for **second counselling**.
  - (c). All such candidates will be accommodated in the institutions for which they have shown preference during counselling to the extent possible. If it is not possible to accommodate such candidates according to their choice of institutions, they will be allotted institutions where these seats are available.

**Annexure I**

**FOLLOWING ARE THE COMPETENT AUTHORITIES FOR  
ISSUING RESERVED CATEGORIES CERTIFICATES**

<b>S.No</b>	<b>Category</b>	<b>Authorized officers to issue certificates</b>
(I)	Scheduled Castes	Revenue officer not below the rank of Tehsildar
(II)	Scheduled Tribes	Revenue officer not below the rank of Tehsildar
(III)	Socially & Educationally Backward Classes	Revenue officer not below the rank of Tehsildar
(IV)	Weak and under-Privileged Classes (Social Castes)	Revenue officer not below the rank of Tehsildar
(V)	Resident of area Adjoining Actual Line of Control	Revenue officer not below the rank of Tehsildar
(VI)	Resident of backward area	Revenue officer not below the rank of Tehsildar
(VII)	Children of Defence Personal	Commanding Officer of the unit / Zila Sanik Board
(VIII)	Children of Permanent Residents of paramilitary Forces & State Police personnel Serving in the State.	DIG Concerned
(IX)	Candidates possessing Outstanding proficiency in Sports	Secretary, J&K Sports Council
(X)	Candidates hailing poor and Backward families whose annual Income does not exceed Rs. 70, 000 (For selection to BUMS in Institute of Asian Medical Sciences, and BAMS In Jammu Institute of Ayurvedic and Research, Jammu)	Deputy Commissioner of the District. (in the prescribed format)

**Annexure II**

**Income Certificate for Category (XI)**

Government of Jammu and Kashmir

OFFICE OF THE DEPUTY COMMISSIONER \_\_\_\_\_ (DISTRICT)

**\*\*INCOME CERTIFICATE**

It is certified that the total Annual income from all sources of  
Shri. \_\_\_\_\_ Father/ Guardian of \_\_\_\_\_  
Resident of \_\_\_\_\_ District \_\_\_\_\_  
does not exceed Rs. 70,000,00 (Rupees Seventy Thousand only) per annum.

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

Deputy Commissioner

Dated : \_\_\_\_\_

(District)

**Annexure III**

**CODES FOR FILLING APPLICATION FORM**

**(1) Codes for Course of Study (SR. No. 1)**

- A. MBBS ( Govt. run Medical Colleges)
- B. MBBS ( ASCOMS)
- C. BDS.
- D. BV.Sc
- E. BAMS
- F. BUMS
- G. B. Sc. ( Agri.)
- H. B. Sc. ( Forestry )
- I. B.E.

<b>(2) Category</b>	<b>Codes</b>
i. Open Merit ( OM)	A. 06
ii. Scheduled Caste ( SC)	B.07
iii. Scheduled Tribes Gujjar & Bakerwal(STGB)	C.08
iv. Scheduled Tribe Leh. Distt. (STL)	D. 09
v. Scheduled Tribe of Kargil Distt. (STK)	E. 10
vi. Other Scheduled Tribes (STO)	F.11
vii. Weak and under privileged classes (Social Casts)	G.12
viii. Resident of Backward Area (RBA)	H. 13
ix. Residents of Area Adjoining Actual Line of Control (ALC)	I. 14
x. Children of Defence Personnel (Permanent Residents of J&K State) (CDP)	J.15

xi.	Sports Category.(SP)	K. 16
xii.	Children of State Police Personnel and Para-military Forces (Permanent residents ) of J&K State (JKPM)	L.17
Xiii	Poor and Backward Families	M.18

**(3) Codes for Government -run Medical Colleges.( SR. NO. 12)**

- A. 01 Govt. Medical College, Srinagar
- B. 02 Govt. Medical College, Jammu
- C. 03. SKIMS Medical College , Bemina, Srinagar.
- D. 04 ASCOMS

**(4) Codes for Govt. Dental Colleges ( SR. No. 13)**

- J1 Govt. Dental College ,Jammu.
- S2. Govt. Dental College , Srinagar.

**(5) Codes for Disciplines in Govt. College of Engineering and Technology Jammu. ( SR. No. 14 )**

- A1 Civil Engineering
- B2 Computer Engineering
- C3. Electronics and Communication Engineering
- D4 Electrical Engineering
- E5 Mechanical Engineering

**(6) Codes for Universities for B.VSc & A. H (SR. No 16)**

- J1 SKUAST Jammu.
- K2 SKUAST Kashmir



**ANNEXURE - V**

**UNDERTAKING REGARDING AUTHORIZATION**

I, \_\_\_\_\_ Son/Daughter/Wife of Mr. \_\_\_\_\_ aged \_\_\_\_\_ years \_\_\_\_\_ months, bearing Roll No. \_\_\_\_\_ placed at Rank No. \_\_\_\_\_ in the Entrance Examination for admission to MD/MS/PG Diploma Courses, 2006, conducted by BPEE do hereby solemnly affirm and undertake that the decision of my authorised representative, Mr./Mrs./Miss \_\_\_\_\_ son/daughter/wife of \_\_\_\_\_ Mr. \_\_\_\_\_ aged \_\_\_\_\_ years, regarding selection/rejection of seat on the date of personal appearance ( \_\_\_\_\_ ) shall be binding on me and I shall not have any claim whatsoever, other than the decision taken by my authorised representative on my behalf on \_\_\_\_\_.

Signature of Candidate \_\_\_\_\_

Name \_\_\_\_\_

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

Rank \_\_\_\_\_

Address \_\_\_\_\_

**Authority letter**

I, \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ bearing Roll No. \_\_\_\_\_ for Entrance Examination for admission to MD/MS/PG Diploma Courses, 2006 do hereby authorise Mr./Mrs./Miss \_\_\_\_\_ son/daughter/wife of Mr. \_\_\_\_\_ R/o \_\_\_\_\_ to represent me on \_\_\_\_\_ (Date) before the committee for allotment of a seat in MD/MS/PG Diploma courses 2006. The signatures and the photograph of above named Mr./Mrs./Miss \_\_\_\_\_ are attested below.

Photograph  
of candidate  
attested by  
Gazetted  
Officer

Signature of Candidate \_\_\_\_\_

Name \_\_\_\_\_

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

Rank \_\_\_\_\_

Address \_\_\_\_\_

Photography of  
authorised  
representative  
attested by the  
candidate

Signature of Authorised \_\_\_\_\_

representative duly

attested by the candidate

NB : Signature & Seal of attesting authority should cross over the photographs.

## SYLLABUS FOR ENTRANCE EXAMINATIONS

### PART - III BIOLOGY

#### BOTANY

##### **Unit : I**      **Cell as a unit of life**

Ultra -structure of cell, structure and functions of various organelles.

1. Micromolecules, water, minerals, mono and oligosaccharides, amino acids, nucleotides, macro-molecules, polysaccharides proteins and lipids.
2. Cell wall and plasma membrane (special reference to Fluid Mosaic Model)
3. E.R. and ribosomes.
4. Mitochondria
5. Chloroplasts.
6. Golgi Complex
7. Nucleus
8. Lysosomes
9. Cell vacuole and cell inclusions
10. Centriole, basal bodies, cilia and flagella
11. Structure of prokaryotic cell

##### **Unit II**      **Morphology and Anatomy of Angiosperms**

1. Modifications of roots and their functions.

2. Modifications of stems and their functions.
3. Modifications of leaves and their functions.
4. Meristematic tissue-characteristics and classifications on the basis of stage of development, origin, location and functions, structure and organization of apical meristems.
5. Simple permanent tissue, parenchyma, collenchyma and sclerenchyma
6. Complex permanent tissue: xylem and phloem
7. Structure of monocot and dicot root
8. Structure of monocot and dicot stem.
9. Structure of monocot and dicot root.
10. Secondary growth of dicot stem and dicot root.

**Unit III**      **Plant Physiology**

Water relation of the plants.

1. Cell as an osmotic system, water potential, D.P.D., absorption of water (active and passive), ascent of sap with special reference of transpiration pull theory.
2. Transpiration-mechanism of stomatal transpiration (Levitt hypothesis), factors influencing transpiration,
3. Mineral nutrition-with special reference to nitrogen, phosphorus and potassium uptake of minerals (active and passive).

4. Photosynthesis-photosynthetic pigments, mechanism of photosynthesis, photophosphorylation (cyclic and non-cyclic), C3 and C4 pathways photorespiration, C2 cycle, factors affecting photosynthesis.
5. Cellular respiration, glycolysis, Krebs's cycle, E.T. chain, oxidative phosphorylation, high-energy bonds.
6. Enzymes-chemical nature classification and properties, mechanism of action, Enzyme-substrate complex and allosteric modulation, factors influencing enzyme action.
7. Plant hormones and growth regulation - roles of auxins, gibberellins, cytokinins and abscisic acid.
8. Tropic movements.

**Unit IV      Developmental Biology (Plants)**

1. Structure and life history of:
  - (a) Chlamydomonas
  - (b) Rhizopus.
2. Life cycle and alternation of generations of.
  - (A) Funaria.
  - (b) Dryopteris.
3. Pinus-External structure of sporophyte, anatomical features of pine needle, male and female cones, seed formation.
4. Structure of flower, anther and ovule, placentation and its types.
5. Inflorescence (Simple).
6. Pollination (self and cross).  
Contrivances favoring self and cross-pollination.

7. Development of male and female gametophytes.  
Fertilization and post-fertilization changes.
8. Structure and germination of seeds - pea, castor and maize.
9. Seed dormancy, importance and causes, methods of breaking seed dormancy.
10. Fruits development (maturation and ripening), parthenocarpy and its importance, simple succulent fruits.

**Unit V**      **Applications of Biology**

1. Methods of improvements of crop plant - selection, introduction, hybridization, polyploid breeding, induced mutations, tissue culture and genetic engineering.
2. Need of fertilizers - hazards associated with chemical fertilizers.
3. Biofertilizers - green manuring, farmyard manuring, compost manuring, role of bacteria, cyanobacteria and mycorrhizae as biofertilizers, importance of biofertilizers.
4. Pesticides, need for pesticides, chemical pesticides, types and their role.
5. Hazards associated with chemical pesticides.
6. New crops and their prospects - Leucaena, jojoba, guayula and winged bean.

## ZOOLOGY

### **Unit - VI**      **Heredity and Genetics**

1. Principles of inheritance, Mendel's work, principles of dominance, segregation and independent assortment, test cross and back cross.
2. Incomplete dominance, linkage and crossing over, polygenic inheritance, pleiotropy.
3. Structure of eukaryotic chromosomes, nucleosome concept, plasmids and their role.
4. DNA as genetic material - evidence from bacterial transformation and transduction.
5. Nucleic acids - structure of DNA, DNA duplication, structure of RNA and its types.
6. Genetic code, and protein synthesis, transcription, translation, reverse transcription.
7. Gene expression in prokaryotes with special reference to Lacoperon.
8. Cell division- mitosis, meiosis.
9. Aneuploidy of autosomes (Down's, Edward, Patau's syndrome), Aneuploidy of sex chromosomes (Klinefelter's syndrome, super female, super male, Turner's Syndrome), genetic counselling.

### **Unit VII**      **Anatomy and Physiology**

1. Animal tissues: epithelial, connective, muscular and nervous, structure and functions of human skin.

2. Animal nutrition: types, digestive organs of man, physiology of digestion, nutritional requirements of carbohydrates, proteins, fats., vitamins and minerals, digestion of carbohydrates, proteins, fats.
3. Gas exchange and, transport: respiratory organs in man, mechanisms of respiration, physiology of respiration, respiratory volumes.
4. Circulation: composition of blood and lymph and their functions, open and closed type of vascular system, structure and pumping action of human heart, pulmonary, portal and systemic circulation, heart beat and blood pressure.
5. Excretion and osmoregulation: structure of human kidney, structure of nephron, physiology of excretion, ammonotelism, ureotelism, uricotelism, role of kidney in osmoregulation.
6. Nervous system: central nervous system, peripheral nervous system, autonomic nervous system, transmission of nerve impulse and reflex action, structure and function of sense organs (eyes and ear).
7. Endocrine system: endocrine glands in man, hormones and their functions, diseases caused by hormonal imbalance.
8. Movement and locomotion: types of joints and fractures. mechanisms of muscle contraction.
9. Human reproductive system: female reproductive system and ovarian cycle, menstrual cycle, male reproductive system, spermatogenesis, oogenesis.
10. Developmental biology: fertilization, zygote formation and cleavage, development of three germinal layers, gerontology, various cellular and extra cellular changes during ageing, theories of ageing.

**Unit VIII**      **Taxonomy**

1. Salient features of invertebrate phyla: Porifera, Coelenterate, Platyhelminthes, Nematihelminthes, Annelida, Mollusca, Arthropoda, Echinodermata with typical examples.
2. Salient features of various chordate classes: Cyclostomata, Chondrichthyes, Osteichthyes, Amphibia, reptilia, A ves and Mammalia with typical examples.
3. Animal body pattern and symmetry.
4. Body cavity in invertebrates and vertebrates.

**Unit IX**      **Evolution**

1. Evidences in favour of organic evolution- morphological, palaeontological, embryological and comparative anatomy.
2. Darwinism and Neo-Darwinism.
3. Evolution of man.
4. Speciation and isolation. (geographical and reproductive)

**Unit X**      **Environmental and Human Welfare**

1. Environmental pollution: 'air pollution, major pollutants (oxides of sulphur and oxides of nitrogen; aerosols, carbon monoxide, photochemical oxidants) and their effects, water pollution (pollutants, effluents and their effects, eutrophication and B.O.D.), treatment and recycling of waste water, noise pollution and its hazards, harmful radiations, hazards of nuclear fallout, protective measures against radiations.

2. Communicable diseases, bacterial diseases (cholera, tuberculosis), viral diseases (poliomyelitis, hepatitis, sexually transmitted diseases (V.D. - syphilis, gonorrhoea, AIDS), protozoan diseases (amoebiasis, malaria), helminth diseases (taeniasis, ascariasis).
3. Non-Communicable diseases: heart diseases, strokes, diabetes, arthritis and cancer, allergies and inflammation, bronchial asthma, food allergy and dermatitis.
4. Alcoholism and smoking: short and long term effects of alcohol on human health, ill effects of smoking.
5. Drug abuse: classification of drugs and their hazards on human health.
6. Test-tube baby: amniocentesis.
7. Blood groups: blood group incompatibility; Rh factor & its incompatibility, haemophilia.

**PART - IV**  
**MATHEMATICS**

**Unit**            **Algebra**

- (i).    Sets, Relations and Functions:  
Sets and their representation, finite and infinite set, subsets, empty set, universal set, complement of a set, union and intersection of sets and their algebraic properties including De-Morgan's Laws. Difference of sets and symmetric difference of sets. Cartesian product of sets, Relations, Equivalence relations. Function (Mapping). Domain and range of function. Into, onto, one-one and many one function. Composites function.
- (ii).    Complex number in the form  $a+ib$ , representation of complex numbers by points in a plane. Argand diagram algebra of complex numbers. Real and imaginary parts of complex numbers. Modulus and argument (amplitude) of a complex number. Complex conjugate. Square root of a complex number-cube roots of unity. Triangle, inequality.
- (iii).    Theory of Quadratic Equations Solution of quadratic equation in complex number system  $aX^2 + bx + c = 0$ ;  $a, b, c \in \mathbb{C}$ . Relation between roots and coefficients, nature of roots of a quadratic equation. Formation of quadratic equation with given roots.

- (iv). Sequences and progressions  
Arithmetic progression and geometric progression, First term, common difference, nth term, sum of n terms of an A.P. Arithmetic mean, insertion of Arithmetic means between any two given numbers, First term, common ratio, nth term sum to n terms and infinite number of terms of a G.P. Insertion of G.M.'s between any two given numbers. Recurring decimal numbers and G.P. Sum to n terms of special cases viz.  $\ln$ ,  $\ln^2$ ,  $L:n$
- (v) Binomial Theorem : Expansion binomial with positive integral index, general and particular terms. Finding middle terms and term independent of x Expansion of binomial with any index.

**Unit II      Two Dimensional Geometry**

- i. Point - Distance formula, area of a triangle. Condition of collinearity of three points and section formula. Centroid and in center of triangle. Locus and its equation. Slope of line. Intercept of a line on coordinate axes.
- ii. Straight line; various forms of equations of a line, intersection of lines. Angle between two lines. Lines parallel and perpendicular to a given line. Condition for concurrency of three lines. Distance of a point from a line and distance between two parallel lines. Coordinates of orthocentre and circumcentre of a triangle.

iii. Pair of straight lines: Homogeneous equation of second degree in  $x$  and  $y$ , represents a pair of straight lines passing through origin. Angle between pair of lines through origin and condition of parallelism and perpendicularity. Joint equation of angle bisectors. Condition for general second degree equation to represent a pair of lines.

in  $x$  and  $y$ , represents a pair of straight lines passing through origin. Angle between pair of lines through origin and condition of parallelism and perpendicularity. Joint equation of angle bisectors. Condition for general second degree equation to represent a pair of lines.

iv. Circle: Standard equation of a circle, general form of the equation of a circle, its center and radius. Equation of circle whose end points of diameter are given. Point of intersection of a line and a circle with center at origin and condition for a line to be tangent to a circle. Length of tangent. Equation of tangent to a circle at a given point. Equation of family of circles through the intersection of two circles.

v. Conic section. Equations of parabola, ellipse and hyperbola in standard forms. Condition for a line  $y = mx + c$  to be tangent to parabola, ellipse and hyperbola.

**Unit III**      **Trigonometry**

- i.      Circular functions and their properties
  
- ii.     Application of circular functions of difference and sum of two angles.
  
- iii.    Application of sum and product of sines and of cosines of angles.
  
- iv.     Application of sine and cosine rule.
  
- v.      Trigonometric equations.  
Inverse trigonometric functions - Principle values, properties of  
inverse trigonometric functions within the principle values viz  $\text{Sin}^{-1}$   
 $(\text{Sin } x)=X$   
 $\text{In } x = \text{osec } x, \text{In } x + \text{os } x = \text{lt } \text{Sin}^{-1} x + \text{Cos}^{-1} x = \text{Sin}^{-1} [x \sim = y \{17 \}]$

**Unit IV**      **Determinants and Matrices**

- i.      Determinants: their expansion, minors and cofactor, zero relations  
and properties of determinants.
  
- ii.     Application of determinants in solution of equation up to three  
variables (Cramer rule), Area of triangle.
  
- iii.    Matrices, definition with examples, types of matrices, equality of  
matrices. Addition and scalar multiplication of matrices and their  
properties.

- iv. Transpose of a matrix, symmetric and skew symmetric matrices, matrix multiplication.
- v. Adjoint and inverse of matrices. Solution of simultaneous linear equations up to three variables by matrix inversion method.

Note: *In the treatment up to 3x3 determinants and matrices be considered.*

**Unit V**      **Vectors**

- i. Vectors as directed, line segment, magnitude and direction of a vector, equal vectors, unit vector, zero vector, position vector of a point, localized and free vectors, parallel and collinear vectors, components of a vector in two and three dimensions.
- ii. Addition of vectors, multiplication of a vector by a scalar position vector of a point dividing a line segment in a given ratio.
- iii. Scalar (or dot) product of two vector, projection of a vector. Vector (or cross) product of two vectors and its application in finding the area of triangle and parallelogram.
- iv. Scalar triple product in finding the volume of a parallelopiped. Coplanarity of three vectors or four points using scalar triple products. Vector triple product.

**Unit VI**      **Three dimensional geometry**

- i. Coordinate axes and planes in three-dimensional space, coordinates

of a point in space. Distance between two points, section formula. direction cosines and direction ratios of a line joining two points, angle between two lines whose direction ratios are given.

- ii. Vector equation of line through a point and parallel to a given vector, vector equation of a line through two points. Collinearity of three points. Conditions for parallelism and perpendicularity of two lines.
- iii. Perpendicular distance from a given point to a given line. Distance between two parallel lines. Shortest distance between two skew lines.
- iv. General equation of a plane, normal and intercept forms of equation of a plane, equation of plane passing through a given point and perpendicular to a given vector. Angle between two planes and conditions for parallelism and perpendicularity.
- v. Angle between a line and a plane and conditions for parallel and perpendicularity equation of a plane parallel to a given plane. Equation of a plane passing through intersection of two given plane. Distance between two parallel planes.

Note: *Vector and its Cartesian equivalent will be dealt side by side.*

**Unit VII      Cubic equation, limit and continuity of a function.**

- i. Statement of factor, theorem, synthetic division. relation between roots and coefficients of a given cubic equation.
- ii. Solution of cubic whose roots are connected with a given relation and solution of cubic whose roots are in A.P, G.P, H.P
- iii. Evaluation of symmetric functions of the roots of the cubic equation of the form  $ax^3+bx^2+cx+d=0$

- iv. Concept of  $\lim_{x \rightarrow a} f(x)$ ,  $\lim_{x \rightarrow a^+} f(x)$ ,  $\lim_{x \rightarrow a^-} f(x)$

$$x \rightarrow a \quad x \rightarrow a^+ \quad x \rightarrow a^-$$

Fundamental theorems on limits. Evaluation of limits using the following standard results

$$\lim_{x \rightarrow a} x^n = a^n, \lim_{x \rightarrow a} \ln x = \ln a, \lim_{x \rightarrow 0^+} \cos x = 1, \lim_{x \rightarrow 0} x^x = 1$$

$$x \rightarrow a \quad x \rightarrow 0 \quad x \rightarrow 0 \quad x \rightarrow 0$$

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

$$x \rightarrow 0 \quad x \rightarrow 0$$

- v. Continuity of a function at a point, sum, product and quotient of continuous functions. continuity of polynomials, exponential, logarithmic and inverse, trigonometric functions.

### **Unit VIII**

- i. Derivative of sum, difference, product and quotient of two or more functions.
- ii. Derivative of a composite, algebraic and trigonometric functions. Derivative of inverse trigonometric functions, logarithmic functions and exponential functions.
- iii. Applications of derivatives:- increasing and decreasing functions, equations of tangents and normal to a given curve at a given point, maxima and minima (absolute, local) (simple problems only).
- iv. Rolle's Theorem, Lagranges Mean Value Theorem with simple applications.

### **Unit IX**

- i. Integration as the inverse process of differentiation. Integration by substitution and by parts.
- ii. Evaluation of definite integrals
- iii. Properties of definite integrals
- iv. Application of integrals in finding the area bounded by a curve between two ordinates and x-axis (simple problems). order and degree of differential equation.

- v. Solution of differential equations by method of variable separable, solution of linear differential equation of first order of type  $dy/dx+py=q$  where p and q are constants or functions of x alone.

**Unit X**      **Mathematical statistics**

- i. Random experiment and its associated sample space. events as subsets of a sample space. probability of an event. Probability of union, intersection of two events which are mutually exclusive/not mutually exclusive (simple problems)
- ii. Definition of random variable, discrete and random variables with example. Probability one random variable x with examples.
- iii. Mode and median of distribution of one random variable.
- iv. Distribution function and its properties examples of distribution function.
- v. Mathematical expectation, mean, variance. standard deviation and m.g.f. of a random variable x. (simple problems) continuous type of density function of