

UNIVERSITY OF ALLAHABAD

Post Graduate Admission Test (PGAT) – 2016

Please refer <https://www.digialm.com/EForms/html/form4394/index.html> or [Admission-2016](#) link of www.allduniv.ac.in for more details.

PGAT – 2016 will be conducted for the admission in the course of study given in following table:

M. A. (Ancient History, Development Studies, Economics, Education, English Literature /Language, Film & Theatre, Hindi, Mass Communication, Medieval & Modern History, Music, Painting, Philosophy, Political Science, Sanskrit, Sociology, Urdu)	M. Sc. (Agricultural Science (Ag Bot/Ag Chem & Soil Sc/Ag Zool & Entomology), Applied Geology, Bio-Chemistry, Bioinformatics, Botany, Chemistry, Computer Science, Environmental Science, Materials Science, Physics, Rural Technology and Development, Textile and Apparel Designing, Zoology)
M. P. A. (Music) (Vocal, Sitar, Tabla)	M. Com.
M. A. /M. Sc. (Anthropology, Defence Studies, Geography, Mathematics, Psychology, Statistics)	M. P. Ed.
M. Tech. (Earth System Sciences)	M. F. A. (Master in Fine Arts)

IMPORTANT NOTE

The applicant must take due care while filling up the Online Application Form. The information provided by the applicant in his/her Online Application Form shall not be changed or altered in any case and the University will not entertain such request under any circumstance. The University shall not be liable for any mistake made by the applicant.

In case if the number of registered candidates at any of the Examination Centres are Twenty (20) or less than Twenty (20), then in such case the registered candidates will be allotted to Allahabad Centre.

Any enquiry for PGAT-2016 shall be entertained up to 90 days from the declaration of result.

The candidate may apply for a maximum of five subjects based on his eligibility. The candidate has to attempt the questions of each subject in which he/she wish to take admission.

There will be an increase of 50% of the application fees for each additional discipline.

Pattern of Entrance Test

The entire entrance will be completed in one shift with a minimum of 01:00 Hour and maximum of 03:00 Hours based on number of subjects student wish to apply and as illustrated in Table 1. The paper will be divided in two sections namely **Section A** and **Section B**.

The **Section A** will be General Aptitude Test and will be common to all the disciplines of PGAT having 40 questions. The question will be based General Awareness, Current Affairs, General Science, Reasoning, Quantitative Ability, General Hindi and General English.

The **Section B** will be subject Proficiency Test and will be based on the subjects in which candidate wish to take admission. There will be 35 questions for each subject. The syllabus for each subject is given in the brochure and the questions will be asked from this.

The start time of admission test will be based on the number of subjects students wish to apply and is illustrated in Table 1 of page 2.

The candidate will get 03 marks in the common paper and 06 marks in the paper of the subject for each correct answer. There will be minus marking for wrong answers and the candidate will be given -1 mark in the common paper and -2 marks in the paper of the subject for each wrong answer.

There is no provision for Scrutiny/Revaluation.

TABLE 1: IMPORTANT DATES

DATE	REPORTING TIME	EXAM. TIME	THE APPLICANTS WHO HAS APPLIED FOR
25-30 May 2016. The exact date will be declared later on.	08:00AM	09:00AM to 12:00PM	Five Subjects
	08:30AM	09:30AM to 12:00PM	Four Subjects
	09:00AM	10:00AM to 12:00PM	Three Subjects
	09:30AM	10:30AM to 12:00PM	Two Subjects
	10:00AM	11:00AM to 12:00PM	Two Subjects

The candidate is strongly advised to go through this brochure carefully before filling up Online Form.

ACADEMIC DEPARTMENTS/UNITS/INSTITUTES/CENTRES	
FACULTY OF ARTS	FACULTY OF COMMERCE
Ancient History, Culture & Archaeology	Commerce & Business Administration, Economics
Anthropology	
Arabic & Persian	FACULTY OF LAW
Education	Law
English & Modern European Languages	
Geography	INSTITUTE OF INTERDISCIPLINARY STUDIES (IDS)
Hindi & Modern Indian Languages	Centre for Film & Theatre
Journalism & Mass Communication	Centre for Gandhian Studies
Medieval & Modern History	Centre of Bio-informatics
Music & Performing Arts	Centre of Bio-technology
Philosophy	Center of Environmental Sciences
Physical Education	Centre for Globalization & Development Studies
Political Science	Centre for Material Science
Psychology	Centre of Women Studies
Sanskrit & Prakrit and Oriental Languages	K. Banerjee Centre of Atmospheric & Ocean Sciences
Sociology	M.N. Saha Centre of Space and Studies
Urdu	Nano Technology Application Centre
Visual Arts	
FACULTY OF SCIENCE	INSTITUTE OF PROFESSIONAL STUDIES (IPS)
Bio-Chemistry	Centre of Computer Education
Botany	Centre of Fashion Design & Technology
Chemistry	Centre of Food Technology
Defence & Strategic Studies	Centre of Media Studies
Applied Geology (Earth & Planetary Science)	e-Learning Initiative

Electronics & Communication	
Home Science	CONSTITUENT UNIVERSITY INSTITUTE
Mathematics	Govind Ballabh Pant Social Science Institute
Physics	
Statistics	INDEPENDENT CENTRE
Zoology	Centre for Behavioural & Cognitive Science.

This brochure contains the following sections:

SECTION

- I : General Information
 II : Admission Rules & Procedure
 III : Mode of the Entrance Test and Syllabus
 IV : Information relating to the Admission Test

IMPORTANT NOTE

The candidate may apply for a maximum of five subjects based on his eligibility. The entrance examination will be conducted ONLINE. The candidate will be provided a computer at the test Centre.

THE TEST FEES PRESCRIBED FOR DIFFERENT CATEGORIES OF CANDIDATES FOR PGAT-2016

Category	Up to two subjects	Three Subjects	Four Subjects	Five Subjects
GENERAL / OBC	` 600/-	` 900/-	` 1200/-	` 1500/-
SC / ST / PH	` 300/-	` 450/-	` 600/-	` 750/-

NOTE: There is no provision for the withdrawal by a candidate of his / her application/candidature for PGAT-2016 once he/she has submitted the Form or, pursuant to the same, remitted the Test Fees.

1. This information brochure is for the general guidance of the applicants. The Admission Test and admission to the Post Graduate degree courses shall be governed by the relevant provisions of the University of Allahabad Act, 2005 and the First Ordinances made under section 29(2) University of Allahabad Act, 2005.
2. The executive instructions of the Government of India, the regulations/norms issued by the UGC and the order/judgments of the Hon'ble Supreme Court of India and the

- Hon'ble High Court & Judicature at Allahabad shall be strictly followed with regard to reservation of seats in admission to the PG courses mentioned in the brochure.
3. Any subsequent change in the information brochure will be made available on the University Admission Test website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in. The admission to any PG course is suggestive of the fact that the terms and conditions laid down in the brochure are acceptable to the candidate and his/her legal guardian. The existing provisions of the Act, Statutes, Ordinances and Rules framed by the University of Allahabad and those modified from time to time shall be applicable to applicants. Any change in the rules, regulations, fee, special conditions, etc. shall mutatis mutandis apply to the admitted student.
 4. The University of Allahabad reserves all the rights of conduct PGAT-2016 and any decision taken by the University in this regard shall be final and binding on all applicants.
 5. **RAGGING IN THE UNIVERSITY OF ALLAHABAD IS STRICTLY PROHIBITED** as per orders of the Hon'ble Supreme Court of India. The orders of Hon'ble Supreme Court have been communicated by the UGC letter no. F1-1/2006 (CPP-II) dated March 4, 2008 and UGC letter no. F1-8/2006 (CPP-II) dated May 16, 2008. If any incident of ragging is reported it will invite stringent penal action according to law and as per directives of the Hon'ble Supreme Court of India.
 6. This Brochure is being issued only in English.

SECTION-I

GENERAL INFORMATION

- 1.1 University of Allahabad shall conduct Post Graduate Admission Test, hereinafter called PGAT-2016 for admission to various Post-Graduate courses/subjects of the University of Allahabad for the session 2016-17, as specified (along with their numerical codes and number of seats) in the TABLE-2 on inner cover page of this Brochure. Admission will be made according to merit in the PGAT-2016, subject to fulfilling the eligibility requirements mentioned below and availability of seat in the particular course for which the candidate has applied for and appeared in the PGAT-2016.

Admission in M.A. (Arabic) and M.A. (Persian) will be done through merit amongst the eligible candidates. Intake capacity is 75 seats in each subject. The Admission Forms will be available separately from Registrar Office, University of Allahabad.

Admission in M.Tech. (Electronics Engineering) & M.Tech. (Computer Technology) will be done on the basis of merit in GATE and qualifying graduation degree. Intake capacity is 15 seats in each. The Admission forms will be available separately from Registrar Office & at office of Department of Electronics & Communication, University of Allahabad in first week of July-2016.

TABLE-2		
SUBJECT/COURSE		
SUBJECTS	NUMERIC CODE	No. of Seats
(i) For M.A.		
Ancient History	01	154
Economics	02	185
Education	03	31
English Literature/Language	04	262
Hindi	05	308
Medieval & Modern History	06	169
Music (Vocal, Sitar, Tabla)	07	31+23+31
M.Mus (Vocal, Sitar, Tabla)	08	15+15+15
Painting	09	31
Philosophy	10	154
Political Science	11	115
Sanskrit	12	246
Sociology	13	30+4
Urdu	14	137
Arabian	15	75
Persian	16	75
Mass Communication	17	45
Theatre & Film	18	10
Development Studies	19	
(ii) For M.Sc.		
Botany	20	62
Chemistry	21	108
Physics	22	62
Zoology	23	62
Computer Science	24	45
Applied Geology (Earth & Planetary Science)	25	15
Bio-Chemistry	26	22
Agricultural Science (Agricultural Botany/ Agricultural Chemistry & Soil	27	15+17+15

Science/Agricultural Zoology & Entomology)		
Material Science	28	15
Bioinformatics	29	20
Environmental Science	30	19+12
Textile and Apparel Designing	31	10
Rural Technology and Development	32	
(iii) For M.A. & M.Sc. both		
Anthropology	33	15+15
Defence Studies	34	23
Geography	35	115
Mathematics	37	185
Psychology	38	45
Statistics	39	31
(iv) For other programs		
M.Com.	40	269
M.F.A. (Master in Fine Arts)	41	06
M.Tech. in Earth System Sciences (ESS)	42	15
M.P.Ed.	43	40

1.2 The Minimum Eligibility of each course is given in following table:

TABLE-3	
Course Name	Minimum Qualification/Eligibility
M. A. (Ancient History, Medieval & Modern History, Philosophy, Political Science, Education, English Literature /Language, Hindi, Mass Communication, Theatre & Film)	Graduation in all disciplines.
M. A. (Sociology, Sanskrit, Urdu)	B.A. Part III Examination or the B.A. (Honours) Examination with the same subject in which admission is sought as the main subject.
M. A. (Development Studies)	Minimum 50% marks or equivalent grade in High School and Higher Secondary/Intermediate and 55% Marks or equivalent grade in Bachelor of Social Work/B. Com./B.A. in Economics/B. Sc.(Ag.)/Bachelor in Development Studies/Globalization and Development

	Studies/Bachelor in Business Administration/ Management/ Bachelor degree in Rural Development/Bachelor of Planning from a recognized University and minimum 50% score in PGAT.
M. A. /M. Sc. (Mathematics, Defence Studies, Geography)	B.A./B. Sc. Part III Examination or the B.A./B. Sc. (Honours) Examination with the same subject in which admission is sought as the main subject.
M. Sc. (Botany, Zoology, Chemistry, Physics)	B. Sc. Part III Examination or the B. Sc. (Honours) Examination with the same subject in which admission is sought as the main subject.
M. A. (Economics)	B.A. Part III Examination in the same subject in which admission is sought or the B.A. (Honours) Examination with the same subject in which admission is sought as the main subject or candidates must have studied Economics or Mathematics or Statistics as one of the subject up to at least the B.A./B.Sc. Part II level.
M. A./ M. Sc. (Anthropology)	B.A. Part III Examination with two subjects of the Social Science stream History, Political Science, Economics, Sociology, Psychology and Geography or the B.A./B.Sc. (Honours) Examination with Anthropology or a subject of the Social Sciences stream as the main subject, or the B.Sc./ B.Sc. (Honours)
M. A. in Music (Vocal, Sitar, Tabla)	Only female candidates are eligible in this subject. B.A. Part III Examination or the B.A. (Honours) Examination with the same subject in which admission is sought. Candidates who have passed the Sangeet Praveen/Alankar/Nipun Examination recognized by the University as equivalent to the B.A. Examination in Music are also eligible for admission to M.A. in Music.
M. Mus. (Vocal, Sitar, Tabla)	B.Mus. (Three year Course) Examination or the B.A. Part III Examination with Music as one of the subjects, or the B.A. (Honours) Examination with Music as the main subject, or the Sangeet Praveen/Alankar/Nipun (or similar) Examination recognized by the University as equivalent to the B.A. Examination in Music.
M. A. (Painting)	B.A. Part III Examination or the B.A. (Honours) Examination with the same subject in which admission is sought as the main subject. B.F.A. (Four Year Course) or the B.V.A. (Four Year Course) is also eligible.
M.Sc. (Bio- Chemistry)	B.Sc. Part III Examination with Chemistry/ Biochemistry as one subject and Botany/ Physiology/ Zoology/ Biotechnology/ Microbiology/ Industrial Fish and Fisheries as the other subject, or the B.Sc. (Honours) Examination with Chemistry/ Biochemistry/ Botany/ Physiology/ Zoology/ Biotechnology/ Microbiology as the main/subsidiary subject (Chemistry/ Biochemistry

	being preferably the main subject), or the M.B.B.S. Examination are eligible but candidates who have passed the MBBS Examination are exempted from the Admission Test.
M. Sc. (Computer Science)	(i) A candidate who has passed B.Sc. (Three years degree course) with Mathematics and Physics/ Electronics/Computer Science/ Computer Maintenance/ Computer Applications as two of his/her optional subjects up to B.Sc. Part II level, or an equivalent degree from any recognized University/Institution, with an aggregate of at least 50% marks (for all categories) are eligible. (ii) Honours course students with Mathematics as one of the subjects; securing an aggregate of at least 50 % marks (for all categories) are also eligible.
M. Sc. (Applied Geology)	A candidate who has passed B.Sc. Three Year Degree Course) with any two of the following subjects up to B.Sc. Part II level are eligible, (i) Physics (ii) Mathematics (iii) Geology.
M. A. /M. Sc. (Psychology)	B.A. Part III Examination or the B.A. (Honours) Examination with the same subject in which admission is sought or has studied Psychology up to B. A. II. Those candidates who have passed B.Sc. with 60% or above marks as well as candidates from Social Science discipline having Education / Philosophy / Geography / Political Science / Sociology / Social Anthropology / Economics as one of the subject in B.A.-III Examination and have passed with 60% or above marks are also eligible.
M. A. /M. Sc. (Statistics)	B.A./B. Sc. Part III Examination or the B.A./B. Sc. (Honours) Examination with the same subject in which admission is sought. B.A./B.Sc. Part III Examination with Mathematics as a subject, with Statistics as a subject up to at least B.A./B.Sc. (Part II) Examination, or have passed the B.A. (Honours)/B.Sc. (Honours) Examination with Mathematics as the main subject and Statistics as a subsidiary subject.
M.Com.	B.Com./B.Sc./B.Sc. (Honours)
M.Sc. in Agricultural Science (Agricultural Botany/ Agricultural Chemistry & Soil Science/Agricultural Zoology & Entomology)	B.Sc. (Agriculture) Examination (Four-Year Course)
M.F.A. (Master in Fine Arts)	B.F.A degree course with Applied Arts, Sculpture, Graphics, Textile Design and Painting with specialized area from a recognized University or equivalent examinations thereto with 55% marks in aggregate and not of more than 27 years of age by June 30, 2016 shall

	be eligible to apply for admission to the First Semester of M.FA Degree. Candidates who have to their credit BFA in Painting, with Graphic or Textile of Allahabad University will be considered eligible for admission in Graphic/ Textile Design stream.
M.Sc. (Material Science)	Candidate should be B. Sc. with Physics OR Chemistry as one subject in III year. Provided he/she has Mathematics as one subject at least upto II year.
M.Tech. (Earth System Sciences)	<p>i. Master's degree in Physical Sciences/Mathematical Sciences/ Chemical Sciences/ Life Sciences/ Geosciences/ any cognate discipline or a B. Tech./B.E. with marks/CPI not below the 55% marks/ 5.5 (on a 10 point scale) (50% for SC/ST candidates) for appearing in the entrance exam.</p> <p>ii. Candidates working in a research and development organization on permanent basis in the field of Earth System/Cognate disciplines may be sponsored by his/ her employer for direct admission to the M. Tech. programme.</p>
M.Sc. (Bioinformatics)	<p>B.Sc. Examination of this University or any other University recognized by this University with the following combinations with 55% of the marks.</p> <p>(a) Zoology, Botany, Chemistry</p> <p>(b) Zoology, Chemistry, Biochemistry</p> <p>(c) Botany, Chemistry, Biochemistry</p> <p>(d) Mathematics, Physics, Chemistry</p> <p>(e) Mathematics, Physics, Computer Science</p> <p>(f) Mathematics, Physics, Statistics</p> <p>Those who have passed B.Sc. with Molecular Biology, Cell Biology, Microbiology, Biotechnology, Biophysics, Biochemistry and Structural Biology, as one of the subjects can also apply. B.Sc. (Applied Science) students with at least 55% aggregate marks are also eligible to apply.</p>
M.Sc. (Environmental Science)	A candidate who has passed/ appeared in Bachelor's degree (10+2+3) examination with science subject from a recognized University, and has secured not less than 50% marks on the aggregate, is eligible to apply for Admission to this course. Provided that requirement of a minimum of 50% marks is not applicable in case of SC/ST candidates.
M. Sc. (Textile and Apparel Designing)	B.Sc., B.A., B.Sc. (Home Science)
M. Sc. (Rural Technology and Development)	Graduate in Agricultural/Biological Sciences

M. P. Ed.	<p>A Bachelor of Physical Education (B.P.Ed.) or equivalent Or Bachelor of Science (B.Sc.) in Health and Physical Education with at least 50% marks for General and 45% marks for SC/ST/ OBC candidates and those sports persons who have represented India in International Championship OR who have won positions during last three academic sessions in the National/ Intersarsity Championships, being listed in Association of Indian Universities (AIU) and Indian Olympic Association (IOA).</p> <p>Note- The candidate should submit an original medical/fitness certificate through registered Government Medical Officer at the time of admission. An eligible candidate if she is married women shall be eligible to appear in Admission Test for admission to M.P.Ed course. In case, a Women candidate gets pregnant and reaches the stage of expectance during the course, she will have to discontinue her studies for at least one academic year. She can join back a fresh from the beginning of the semester keeping the guidelines pertaining to the maximum duration of the course in mind.</p>
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GENERAL GUIDELINES:

- 1.3 The Candidature of a candidate (and the admission granted on that basis) shall stand cancelled at any stage in case the candidate is found to be ineligible for appearing in the Admission Test.
- 1.4 **Exemption from the Admission Test and Special Consideration:** The provision relating to the categories of candidates who are eligible for exemption from the Admission Test, and the conditions governing such exemption, and the categories of candidates who, having appeared in the Admission Test are entitled to Special Considerations, are specified in the following sub-paragraph 1.5.1 to 1.5.5
- 1.4.1 Foreign nationals shall not be required to appear in the Admission Test, and their cases for admission shall be governed by the provisions of paragraph 2.2. of SECTION II.
- 1.4.2 Non-Resident Indians (NRI), i.e. An Indian national domiciled abroad, or NRI wards, who have graduated from a foreign Univ., shall not be required to appear in the Admission Test, and their cases for admission shall be governed by the provision of paragraph 2.3 and 2.6.1 of SECT. II.
- 1.4.3 Candidate for admission to M.Sc. in Bio-Chemistry who have passed the M.B.B.S. Examination and desirous of seeking admission to M.Sc. in Bio--chemistry shall not be required to appear in the Admission Test, and their cases for admission shall be governed by the provisions of paragraph 2.3 of SECTION II.
- 1.4.4 Serving Officers of the Armed Forces, having the qualifications prescribed in the Ordinances and Regulations, shall be eligible for admission to supernumerary seats in M.Sc. in Defence Studies under rules prescribed in this regard.

- 1.4.4 Candidates working in a research and development organization on permanent basis in the field of Earth System/Cognate disciplines may be sponsored by his/ her employer for direct admission to the M. Tech. (Earth System Sciences) programme.
- 1.4.5 The provisions, on Special Considerations for certain categories, of candidates who are required to appear in the Admission Test, are specified in SECTION II.
- 1.5 Provisional Admission to certain categories of graduates of the University of Allahabad: An examinee who has appeared for the B.A./ B.Sc./ B.Com. (Part III) Examination of the University of Allahabad for the year 2016 and has not been successful in the said examination but is eligible to appear, and is appearing in the Second Examination (Back Paper) of 2016 for the same, shall be eligible to appear in the concerned Admission Test and also to be considered for admission, provided he is not ineligible on any other ground. Such candidate must apply and appear for the Admission Test along with successful examinees. Upon securing an appropriate place in the order of merit of successful candidates such candidate may be granted provisional admission, but such provisional admission shall automatically stand cancelled in case such candidate is not successful in the Second Examination. This facility is not admissible to candidates who have graduated from other Universities.
- 1.6 An examinee who has appeared for the B.A./B.Sc./ B.Com. (Part III) Examination of the University of Allahabad or any other University for the year 2016 and his result is not declared shall be eligible to appear in the concerned Admission test. Such candidates if successful must submit their result/ marksheet at the time of admission in the respective departments, otherwise they will not be considered for admission in Post Graduate course applied for.
- 1.7 RESERVATION CRITERION:**
(PLEASE REFER TO OUR WEBSITE <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in)
- 1.8 Entries made by the candidate in the Form shall be considered final, and no subsequent request for change(s) or modification(s) in the same shall be entertained.
- 1.9 After the completion of admission on the sanctioned seats in each course of study, the son(s) and daughter(s) of regularly appointed and retired teachers / employee of the University, the University Institutes, the constituent Colleges and constituent Institutes, on submission of relevant certificate duly signed by the Registrar in case of University and University Institutes, the Principal in the case of constituent Colleges and the Director in case of constituent Institutes shall be admitted, on the basis of their relative scores against 5 % supernumerary seats (with a minimum of one seat) in each course of study, only in the unit / sub-unit in which such Teachers / Employees are serving or where from they have superannuated.
Provided further if in case seats remain vacant in unit/sub unit, these will be filled by the wards of Employee of other units/sub units.

SECTION-II

ADMISSION RULES AND PROCEDURE

- 2.1 Admissions to the courses of study referred to in SECTION II are governed by the relevant provisions of the University of Allahabad Act 2005 and the first ordinance made under section 29(2) of University of Allahabad Act 2005.

- 2.2 In the case of such candidates as may be exempted from the Admission Test, the Standardized Score, for any subject shall be calculated, for the denominator of 100, on the basis of the marks obtained in such subject in all the Parts of the Three-year Degree Course examination taken together.
- 2.3 The marks obtained will be computed by adding marks obtained in a particular subject (Section B) and the marks obtained in Section A (common to all). Therefore, merit will be prepared on the denominator of 100 for each subject.
- 2.5 It could be understood by an example. Suppose a candidate applies in five subjects based on his eligibility and he secures 60 marks in Section A (common to all). Further, he secures 60, 90, 96, 60 and 72 marks in Subject 1, Subject 2, Subject 3, Subject 4 and Subject 5 respectively. His score will be computed by adding marks obtained in a particular subject and the marks obtained in Section A (common to all). The standardized score of the candidate will be **120** (60+60), **150** (90+60), **156** (96+60), **120** (60+60) and **132**(72+60) in **Subject 1, Subject 2, Subject 3, Subject 4 and Subject 5** respectively.
- 2.6 For the calculation of the Computed Marks of a candidate, a discount will be applied or a weight age will be added to his Standardized. Score in accordance with the following provisions:
- 2.6.1 For admission to any subject of M.A./M.Sc./M.Com. etc., preference shall be given to fresh graduates (i.e. candidates who have passed the qualifying graduate examination for the immediately preceding academic year) over graduates of earlier years. Accumulative discount at the rate of 5% of the Standardized Score shall be applied for every gap year in case of earlier graduates, subject to the maximum discount of 15%.
- 2.6.2 A weightage of 5% of the Standardized Score shall be added to the Standardized Score of a candidate who holds the 'C' certificate of the National Cadet Corps (NCC).
- 2.6.3 Weightage as per Central Government norms shall be given to Kashmiri Migrants. In order to avail of this weightage, the candidate shall have to present a certificate to this effect from an Officer of the Ministry of Human Resource Development not below the rank of Joint Secretary or equivalent.
- 2.7 The following special consideration as provided in 2.7.1, 2.7.2 and 2.7.3, shall be applicable to candidates for admission to any subject of M.A./M.Sc./M.Com. etc. who are Foreign Nationals.
- 2.7.1 Foreign Nationals who have applied through the International Students' Advisor in accordance with the procedure laid down by the Post Graduate Admission Board in this regard, shall not be required to appear in the Admission Test for any subject of M.A./M.Sc./M.Com. etc., but shall be considered for admission on the recommendation of a Committee constituted for the purpose, which shall examine their academic credentials and certificates before making any recommendation.
- 2.7.2 For admission to post-graduate classes under sports-quota, only those candidates will be considered for admissions, who have represented their University at the Inter-University Championship and are currently eligible for participation in Inter-University Championship as per eligibility rules of the Association of Indian Universities (AIU), New Delhi.

The Advisory Committee, Athletic Association, University of Allahabad reserves the right to conduct the field trials and verification of documents of any candidate to determine genuineness of the documents.

The candidate shall be required to produce all the original game/sports certificate in support of his/her claim at the time of admission / interview. The University reserves the right to verify the documents (games / sports certificates etc.) and if found fake, suitable action shall be taken against the candidate.

2 % of the total seats in each subject / course shall be allotted under Sports Quota.

- 2.7.3 A candidate who has a certified disability of not less than 40 % in any limb or in orthopedic structure which, in the opinion of the Medical Board (constituted by the University of Allahabad), amounts to an overall physical handicap of not more than 70 % or is a certified blind, may be admitted to the concerned course / subject, irrespective of his position in the order of merit of the total aggregate score, on the recommendation of the Medical Board, subject to the condition that number of such candidates shall not exceed 3 % of the total seats in the respective course / subject. The privilege shall not be given except claimed by the candidate at the time of application. At the time of admission the candidate shall be required to produce a certificate issued by the Chief Medical Officer of the appropriate District or by the 'Viklang Kendra', Allahabad, which testifies to his disability and bears an attested photograph indicating his / her disability clearly.

Assessment Committee : The Assessment Committee shall consist of the Director of Admissions-2016 (or his representative), the Dean of Students' Welfare (or his representative) and three Medical Doctors [At least two of the medical doctors should be present at any meeting].

- 2.7.4 A candidate who has been granted admission under any of the Special Considerations shall be adjusted, according to his social category, on the unreserved seats, or on the seats reserved for his social category, in the concerned subject in M.A./M.Sc./M.Com. etc.
- 2.8 The subjects in which both the M. A. and M. Sc. is admissible, only those candidates shall be admitted to M.Sc. who have passed the qualifying graduate examination with science subjects.
- 2.9.1 The acceptance of the Application Form of the candidate shall be provisional and shall not give him any guarantee or right of admission.
- 2.9.2 The place of a candidate in the order of merit for any subject in M.A./M.Sc./M.Com. etc. shall be modified in case of an error in the calculation of his Computed Marks, and the admission of a candidate who is excluded from the said order of merit as a result of the rectification of his Computed Marks shall be cancelled.
- 2.9.3 The instructions regarding the enrollment of admitted candidates in the courses of subjects concerned, and other procedures to be under-taken by such candidates, as well as the penalties (including cancellation of admission) for failure to comply with the said instructions, shall be issued by the Post-Graduate Admission Board and shall be binding on the admitted candidates.
- 2.10 If a candidate uses or attempts to use unfair means or indulges in any other kind of improper activity, during the Admission Test, or during the processes precedent or subsequent to the Admission Test engages in any intimidatory, violent or other

activity which disturbs or disrupts any of such processes or keeps a mobile phone during examination he shall be charged and punished for resorting to unfair means/unfair practices. In such cases the procedure and penalty (which may extend from cancellation of his candidature/admission to debarment from admission to the University and the institutions associated with it for one or more years or forever) shall be determined by the Post Graduate Admission Test Board.

- 2.11 The University reserves the right to refuse admission to any candidate without specifying any reason and to make changes in the rules and procedures for admission.
- 2.12 The admission and enrollment of a candidate to any course of study in violation of these Rules, or of the Ordinances/ Regulations/ other provisions of the University shall stand cancelled with retrospective effect if such violation comes to light at any stage.
- 2.13 If a candidate has given false information in the Application Form or has concealed any relevant fact or presented a misleading version of such relevant fact, or enclosed any false or fraudulent document, his claim to be considered for admission shall stand cancelled and he shall be governed by the provisions of paragraph 2.10 of this section.
- 2.14 The following provisions shall be binding on all students of the University.
 - 2.14.1 No student of the University (including any University Institute) is permitted to be admitted/ enrolled simultaneously in more than one degree-granting course of study (including research) in the University or to be admitted/ enrolled in any degree granting course of study in any other Institution (including a University or Constituent College or Constituent Institute of the University) during the pendency of his admission/enrollment in a degree granting course in the University.
 - 2.14.2 The admission/enrollment of a student referred to in paragraph 2.14.1 in the course of study concerned in the University shall automatically stand cancelled with effect from the date of his admission/enrollment in any degree-granting course of study in any other Institution, (including a University or Constituent College or Constituent Institute of the University).
 - 2.14.3 In case a student referred to in paragraph 2.14.1 secures admission/enrollment in a new degree-granting course of study in the University (including a University Institute) during the pendency of his admission/enrollment in another earlier admission/enrollment shall automatically stand cancelled with effect from the date of his later admission/ enrollment.
 - 2.14.4 A student whose admission/ enrollment in a Post-graduate degree granting course of study (including Law) automatically stands cancelled under paragraph 2.14.3, but who at the time of such cancellation had earned eligibility to appear at any part of the examination of the said course of study as an ex-student may, upon passing the Final Examination of the new course of study referred to in paragraph 2.14.3, or upon the termination of his admission/enrollment there in apply to the Examinations Committee for permission to appear in the said part of the Examination as an ex-student. However The Examination Committee shall not grant such permission except on the following conditions:
 - 2.14.4.1 The record establishes that at the time of the said cancellation, he had earned the said eligibility.

- 2.14.4.2 Not more than four consecutive academic sessions have elapsed since the academic session in which he was admitted/ enrolled in the said part as a regular student.
- 2.14.5 No student of the University (including a University Institute) shall appear as a regular and / or an ex-student in the same academic session in any part of the examination of more than one degree-granting course of study.
- 2.14.6 A person who has been on the rolls of the University (including the University and Constituent Colleges and Constituent Institutes of the University) for a period of eight academic sessions or more (excluding the actual but not more than the permissible maximum period of enrollment as a research scholar) shall not be eligible for admission to any course of study.
- 2.14.7 No student of the University (excluding the Institute of Correspondence Courses and Continuing Education), other than one sponsored or permitted by his employer to attend (and fulfill the attendance requirements of) the course of study concerned, is permitted to engage whole-time employment or whole-time self-employment.

NOTE: Before submitting the Form, the candidate should ensure that his candidature is consistent with the Rules specified in paragraph 2.13.1-2.13.7, above.

SECTION-III

MODE OF THE ENTRANCE TEST

The PGAT-2016 will be based on Multiple Choice Types of Questions with One Correct Option. The Entrance Examination will be conducted ONLINE mode only. The candidate will be provided a computer having internet connection on the Test Centre.

- 3.1 The entire entrance will be completed in one shift with a minimum of 01:00 Hour and maximum of 03:00 Hours based on number of subjects student wish to apply and as illustrated in Table 1. The paper will be divided in two sections namely Section A and Section B.
- 3.2 The Section A will be General Aptitude Test and will be common to all the disciplines of PGAT having 40 questions. The question will be based General Awareness, Current Affairs, General Science, Reasoning, Quantitative Ability, General Hindi and General English.
- 3.3 The Section B will be subject Proficiency Test and will be based on the subjects in which candidate wish to take admission. There will be 35 questions for each subject. The syllabus for each subject is given in the brochure and the questions will be asked from this.
- 3.4 The start time of admission test will be based on the number of subjects students wish to apply and is illustrated in Table 1 of page 2.
- 3.5 The candidate will get 03 marks in the common paper and 06 marks in the paper of the subject for each correct answer. There will be minus marking for wrong answers and the candidate will be given -1 mark in the common paper and -2 marks in the paper of the subject for each wrong answer.

- 3.6 For admission in M.A. Music (Vocal and Instrumental- Sitar/ Tabla) and M.P.A. (Music), besides the theory paper of 100 marks a Practical Test will also be conducted by the concerned department. The marks allotted for practical test will be 100 marks. The results shall be prepared and announced on the basis of marks obtained both in the written test and the practical exams. For admission in M.A. Painting also, Practical Test of 100 marks will be conducted by the Department of Visual Arts. The results shall be prepared and announced on the basis of marks obtained both in the written test and the practical exams.
- 3.7 The syllabus of each subject of the PGAT-2016 is given in this booklet.
- 3.8 All the question will be of Multiple Choice Types. There will be four options of a question and the applicant has to submit the correct answer.
- 3.9 The candidates are advised to follow the instructions displayed on the computer screen during the entrance test.
- 3.10 Talking with other candidates in the examination hall, use or attempt to use unfair means, involvement in improper activities, interference in the proper conduct of the examination by the candidate himself or with the help of other persons or flouting the official instruction are totally prohibited. The candidates shall be punished for unfair means/ improper conduct if he transgresses any one of the prohibition.
- 3.11 The computer screen will be automatically locked after the completion of the examination. It will not possible to alter anything after the completion of exam.
- 3.12 The candidate should keep in mind that the Admission Test is to a measure of his knowledge in the subject as well as the speed of answering the questions. The candidate has to compete with other candidates for getting a place in the merit list in every subject of M.A./M.Sc./M.Com. etc. Therefore, it is expected of him/her that he/she would carefully read the instructions given on the computer screen and should give an appropriate answer having understood the questions correctly.
- 3.13 The candidate has to bring his admit card compulsorily that has been issued to him with the signature of the Director PGAT-2016 in order to appear in the admission test. If a candidate fails to bring the admit card he/she shall not be allowed to sit in the Admission Test.
- 3.14 Candidates are strictly prohibited to bring to the Admission Test premises and examination hall any improper/ unauthorized material, books, parts of books, hand written/ typed/printed pages, sketches, Photostat copies, bags and other materials that could render unfair help in answering questions. The use of calculators is strictly prohibited in the Admission Test.
- 3.15 The attendance of the candidate will be taken through thumb impression before the start of examination.
- 3.16 Use or possession of Mobile/Cellular Phones/Electronic gadgets is strictly prohibited. If any candidate is found in possession these during the examination in the campus his examination would automatically be cancelled. He/she may be

SECTION-IV

INFORMATION AND INSTRUCTIONS RELATING TO THE ADMISSION TEST

Admit Card: Admit Cards for all the valid applications received by the university will be processed and enabled on the website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in. The Candidates can download their admit card from the website

IMPORTANT: No Admit Card will be sent by post or distributed from the counters. The Admit Cards downloaded from the website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in are valid and does not require any attestation.

Note: The information provided and the data supplied by the applicant through Registration/Application Form shall be preserved in the University for a period of only 30days from the date of the declaration of the result of Entrance/Admission Test. The records will be disposed off after the said period and no enquiry shall be entertained in this regard by the University after the expiry of the said period. The University shall use this data for various purposes; hence, in no case shall any change be allowed at a later stage. Therefore, all the information must be furnished correctly, completely and clearly by the applicant himself/herself as per the instructions given in the brochure/website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in.

4.1 **ONLINE APPLICATIONS:** Candidates can submit online form for the PGAT-2016 test at the website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in. The website provides all the information required for online form submission.

4.2 **Online Prospectus:** The prospectus for PGAT-2016 can be downloaded from the website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in. and the admission seeking candidates can visit the website and download it. Candidates are advised to read the prospectus carefully before applying.

4.3 **Process of filling up the Online Registration Form:** Candidates willing to submit the online form are first required to open the website <https://www.digialm.com/EForms/html/form4394/index.html> OR Admission-2016 link of www.allduniv.ac.in and submit their online form, by entering all columns correctly.

Table - II

Numeric Codes For Undergraduate	
(B.A./B.Sc./B.Com III) Subjects	
Subject in B.A./B.Sc. III Year	Alphanumeric

	Code
Agricultural Botany/Chemistry/Zoology	AGS
Ancient History	ANC
Anthropology	ANT
Arabian	ARA
B. Music (Vocal, Sitar, Tabla)	BMU
Bio Technology	BTC
Bio-Chemistry	BIO
Botany	BOT
Chemistry	CHE
Commerce	COM
Computer (Computer Science/Computer Application/Computer Maintenance)	CSC
Defense Studies	DEF
Economics	ECO
Education	EDU
English Literature / Language	ENG
Geography	GPH
Geology	GEO
Hindi	HIN
Law	LAW
Mass Communication	MAS
Mathematics	MAT
Media Studies	MED
Medieval Modern History	MED
Music (Vocal, Sitar, Tabla)	MUS
Painting	PAI
Persian	PER
Philosophy	PHI
Physics	PHY
Political Science	POL
Psychology	PSY
Sanskrit	SAN
Sociology	SOC
Statistics	STA
Urdu	URD
Zoology	ZOO
Other Subjects	OTH

For the convenience of the online application Help Desk has been setup

Toll free phone number - 18002667753

Email us at: helpdesk.aumentance@gmail.com

SYLLABUS OF VARIOUS COURSES OF PGAT

INDEX OF SUBJECTS

1. M.A. in Ancient History	23. M. Sc. in Agricultural Science (Ag Bot/Ag Chem And Soil Sc/Ag Zoo & Entomology)
2. M. A. in Development Studies	24. M.Sc. in Applied Geology
3. M. A. in Economics	25. M. Sc. in Biochemistry
4. M. A. in Education	26. M.Sc. in Bioinformatics
5. M. A. in English Lit/Lang	27. M. Sc. in Botany
6. M.A. in Film & Theatre	28. M. Sc. in Chemistry
7. M. A. in Hindi	29. M. Sc. in Computer Science
8. M. A. in Mass Communication	30. M.Sc. in Environmental Sciences
9. M. A. in Medieval And Modern History	31. M. Sc. in Materials Science
10. M.A. in Music	32. M. Sc. in Physics
11. M.A. in Painting	33. M. Sc. in Rural Technology And Development
12. M.A. in Philosophy	34. M.Sc. in Textile And Apparel Designing
13. M.A. in Political Science	35. M. Sc. in Zoology
14. M.A. in Sanskrit	36. M.Com. (Master Of Commerce)
15. M.A. in Sociology	37. M. P. A. (Music)
16. M.A. in Urdu	38. Master of Fine Arts (M.F.A.)
17. M.A/M.Sc. in Anthropology	39. M. Tech. in Earth System Sciences (ESS)
18. M.A/M.Sc. in Defence & Strategic Studies	40. Master of Physical Education (M.P.Ed.)
19. M.A/M.Sc. in Geography	
20. M.A/M.Sc. in Mathematics	
21. M.A/M.Sc. in Psychology	
22. M.A/M.Sc. in Statistics	

Pattern of Entrance Test

The paper will be divided in two sections namely **Section A** and **Section B**.

The **Section A** will be General Aptitude Test and will be common to all the disciplines of PGAT having 40 questions. The question will be based General Awareness, Current Affairs, General Science, reasoning, quantitative ability, General Hindi and General English.

The **Section B** will be **Subject Proficiency Test** and will be based on the subjects in which candidate wish to take admission. There will be **35 questions for each subject**. The syllabus for each subject is given below and the questions will be asked from this.

The candidate will get 03 marks in the common paper and 06 marks in the paper of the subject for each correct answer. There will be minus marking for wrong answers and the candidate will be given -1 mark in the common paper and -2 marks in the paper of the subject for each wrong answer.

1. ANCIENT HISTORY

1. Political History of India:

Sources of Ancient Indian history, Early State Information: Mahajanapads and Republics, Rises of Magadh; Persian invasion, Alexander's invasion; Rise and Fall of Maurya Empire; Chandragupta, Asoka; Sunga, Satavahana, Indo-Greeks, Sakas, Kushanas, Western Kshatrapas; Gupta, Vakatakas and Vardhanas; Regional States during Gupta Era: The Kadambas, Pallavas, Chalukyas, Cholas, Hoysalals and Pandayas; Gurjar-Pratihara, Pala and Rastrakuta.

2. Indian Culture:

Foundations of Indian Culture, Main Feature of Ancient Indian society, Ancient Indian education system, Positions of women, Ancient Indian Religions: Vaisnavism, Saivism, Jainism and Buddhism; Sankaracharya, Bhakti Movement, interaction of Islam and Indian society; Social and Religious Movement in Nineteenth Century India.

3. Art and Archaeology:

Definition of Archaeology, Paleolithic Cultures: Salient features, Belan Valley, Son Valley; Mesolithic and Neolithic Culture: Vindhya and Ganga Plains. Indus valley Civilization: Origin, Extent and decline, Art and Architecture; Chalcolithic cultures: Kayatha, Ahar and Jorwe culture; Copper Hoards and antiquity of irons; Pottery traditions: OCP, PGW, NBPW; Indo-Roman Contacts; Maurya, Sunga, Kushan and Gupta Art: Essential features; Temple Architecture; Art and architecture under Chalukyas, Chandel, Pallava, Rastrakutas and Chola.

4. Ancient Civilization:

Egyptian Civilization: Political developments under Pharaohs; Art, Religion and Intellectual Achievements. Development of civilization in Mesopotamia through ages: Sumerian, Babylonian, Assyrian, and Chaldean civilizations. Hellenic and Hellenistic Civilizations, Roman Civilizations; Julius Caesar and Augustus; Contribution of Zarathustra and Confucius.

2. Master in Development Studies

The programme has a provision of the lateral entry after three years. Those students of the Centre's Integrated Programme who have obtained 6.0 CGPA in case of General and OBC category and 5.5 CGPA in case of SC and ST shall be automatically enrolled in the Master in Development Studies Programme. Remaining vacant seats shall be filled-in through the AU PGAT 2016.

Eligibility criteria for the remaining seats have been determined as follows: Minimum 50% marks or equivalent grade in High School and Higher Secondary/Intermediate and 55% or equivalent grade in Bachelor of Social Work/ B.Com./ B.A. in Economics/ B.Sc.(Ag.)/ Bachelor in Development Studies/Globalization and Development Studies/Bachelor in Business Administration/Management/Bachelor degree in Rural Development/Bachelor of Planning from a recognized University and minimum 50% score in PGAT.

Syllabus

- A. Theories & perspective of development and globalization
- B. International politics and relations
- C. Global economic order
- D. Corporate sector and Globalization
- E. Globalization and tribal & rural societies
- F. Science and Technology in Global era
- G. Mass Media & Information & Communication Technology (ICT), Sustainable development and Environmental issues
- H. Basic Computer Skills
- I. Idioms & phrases
- J. Foreign words

3. ECONOMICS

Micro Economics:

Law of Demand and Supply, Market Demand, A brief introduction of Elasticity of Demand. Theory of Consumer's Behaviour. Consumer's Equilibrium, Indifference Curve Analysis. Price Effect, Income Effect and Substitution Effect (Hicks & Slutsky Methods). An Elementary Treatment of Revealed Preference Theory, Consumer's Surplus.

Production Function: An Elementary Treatment, Laws of Variable Proportions, Returns to Scale, Substitution in Production, Producer's Equilibrium,

Nature of Market, Revenue Function, Revenue Curves, Price Determination under Perfect Competition, Monopoly, Discriminating Monopoly, Imperfect and Monopolistic Competition-Elementary Treatment.

Marginal Productivity Theory of Distribution, Rent: Ricardian & Opportunity Cost Theories, Quasi Rent. Wage: Labour Supply and Demand Theory of Wages, The Marginal Productivity Theory, Interest Theories, Profit.

Indian Economy:

Nature and Symptoms of Under-development, Indices of Development such as HDI, etc. Main Features of Indian Economy, The Energy and Power Sector in India and its Challenges, India's Foreign Trade: Composition and Direction, Service sector in India and its Performance.

The Agricultural Sector, Salient Features of Indian Agriculture. Changing Agrarian Structure. Mechanisation of Agriculture, Rural Credit Structure in India, role of Commercial Banks, Rural Banks, Cooperative Banks, Land Development Banks, Primary Agricultural credit Societies, NABARD, in Rural Credit, Rural Un-employment in India.

Industrial Sector, Objectives of Industrial Development, Categorisation of Industries, Growth and Expansion of Public Sector Enterprises, Development and Expansion of Private Industry, Role and Importance of Cottage and Small Scale Industry. Problems of Industrial Labour in India.

Techniques of Economic Analysis:

Approach to Economic Analysis: Micro-Economics and Macro-Economics, Illustrations of Micro and Macro Problems. Nature of Static and Dynamic analysis. Equilibrium Concepts and Types. Functional Relationships in Economics: Demand, Supply, Cost, Revenue, Savings, Income and Investment etc., Illustration from Micro and Macro Economics, Equations: Solution of Linear, Simultaneous and Quadratic Equations, Analysis of Market Equilibrium Algebraic and Graphical Solutions. Curves and straight Lines, Rate of change and slope –Economic illustrations, use of Linear and Non-linear functions in economics – market demand, cost and revenue curves etc. nature of parabolic curves. Cost and Revenue curves and related Economics Illustrations

Statistics: Nature, functions, importance; collection of data classification and tabulation; Diagrammatic and graphical representation of data: Bar, Pie, Histogram, Ogive etc. Measures of central tendency. Arithmetic Mean, Weighted Mean, Harmonic Mean Geometric Mean, Median, Mode etc., their relative Merits.

Measures of Dispersion-Range, Quartile/Percentile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation, Lorenz Curve, Measures of skewness and Kurtosis.

Correlation: Linear Rank, Index Numbers: Nature, Construction, Limitation, Importance, Construction of Index Numbers: Simple, Weighted and Price Relative Methods.

Macro Economics :

National Income: its Measurement and Limitations, Nature of National Income Accounts in Closed and Open Economy, Uses of National Income Analysis, Social Accounting, Environmental Accounting.

Theory of Employment, Say's Law of Market, Classical Theory, Keynesian Critique of Classical Theory, Simple Keynesian Theory of Employment and Income Determination, Investment function. Keynesian Consumption Function, Concept of Investment Multiplier.

Nature and Causes of Trade Cycles, Theories of Trade Cycle: Hawtrey, Hayek, Schumpeter. Inflation: types, causes and impact, Inflation Employment Tradeoff: Phillips Curve, Macro Theory of Distribution: Ricardo, Marx and Kaldor.

Theories of Growth: Harrod and Domar Growth Models. Population and Development, Model of H. Leibenstein, the Low Level Equilibrium Trap: Nelson;

Development and Planning :

Development: Meaning, Measurements and Indicators of Development. PQLI, HDI, GDI, GII, Causes of Under-development. Circular Causation: Myrdal and Nurkse, Over-Population. Technological Backwardness, Environment and Development.

Selected Theoretical Prescriptions of Development: Rostow's Stages of Growth, Problem of Choice of Technique. Models of Development: Balanced vs Unbalanced Growth, Hirschman, Rosenstein Rodan, Two Gap Theory.

Measures for Development, Augmentation of Savings, Investment Strategy, Capital Accumulation, Improvement in Technology and Industrialisation, Surplus Labour as a Source of Capital Formation-Lewis and Nurkse, Choice of Technique, Human Capital and Economic Development. Sustainable Development: Meaning and historical Evolution.

Money and Public Finance:

The Quantity Theory of Money: Fisher and Cambridge Approaches. Keynes' Fundamental Equations. An Elementary Treatment of Saving and Investment Approach. Concepts and Components of Money Supply.

Theory of Commercial Banking, Theory of Credit Creation, Credit Multiplier. Theory of Central Banking, Types of Banks- Development, Cooperative, Universal etc. Techniques of Credit Control, The Reserve Bank of India, Control of Commercial Banks & Control of Credit.

Public Finance and Private Finance: Concepts and Problems, Public and Private Goods, Principle of Maximum Social Advantage. Public Expenditure: Nature and Effect. Federal

Finance concept, Federal Finance in India, Division of Resources, Finance Commission: Role and objectives.

Taxation: Progressive, Regressive & Proportionate. Direct and Indirect Taxes. Principle of Taxation: Ability to Pay. Least Aggregate Sacrifice, Incidence, Impact and Shifting of Taxation in Perfect Competition and Monopoly.

Economic Analysis:

The Theory of Imperfect Competition, Duopoly, Oligopoly, Collusive and Non-collusive Oligopoly, Cournot, Bertrand, Edgeworth, Stackleberg, Chamberlin's Small Group Oligopoly Model, The Kindred Demand Curve, Cartels: Joint Profit Maximization and Market Sharing Cartels.

Monopolistic Competition Models, The Criticism of Marginalist Approach to the Theory of the Firm, Welfare Economics: The Criteria of Social Welfare, The National Income Criteria, The Hedonist; The Cardinal Approach to Social Welfare, Pareto Optimality, Kaldor-Hicks Compensation Principle; Bergson's Social Welfare Function.

International Economics:

Basis of International Trade. Theories of International Trade: Adam Smith, Ricardo. J.S. Mill's Theory of Reciprocal Demand. Marshall- Edgeworth Offer Curve, Haberler's Opportunity Cost Theory; Heckscher's Critique of Classical Theory.

Terms of Trade and Gains from Trade: Kinds of Terms of Trade, Factors Influencing Terms of Trade, Prebisch Singer Model, Relation between Terms of Trade and Gains from Trade. Immiserizing Growth Theory. Balance of Payments: Meaning, Definition, and Illustration: Disequilibrium in BOP

Exchange Rates: Purchasing Power Parity Theory, Balance of Payments Theory, Fixed and Flexible Exchange Rates, Spot and Forward. Free Trade and Protection, Exchange Control Infant Industry Argument, Instruments of protection: Tariff, Quota and Devaluation, Exchange Control. Measures for correction in BOP.

India's Economic Policy :

General Objectives of Economic Policy in Developing Countries.

Unemployment and Poverty: A General Overview & Policies

Population Policy: National Population Policy and Population Policy of Uttar Pradesh.

Environmental Problems & National Environment Policy

Industrial Policy: Role and Objectives

Industrial Policy of India

Private and Public Sector

Competition Act

Micro, Small and Medium Enterprises Policies

Energy Sector: Problems and Energy Policy

Agricultural Policy in India: Objectives and Overview
Community Development Project and Panchayati Raj
Rural Development Programme
Agricultural Price Policy
Food Policy and The Public Distribution System

4. EDUCATION

1. **Principles of Education:** Meaning and scope of education; Aims of education; Approaches to education; Agencies of education; Curriculum; Educational Planning.
2. **Problems of Indian education:** Primary education, secondary education, higher education, adult education; National Policy on Education; Language Controversy.
3. **Educational Philosophy & Sociology:** Nature, scope and need of philosophy of education; Naturalism, Idealism, Pragmatism, Realism, Existentialism; Educational Sociology; Culture and education; Social Satisfaction; Social Mobility' Social Changes; Futurology.
4. **Educational Psychology:** Nature, scope and methods and educational psychology; Growth and development; Individual difference; Intelligence;' Creativity; Personality; Learning; transfer of learning; Motivation; Group dynamics
5. Measurement, evaluation and action research in education, Measure of Central Tendency and Standard Deviation.
6. **Indian and Western Education:** Sir Syed Ahmed Khan, Madan Mohan Malviya, Tagore, Vivekanand, mahatama Gandhi, Radhakirishnana, Plato, Rousseau, Dewey, Russel.
7. Environmental education; Educational technology; Distance education; Value education; Peace education; Human rights education; Population education.

5. ENGLISH LITERATURE/LANGUAGE

Note : Candidates can attempt either English Literature or English Language question paper.

Multiple choice questions based on the following in the ratio of 25:25:50 from the syllabi of B.A. Part I, II & III respectively.

BA Part I (English Literature)

Paper I: Poetry

1. William Shakespeare: (a) Sonnet 29: "When in disgrace with fortune and men's eyes"
(b) Sonnet 138 "When my love swears that she is made of truth"
2. John Donne: "Canonization"
3. John Milton: *Paradise Lost* (Satan's Speech)
4. John Dryden: *Absalom and Achitophel*, Lines 150-197. (False Achitophel).
5. Alexander Pope: "Essay on Man" (Lines 1-18)
6. William Blake: The Nurse's Song
7. William Wordsworth: (a) "Tintern Abbey", (b) "The World is too much with us"
8. Percy B. Shelley: (a) "Ode to the West Wind" (b) "A Lament"
9. John Keats: (a) "Ode to a Nightingale", (b) "La Belle dame sans merci"
10. Sarojini Naidu: The Flute Player of Brindaban
11. Toru Dutt: "Baughmaree"
12. Rabindra Nath Tagore: From *Gitanjali* : (a) 11th, Leave the Chanting, (b) 12th Fruit Gathering.
13. Nissim Ezekiel: "Background", "Casually"
14. Frost: "Stopping by the Woods"
15. Walt Whitman: "O Captain, My Captain!"

Paper II: Drama

George Bernard Shaw: *Arms and the Man*.

Mahesh Dattani: *Where There's a Will*

Paper III: Prose and Fiction

An Anthology of English Prose edited by the Dept. of English & MEL, University of Allahabad, Macmillan

The following **essays** are prescribed:

1. E. V. Lucas: "Tight Corners"
2. A. G. Gardiner: "In Defence of Ignorance"
3. Robert Lynd: "Student"
4. G. K. Chesterton: "On the Pleasure of No Longer Being Very Young"
5. George Orwell: "Reflections on Gandhi"
6. Aldous Huxley: "Pleasures"
7. J. B. Priestly: "On Doing Nothing"
8. Bertrand Russell: "The Road to Happiness"

9. Richard Wright: "Twelve Million Black Voices"
 10. A. C. Benison: "The Art of the Essayist"
- The following **novel** is prescribed for detailed study:
George Orwell: *Animal Farm*

BA Part II (English Literature)

Paper I: Poetry

1. Alfred Lord Tennyson: (a) "Break, Break, Break" ; (b) " Ulysses"
2. Robert Browning: (a) " My Last Duchess" ; (b) "Prospice"
3. Matthew Arnold: (a) "Dover Beach"; (b) " Memorial Verses"
4. Thomas Hardy: (a) " The Darkling Thrush"; (b " The Voice"
5. Gerard Manley Hopkins: (a) "Pied Beauty" (b) "Thou Art Indeed Just Lord . . ."
6. W. B. Yeats: (a) "The Second Coming" ; (b) " Prayer for My Daughter"
7. T. S. Eliot: "Love Song of Alfred J. Prufrock"
8. W. H. Auden: "In Memory of W. B. Yeats"
9. Adil Jussawala: "Sea Breeze, Bombay"
10. Kamla Das: "An Introduction"
11. Keki N. Daruwalla: "Ghagra in Spate"

Paper II: Drama

The following **plays** are prescribed:

William Shakespeare: *Macbeth*

William Shakespeare: *The Merchant of Venice*

Paper III: Prose

The following prose **essays** are prescribed for detailed study:

1. Francis Bacon: "Of Studies"
2. Proverbs, Chapter XV. (From The Bible)
3. Addison "Will Wimble"
4. Steele "The Spectator Club"
5. Goldsmith: "Beau Tibbs"
6. Johnson, "Letter to Chesterfield"
7. Lamb, "Dream Children"
8. Charlotte Perkins Gilman, "The Yellow Wallpaper"
9. Anita Desai: "A Farewell Party"
10. James Thurber "The Secret Life of Waltermity"
11. Katherine Mansfield "The Fly"

The following **novel** is prescribed :

R. K. Narayan: *The Guide*:

BA Part III (English Literature)

Paper I: Fiction

The following **novels** are prescribed:

1. Jane Austen: *Pride and Prejudice*
2. Charles Dickens: *David Copperfield*
3. E. M. Forster: *A Passage to India*
4. Salman Rushdie: *Haroun and the Sea of Stories*

Paper II: Drama

The following **plays** are prescribed:

1. T. S. Eliot: *Murder in the Cathedral*
2. Eugene O'Neill: *Desire Under the Elms*
3. Harold Pinter: *The Birthday Party*
4. Girish Karnad: *Hayavadana*

Paper III: Poetry and Practical Criticism

The following **poems** are prescribed :

1. Derek Walcott (West Indian): "A Far Cry From Africa"
2. Wole Soyinka (Nigerian): "Dragonfly at My Window Pane"
3. Amiri Baraka (African-American): "Wise I"
4. Judith Wright (Australian): "Bora Ring"
5. A. D. Hope (Australia): "Australia"
6. Michael Ondaatje (Sri Lanka/Canada): "Letters and Other Worlds"
7. Eunice de Souza (India): "Autobiographical"
8. Agha Shahid Ali (India): "Postcard from Kashmir" and "A Lost Memory of Delhi"
9. A. K. Ramanujan (India) "Love Poem for a Wife I"
10. Arun Kolatkar (India) "The Priest's Son" and "The Butterfly"
11. Sylvia Plath (America): "Mirror" and "Daddy"
12. Gwendolyn Brooks (America): "The Lovers of the Poor"
13. Emily Dickinson (America): "After Great Pain, A Former Feeling Comes"
14. Sherman Alexie (America): "On the Amtrak from Boston to New York City"
15. Lorna Dee Cervantes (America): "Refugee Ship"

Practical Criticism.

There will be multiple choice questions (MCQs) based on unseen passages of prose and

B.A. Part III: English Literature

6. M.A. THEATRE & FILM

No prescribed syllabus. Questions are based on general awareness about film and theatre.

7. HINDI

Hindi Sahitya ka Itihas, Bhasha Vigyan,
Bhartiya Kavyashastra, Pashchatya Kavyashastra, Kavyabhasha, Aalochana aur Shahitya
Chintan ki Nai Dishayen.

8. MASS COMMUNICATION

1. General awareness including constitutional matters, current affairs, public debates on matter of polity, economy, science & technology. Awareness of International Development and their impact of Indian society.
2. Exposure to issue and debates covered by print media, television news channels and radio. General understanding of Indian Art, Culture, National movements and Cinema.

9. MEDIEVAL AND MODERN HISTORY

SECTION A : HISTORY OF THE MODERN WORLD (1453-1945) : A survey of the Political, Social Economic and Cultural history of the Modern World,
SECTION B : HISTORY OF MEDIEVAL INDIA (1206-1740)
SECTION C : HISTORY OF THE MODERN INDIA (1740-1950)

10. M. A. (MUSIC)**(VOCAL)****1. Detailed study of the following Ragas:**

Puriya, Marwa, Jai-Jaiwanti, Suddha Kalyan, Deshkar, Kamod, Chayanat, Todi, Multani, Miyan-Malhar, Gound-Malhar, Adana, Darbari Kanhada, Basant, Paraj, Puriya Dhanashri, Shri, Hindol, Suddha Sarang, Madhuwanti.

2. Taal

Rupak, Teerva, Dadra, Kaharwa, Trital, Jhaptal Ektal, Dharmar, Ada Chartal, Pancham Sawari, Gaj jhampa, Chartala, Sooltal, Deepchandi, Jhoompa, Tilwada.

3. Details introduction of all the Ragas and Taalas mentioned above.
4. Comparative study of the Samprakit Ragas and Taalas.
5. Study of Alpatva and Bahutva, Tirobhav and their use and importance.
6. Laya and layakari- Different types of Layakaries, Dugun, Tigun Chaugun and Ada.
7. Different styles of Gayaki - Dhruvapad, Dhamar, Tappa, Thumari and Chaiti.
8. Brief study of different Gharanas of Vocal Music.
9. Life sketch and contribution of Eminent Musicians and Vocalist.
10. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swear); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
11. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Sothern Talapaddhaties.
12. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ustad Vilayat Khan, Ameer Khusroo, Pt. Ravi Shankar, Pt. Ram Sahai, Ahmad Jan Thirakwa, Nana Sahib Pansse.
13. History of Music and classification of ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods. Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kind of Gamaka. Brief knowledge of Different Gharanas.

(INSTRUMENTAL SITAR)

1. **Detailed study of the following Ragas:**
Puriya, Marwa, Jai-Jaiwanti, Suddha Kalyan, Deshkar, Kamod, Chayanat, Todi, Multani, Miyan-Malhar, Gound-Malhar, Adana, Darbari Kanhada, Basant, Paraj, Puriya Dhanashri, Shri, Hindol, Suddha Sarang, Madhuwanti.
2. **Taalas**
Rupak, Teerva, Dadra, Kaharwa, Trital, Jhaptal Ektal, Dharmar, Ada Chartal, Pancham Sawari, Gaj jhampa, Chartala, Sooltal, Deepchandi, Jhoompa, Tilwada.
3. Details introduction of all the Ragas and Taalas mentioned above.
4. Comparative study of the Samprakit Ragas and Taalas.
5. Study of Alpatva and Bahutva, Tirobhav-Avirbhav and their use and importance.
6. Laya and layakari- Different types of Layakaries, Dugun, Tigun Chaugun and Ada.
7. Different styles and Baj - Maseetkhani, Razakhani, Firozkhani etc.
8. Brief study of different Gharanas of Sitar.
9. Life sketch and contribution of Eminent Musicians and Instrumentalists.
10. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swear); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
11. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Sothern Talapaddhaties.
12. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ustad Vilayat Khan, Ameer Khusroo, Pt. Ravi Shankar, Pt. Nikhil Banerjee.
13. History of Music and classification of Ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods. Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kind of Gamaka. Brief knowledge of Different Gharanas.

(INSTRUMENTAL TABLA)

1. **Detailed study of the following Taalas:** Trital, Jhaptal, Rupak, Teevra, Sooltal, Ektal, Chartal Basant, Pancham Swari, Gaj Jhampa, Dhamar, Laxmi, Rudra, Shikhar, Brahma, Kurnbha, ganesh, Matt, Dadra and Kaharwa, Jat Taal, Deepchandi Taal.

2. Kayada, Palta, Peshkar, Relu, 'Laggi-Ladi', Paran, different types of Chakkardar, Tihai, and paran, Tripalli, Choupalli, Nauhakka, Jhoolna ke Bol, Gat- Farad, Mukhda, Mohra.
3. Ten Varnas of Tabla.
4. Study of Sam Matrik and Samprakrit Taalas.
5. Different Gharanas of Tabla playing with their style and Baj.
6. Life sketch and contribution of Eminent Musicians and Musicologist.
7. Laya-Layakari, different kinds of Layakaries, Dugun, Tigun, Chaugun, Aad, Kuada, Biyad etc.
8. Life sketch and style of playing leading Tabla Artists, Padam Bhushan Pt. Samta Prasad, Padam Vibhushan Pt. Kishan Maharaj .
9. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swar); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
10. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Southern Talapaddhaties.
11. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ameer Khusroo, Pt. Ram Sahai, Ahmad Jan Thirakwa, Nana Sahib Panse.
12. History of Music and classification of Ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods. Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kinds of Yati. Brief knowledge of Different Gharanas.
13. Gharana of Tabla
 - Tabla Aur Pakhawaj Ka Tulnatmak Adhyayan.
 - Classification of Instruments.
 - Taal Ka Manovaijnyanik Prabhav.

11. M.A. (PAINTING)

Theory: (conducted by the University)

Syllabus:

Aesthetics & Art Appreciation (Indian and Western)

History of Indian Art (Pre-history to Modern)

History of Western Art (Pre-history to Modern)

Folk, Tribal and current trends in Art Scenario.

Practical: (conducted by the Department)

For admission in M.A. in Painting candidate has to appear in Practical Drawing Test of 100 marks. Time: 120 minutes of 100 marks in any medium.

(The candidates are advised to contact the Head, Visual Arts for Practical Test)

12. PHILOSOPHY

1. Ethics 2. Indian Philosophy
3. Western Philosophy 4. Logic
5. Theory of Knowledge 6. Philosophy of Religion 7. Socio-Political Philosophy

13. POLITICAL SCIENCE

POL. THEORY:

Definition, Nature and Scope of Pol. Science, Nomenclature relation with other social sciences, Different approaches idealistic, Individualistic, Liberal, Social Welfare, Contemporary Libertarian Concept, Gandhian Concept and Marxian view of state, Sovereignty, Nation and Nationalism , Challenges before nation-state, Globalisation and emergence of civil society, Concept of liberty, equality, law, rights, justice, punishment and citizenship, evolutionary socialism, Marxism, Fascism, Democracy and Communitarianism.

INDIAN GOVERNMENT AND POLITICS:

The constituent assembly, Preamble, Main features of Indian Constitution, Procedure to amend the Constitution, Federalism, Fundamental Rights, Directive Principles of State Policy, Fundamental Duties.

President, Prime Minister and Council of Ministers, Parliament, Judiciary, Judicial, Review and Activism, Governor, Chief Minister, Council of Ministers, State Legislature, Panchayati Raj and Urban Local Bodies, Party System in India.

WESTERN POLITICAL THOUGHT:

Features of Ancient Greek Political Thought, Plato, Aristotle, Aquinas, Machiavelli, Bodin, Hobbes, Locke and Rousseau, Bentham, Mill, Green, Hegel, Marx, Lenin, Mao.

COMPARATIVE GOVERNMENT AND POLITICS:

Meaning, approaches, nature and scope of comparative government and politics. Constitutionalism, Rule of Law, Legislature Executive and Judiciary, Organisation of Government- Unitary, Federal, Parliamentary and Presidential Democracy, Democracy Dictatorship, Local Self Government, Political Culture and Socialization, Political Parties, Pressure Groups, Electoral Process, Public opinion and Bureaucracy.

INDIAN POLITICAL THINKERS:

Features of Ancient Indian Political Thought, Political Ideas of Manu, Kautilya, Features of Jain and Buddhist Political Thought, Political Ideas of Mahabharat, Indian Renaissance and Political Ideas of Raja Ram Mohan Roy, Dayanand and Vivekanand, Political Ideas of Tilak, Arvindo Ghosh, M.N. Roy and Jai Prakash, Jawahar Lal Nehru, Mahatama Gandhi and B.R. Ambedkar.

INTERNATIONAL RELATIONS:

The study of International Relations, Role of State and Non-State Actors, Cold War, Feature of present world order, Globalisation and impact on world politics, Problem of Third World Security, NAM, North-South Dialogues, ASEAN and SAARC, International Terrorism, Nuclear Proliferation, Disarmament and Arms Control, Collective Security, Indian Foreign Policy, Indo-US Relations.

INDIAN ADMINISTRATION:

Meaning, scope and significance of Public Administration, NPA and NPM Organisation, Ecology of Indian Administration, Structure of organisation (Central and Cabinet Secretariats, P.M.O.), Centre-State Relations, Public sector undertakings, Parliamentary Control over financial Administration, Growth of civil services in India, D.M. and O&M, 73rd -74th Constitutional amendment Acts, welfare administration for- S.C., S.T. and Women, Generalist- Specialist, Controversy, Problem of corruption, Lokpal and Lok Ayukta, Minister- Civil Servant relationship.

Note: For details please see the syllabus of U.G. Pol. Science University of Allahabad.

14. SANSKRIT**Group A**

- (i) AbhijnanShakuntalam-upto VAct
- (ii) Poorva Megh- Upto 30 slokas
- (iii) Kiratarjuniyam-Prathamah sargah
- (iv) Kadambari Kathapuram Prabhatvarna Paryanta
- (v) Following Suktas of Rigvedas:
 - (a) Vishvedeva Siktam,
 - (b) Vishun Suktam
 - (c) Indra Suktam
 - (d) Prajapati Suktam
 - (e) Purush Suktum
 - (f) Vak suktam
 - (g) Shivsankalpa Suktum(From Shukla Yajurveda)
- (vi) Sangya & Sandhi prakaranas of Laghu Siddhanta kaumudi
- (vii) Niti Shatak- Upto 30 Slokas

Group B

- (i) Sahitya Darpan (First & Second Parichcheda Only)
- (ii) Uttar Ram Charitam- Upto NIRD Act
- (iii) tarkSangraha
- (iv) Sri Mad Bhagwad Geeta (Second, Third & Nineth Chapter Only)
- (v) Karak Prakaran of Madhya Siddhant Kaumudi (Practical Knowledge Only)

15. SOCIOLOGY

Emergence of Sociology and Pioneer Thinkers: Emergence of Sociology (Definition, Nature, Scope and Subject Matter of Sociology) and its Relationship with other Social Sciences; Works of Comte (Positivism), Spencer (Social Darwinism), Durkheim (Social Facts, Solidarity, and Suicide), Weber (Social Action, Authority, Idea, Type, Protestant Ethics and the Spirit of Capitalism), Marx (Materialistic Conception of History, Class Struggle, Alienation), Pareto (Circulation of Elites), Parsons (Social Action and AGIL) and Merton (Functional Analysis).

Basic Concept: Society, community, Culture, Civilization; Socialization – Agencies and Theories; Social Structure and Function; Institution and Association; Social Group and Its Types; Customs, Norms, Values, Sanctions and Laws; Status, Role and its Types.

Sociological Perspectives: Evolutionary, Structural, Functional, Conflict and Interactional.

Institutions: Kinship and Its Types, Forms and Usages; Family and Its type; Marriage and Its Types; Economy and Its Forms-Urban, Rural and Tribal Economy (Primitive communism, Concept of Property and Ceremonial Exchange among Tribes- Potlatch and Kula Ring, Division of labour, Jajmani Relations); Religion – Theories and Forms of Religion, Magic, and Religion and Science; Political – Elites and Leaders, Political Parties, Caste Panchayat and Panchayati Raj Institutions (PRIs); Education as a Social System.

Socio-Cultural Process and Changes: Cultural lag, Assimilation, Acculturation, Cooperation, Competition, Conflict; Universalization and Parochialization, Sanskritization, Westernization, Modernization and Secularization; Meaning of Social Changes and Its Types (progress, Development, Growth, Evolution and Revolution); Theories and Factors of (Demographic, Biological, Economic, Technological and Cultural) of Social Change; Approaches to Development.

Stratification, Mobility and Social Movement: Meaning of Stratification – Its Forms and Theories (Functional, Conflict, Weberian); Social Mobility and Its Type; Meaning and Theories of Caste, Caste as a Unit and caste as a System, Dominant Caste, Changing Dimension of Caste and Class; Meaning of Social Movement and its types.

Social Research: Objectivity and Subjectivity in Social Sciences, Positivism and Empiricism in Sociology, Sociological, Explanations, Types of research, Steps in Social Research; Research Designs (Exploratory, Descriptive and experimental); Methodology, Method & Techniques: Ethnography, Observation, Case study, Content Analysis, Survey, Sampling, Questionnaire, Schedule and Interview; Data Analysis – Measures of central tendency, Correlation and Chi-Square.

Understanding Indian Society and Various Social Issues: Eminent, Indian Thinkers on Indian Social System; Unity in Diversity – Language, Religion, Caste and Cultural Pattern; Varnasharama System, Purushartha, Joti and Varma; Issues on Villages, Towns and Cities; tribes, Dalits, Women and Minorities, Racial and Physical Distribution of Tribes in India; tribe-Caste Continuum; Rural-Urban Continuum; Social Problems and Their remedies – Religious, Ethnic and Regional, OBC, SC, ST, Women and Minorities, Dowry, Domestic Violence, Intra and Inter-Generational Relations, Communalism, Terrorism and Corruption; Social Disorganization – crime and Delinquency, Theories of Crime, White Collar Crime, Theories and Types of Punishment; Nation- building and Ethnic Identities, Development induced Displacement and Environmental Issues.

16. URDU

Syllabus of Urdu subject (Graduation level course) of University of Allahabad

17. ANTHROPOLOGY

Section I

GENERAL ANTHROPOLOGY

Meaning and Scope of Anthropology: Branch of Anthropology, a) Social-Culture Anthropology, b) Physical/Biological Anthropology, c) Archaeological Anthropology, d) Linguistic Anthropology.

Relations of Anthropology with other disciplines: Life Sciences, Earth Sciences, Medical Sciences; Social Sciences and Humanities.

The Basic terms and Concepts in Anthropology: Culture, Society, Association, Institution, Culture change, Socialization, Mutation, Paleoanthropology, Geological time Scale, Glaciations and Pluviations, Pleistocene.

SOCIAL-CULTURE ANTHROPOLOGY

Definition and types of Marriage, Family, Kinship:

Economic and Political Anthropology: Meaning and Scope.

Religion and Magic: Definition and Meaning.

The Basic of Indian Social System

Indian Village

Major Concepts in Indian Anthropology: Dominant Caste, Sanskritisation, Westernization, Sacred Complex, Nature-Man-Spirit complex, Little and Great Tradition, tribe-caste continuum.

Special Constitutional Provisions, Problems and welfare measures related to tribes.

Theories of Social-Cultural anthropology: Evolutionism, Diffusionism, Functionalism, Culture and Personality, **Contributions of the following Anthropologists:** a) Robert Redfield, b) V. Durkheim, c) L.P. Vidhyarthi, d) M.N. Srinivas.

Fieldwork Tradition in Anthropology

Major tools of Research: Observation, Interview, Case Study, Life History, Survey Research, Schedule and Questionnaire, geological Method.

PHYSICAL ANTHROPOLOGY

Theory of Organic Evolution: Lamarckism, Neo-Lamarckism, Darwinism, Neo-Darwinism, Synthetic theory of Evolution.

Position of man in animal kingdom: distribution, classification and physical characters of Primate

Comparative Anatomy of Man and Ape

Fossil evidences of emergence of man:

- a. Dryopithecine complex
- b. Australopithecine complex
- c. Pithecanthropus, Sinanthropus
- d. Neanderthal, Cro Magnon

Concept of Race: Criteria of Racial classification, Genetic basis of race, Racial classification of India Population (Guha's Classification).

Human Genetics: Basic Concept of Genetics, Mendelian Principles with reference to human.

Bio-Statistics- Measures of Central Tendency: Mean, Median, Mode, and Standard Deviation.

ARCHAEOLOGICAL ANTHROPOLOGY

Concept: History, Pre-History, and Proto-history.

Methods of Dating: Relative and Absolute methods.

Tool making techniques and tool topology.

Paleolithic, Mesolithic and Neolithic Culture of Europe.

Indus Valley Civilization: Main features, Town planning, economy, Polity, religion, Art & Craft, and Causes of Decline.

18. DEFENCE & STRATEGIC STUDIES

Art of Warfare in Indian, Contemporary Study of War and Peace, Indian Military History, World Military History, Strategic Thought, National Security, Science, Technology and National Security, Current Development related to India's Defence and Security.

19. GEOGRAPHY

Lithosphere: Origin of the earth, Geological history of earth; Interior of the earth; Rocks; Endogenetic and Exogenetic Forces, Volcanic and Earthquakes; Drainage pattern; Origin of Continents, Mountain Building, Plate Tectonic Theory, cycle of erosion & Interruption; Mass movement of rock wastes; Landforms formed by running water, wind, coastal, glacier and peri-glacier.

Atmosphere: Structure and composition of the atmosphere; Insolation; Pressure belts and winds; Local winds; Origin of Monsoons; Humidity and rainfall; El Niño phenomenon-Jet Stream, Tropical and temperate cyclones, Koeppen & Thonhwaite classification of world climates; Major climatics.

Hydrosphere: Continental shelf, continental slope, deep sea plains and ocean deeps; Bottom relief of Atlantic and Indian Oceans; salinity; tides; ocean currents; coral reefs.

Human Geography: Nature, Scope, Development, Branches and Approaches of human geography; Man and Environment Relationship - Determinism, Neo-determinism, Possibilism, Neo-determinism & Human ecology of Mountains & Deserts and Probalism; Approaches - ecological, spatial, behavioural and welfare; Human adaptation, Races & Tribes; Types of farming; agricultural regions of the world; Production & distribution iron ore, coal, petroleum, Hydroelectricity, Iron and steel, Cotton textile and Chemical, fishing industry, Social groups and organization; Diffusion of Cultures; Cultural hearths; Major cultural realms,

Population Geography: Population -- growth and demographic transition, distribution and density pattern; Structure and Composition of population; Migration of population in India & World; Population policy in India. Over population, under population; optimum population; population -- resource regions; population problems in India; population planning and control

Settlement Geography: Rural settlements - types and patterns, size, spacing and morphology; distribution of rural settlements in Ganga plain; Urban settlements -- types and patterns, size, spacing and morphology; Classification of towns. Central place theory, Trends of urbanization in the world and in India; Problems of urbanization in India; Urban policy in India.

Regional Geography of India: Structure, relief and drainage; climate, origin of monsoon, droughts and floods, climatic classification by Koppen and Thornthwaite; soil types and distribution; Major minerals (iron ore, mica, Copper, manganese, bauxite and atomic minerals) - distribution, production and utilization; distribution and production of coal, mineral oil and hydel power; irrigation, agricultural regions, green and white revolution and

agro-climatic regions. Industrial localization with reference to iron and steel, cotton textile, sugar, cement and chemical, and paper industries, Industrial regions; foreign trade.

Regional Geography of World: Concept of regions in geography; Types and Classification of regions, Criteria of delimitation and characteristics of natural, cultural, economic and political regions. **Asia** Structure; relief; drainage; climate; natural vegetation and soils; spatial distribution of population; economic base; Regional studies of south, south -east, east and west Asia. **Europe:** Physical, economic and demographic characteristics; Regional studies of British Isles, Eastern, Western and Mediterranean realm. **North /South America and Australia:** Physical, economic and demographic set up; Regional studies of USA, Canada, Brazil and Australia.

History of Geographical Thought: Meaning and scope of geography; Changing philosophy, Approaches to the study of geography Contributions of Greek, Roman, Indian, Chinese, Arabs, Period of Dark Ages & Renaissance, Contributions of German, French, British, American and Russian, Dichotomies in geography, Fundamental concepts in physical, human, economic and settlement geography.

Practical: Statistical Techniques - Mean, Median Mode, Mean & Standard Deviation, CV, Correlation, Regression, Chi-square & Students' t test, nearest neighbor, quadrat count, mean centre, standard distance, drainage & transport network. Projection: Conical Two standard, Bonne's, Polyconic, Cylindrical - Mercator & Equal Area, Zenithal - Equidistant Polar & Stereographic. Mapping - Choropleth, Isopleth, Proportional Circle, Dot method. Graphical Representation: Hythergraph, Climograph, Histogram Scatter graph, Bar graph. Surveying: Plane Table, Prismatic, Indian Clinometer & Telescopic Alidade.

20. MATHEMATICS

Straight Line and planes using vector techniques, Spheres, cones. Cylinders. Central Conchoids, Generating lines. Conies in Polar coordinates.

Sets, Relation and Maps. Real number system, Real Sequences, Limits of sequences. Convergence of Infinite series of positive terms. Limits and continuity of functions of one variable, Differentiability and its applications. Differential Equations of first order, Applications, Equations of higher degree, Linear differential equations of higher order, Variation of parameters, Linear systems of first order.

Application of Linear equations, Statements of Existence theorems.

Vector Calculus, Scalar and Vector fields, Gradient, Divergence and Curl, Line integral. Double integrals. Green's theorem, Surface integrals & triple integrals, Gauss' and Stokes' theorems. Convergence of general series, Absolute and Conditional Convergence, Riemann integration, fundamental theorem of Calculus. Function of several variables, Limits and continuity, Partial and Directional Derivatives.

Vector spaces, Subspaces, Linear independence, Linear span, Bases and Dimension. Matrices, Rank, Systems of Linear Equations, Gauss elimination. Echelon form, Determinates, Cramer's Rule, Eigen values, Eigenvectors, Cayley-Hamilton Theorem, Diagonalization, Inner product spaces, Quadratic Forms.

Differentiability of functions of several variables. Mean value theorem and Taylor's theorem for real valued functions. Jacobians. Inverse and Implicit function theorem. Convergence of sequence and series of functions. Uniform convergence. Convergence of Improper Integrals.

Mechanics; Virtual work, Catenary, Motion in a plain. Constrained Motion. Central forces.

Force in three dimensions. Rigid dynamics, Moments and products of inertia, D'Alembert's principle.

C. Hydrodynamics; Lagrangian and Eulerian approaches, Euler's equation of Motion, Fluid Motion in two dimensions. Groups, Rings and Fields. Linear congruence, Quadratic residues, Arithmetic functions.

Numerical Techniques for roots of general equations, Interpolation, Numerical Differentiation and integration, Numerical solution of ordinary Differential Equations of first and second order.

Numerical Linear Algebra: Matrix Factoring, Iterative methods for systems for Linear, equations. Estimation of eigenvalues and eigenvectors, Least square curve fitting.

21. PSYCHOLOGY

Section I : Basic Psychology process

Section II : PSYCHOLOGICAL STATISTICS

Section III : PSYCHOPATHOLOGY

Section IV : PSYCHOLOGY AND SOCIAL PROCESSES

Section V : DEVELOPMENT PSYCHOLOGY

Section VI : PERSONALITY RESEARCH AND MEASUREMENT

Section VII A : CLINICAL PSYCHOLOGY IN SCHOOL SETTING

OR

SECTION VII B : ORGANISATIONAL BEHAVIOUR

22. STATISTICS

Probability Theory: Random experiments, Sample space, events, algebra of events, axiomatic definition of probability, probability spaces, relationship of axiomatic and classical probability, role of frequency ratios, properties of probability measure, subadditivity, Boole's inequality, probability of union of events, matching problem, repeated birthday problem, occupancy problem, statistics of physical particles, conditional probability and associated probability space, Bayes theorem, independence of events.

Random variables as functions, induced probability measure via inverse mapping, induced probability distribution, distribution functions, distribution functions and their properties, probability mass function (pmf) of discrete random variables, probability density function (pdf) of continuous random variables,

Random vector, marginal and conditional distributions, independence of random variables

Mathematical expectation, moments, factorial moments, moment generating function, probability generating function, Expectation of jointly distributed random variables, marginal and conditional expectation, correlation, Chebyshev's inequality, Markov's inequality, functions of random , variables.

Bernoulli distribution, binomial distribution, Poisson distribution, derivation of Poisson distribution as a limiting case of binomial distribution, geometric distribution, negative binomial distribution, hypergeometric distribution, multinomial distribution, uniform distribution, normal distribution and its relationship with the binomial and Poisson distribution, Cauchy distribution, bivariate normal distribution and its marginal and conditional distributions.

Statistical Methods: Measures of central tendency, dispersion, moments, skewness and kurtosis. Simple linear regression, method of least squares, correlation coefficient, correlation ratio, intraclass correlation, rank correlation, fitting of some nonlinear curves. Multiple regression, multiple and partial correlation for three variables. Analysis of Categorical Data, consistency, independence and association of attributes, coefficient of contingency.

Statistical Inference: Random sample from a given pdf or pmf, Functions of random , variables and their distributions Sufficiency, factorization theorem, consistency, Unbiasedness, Estimation method of maximum likelihood, method of moments. Statistical Tests of Hypothesis-Fundamental concepts including the power function, p values, Neyman and Pearson Lemma, most powerful (MP) and uniformly most powerful (UMP) tests, Applications of χ^2 , t, F and z distributions in tests of significance, Likelihood ratio test, Unbiased test, Neyman Pearson

Lemma for randomized tests, Randomized test for binomial and Poisson distributions. Completeness and sufficiency, Rao-Blackwell theorem, Lehman Scheffe theorem, one parameter exponential family and its completeness, Cramer-Rao inequality, Best linear unbiased estimator.

Sampling Theory: Simple random sampling and Stratified sampling, Sample surveys versus complete enumeration, Non sampling errors, Simple random sampling \with and without replacement, simple random sampling for attributes, Stratified random sampling, advantages of stratification, methods of allocation. Use of auxiliary information: Ratio, regression and product method of estimation, Systematic sampling, Cluster sampling with equal clusters.

Vital Statistics: Crude, death rates, infant mortality rates, standardized death rate, complete and abridge life table - construction and uses, mortality rate and probability of dying, use of survival tables. Measurement of fertility - crude birth rate, general fertility rate, total fertility rate, gross reproduction rate, net reproduction rate, population growth and logistic model for population projection.

Design of Experiments: One-way ANOVA, two-way ANOVA with single observation per cell and equal number of observations per cell. Randomization, Replication, Local Control, Completely randomized design CRD), Randomized block design (RBD) , Latin square design (LSD), 22 and 23 factorial experiments.

Nonparametric Statistics: Order statistics, Distribution of maximum, minimum and r-th order statistic, Joint distribution of r-th and s-th order statistic, distribution of range, distribution free confidence intervals for quantiles and distribution free tolerance intervals, Sign test, Wilcoxon test, Median test, Run test.

Index number: Price relatives and quantity or volume relatives. Link and chain relatives, computation of index numbers, Laspeyre's, Paasche's, Marshal - Edgeworth's and Fisher's index numbers, chain base index number, consumer price-index numbers. Tests for index-numbers: Time and Factor reversal tests.

Time Series: Components of time series, additive and multiplicative models, methods of determination of trend, growth curves, analysis of seasonal component and seasonal indices.

Statistical Quality Control: Causes of variation in quality, control limits, charts for attributes, np chart, p-chart, c- chart, Charts for variables- X- and R charts.

23. AGRICULTURE SCIENCE

AGRICULTURAL BOTANY

Historical, symptomology, properties and nature of plant viruses, modes of transmission of plant viruses. General principle of control of viral diseases in plants. A knowledge of the common viral diseases of potato tobacco, Hibiscus, cucurbits, beans and banana. Historical, broad outlines of morphology, reproduction, nomenclature and classification of plant pathogenic bacteria. History of Mycology, Taxonomy and nomenclature of fungi. Origin and phylogeny of fungi. Different, systems of classification and their basis. Structure and life history of the chief representatives of fungi. History of plant pathology. Dissemination of diseases, modes of infection symptomology, physiology of parasitism, mechanism of disease resistance, fungicides and their action.

Cell structure and function, cell wall, nucleus, mitochondria, golgi apparatus, chloroplasts and other cell organelles, their structure and function. Cell division : mitosis and meiosis. Polyploidy: Nature and classification of Polyploidy. Heridity and environment, laws of heredity; Linkage, crossing over and mapping of chromosomes. The nature of gene and factors affecting mutation. History of plant breeding, its present status and scope. Mode of reproduction in crop plants. Heterosis and its application.

Regional soils of India in relation to crops and their production. Secondary effects on micro flora. Physical nature of soils and water relation of soils. Concept of water requirement of crops and the critical period of water requirement of plants and its significance in crop production. Formation of usar soils and their measurement. Control of alkalinity and salinity. Physiology of flowering, photoperiodism, verbalization and their impact on crop production. Seed formation, longevity and multiplication. Physiology and biochemistry of herbicides. Physiology of propagation. Physiology of fertilization, fruit growth and ripening. Mineral nutrition, uptake and translocation of solutes. Mutually beneficial and toxic influences of plants. Physiological role of Some major and minor elements such as N, R K, Ca, Mg, B, Mo, Mn, Zn.

A study of the botany of important weeds associated with the crop plants of U.P Methods of preventing introduction and spread of weeds. Principles and procedures of weed control Growth, inhibiting, and promoting chemicals and their composition. Soil microorganisms and their role in production. Principles, and practices of dry farming, special problems in dry farming mixed cropping and strip cropping in agriculture in India. Agronomic practices in relation to soil acidity and alkalinity.

Soil nitrogen losses and its restoration, Phosphorous deficiency and soil fertility. Fixation of nutrients in soil. Soil potassium in relation to soil fertility and plants growth and development. Plant production problems and methods. C/N ratio as a function of growth and development. The problems of non-irrigated soils. Tillage and its influence on plant growth. Horticulture-importance and present position. Origin, history, breeding and production technology of important fruits such as Mango, Banana. Citrus, Guava. Papaya, Grape. Pineapple, Litchi, Pomegranate, Ber, Apple, Pear and Walnut with special reference to

climate, soil, propagation, cultivars, nutrition, irrigation and other orchard management practices. History of gardening of India. Styles of gardening, their principles and practices with special reference to Mughal, Japanese and English gardens. Frequency distribution, mean, median and mode. Standard deviation. Test of significance : t, F and chi-square tests. Experimental design basic principles, completely randomized. Randomized block, Latin square and Split-plot designs and their analysis.

AGRICULTURAL CHEMISTRY AND SOIL SCIENCE

Theory of acid and bases, pH and its determination, buffers, oxidation, reduction, catalytic reaction, colloids & their properties, Humus and clays.

Carbohydrates nomenclature, classification, proteins-classification, physical & chemical properties. Liquids classification and properties.

Soil texture & structure. Soil moisture & its movement. Soil chemistry : weathering of rocks & minerals, profile development. Soil forming processes, exchangeable properties of soil, organic matter-properties and its fractions. Reclamation of Soils. Quality of irrigation water. Soil fertility-macro & micro nutrients.

Manures & fertilizers-classification, mode of action & utilization. Uptake of nutrients. Pesticides & residual toxicity.

Enzymes classification & their mechanism of action.

Metabolism of carbohydrates, lipids & proteins.

N-fixation, Phytohormones & vitamins.

AGRICULTURAL ZOOLOGY & ENTOMOLOGY

1. General introduction to animal kingdom and various phyla with special reference to agricultural and economic importance. Agricultural importance of phytoneatodes, snails, slugs, earthworms, crabs, birds, and mammals, their distribution, habit and life cycle.
2. Identification of poisonous snakes of India. Symptoms of snake bite and its antidotes. Life history and control of animal vectors of human diseases and important parasites of man animals.
3. Local fishes of economic importance, planning and implementation of fish farming, knowledge of crustacean and molluscan fisheries. Rat damage to crops and plantations. Methods of its control.
4. Classification of Phylum Arthropoda upto classes: general characters and examples. Position of insects in animal kingdom. Study of characters of insect orders of economic importance. Life history, rearing methods of some useful insects viz. honeybee, silk worm and lac insects.
5. Insect morphology integument and its structure, regions, sclerites. segmentation of head : Its appendages, structure and function : modification of antennae and mouth parts of insects. Study of insect thorax and its appendages including genitalia.
6. Anatomy of grasshopper, digestive, respiratory, excretory, circulatory, reproductive, nervous system and sense organs. Post embryonic development of insect, ecdysis, instars. metamorphosis, types of larvae and pupae. Pest management: principle of integrated Pest management, concept, and procedure. Physical, mechanical, chemical, biological, and legislative control of insects. Insecticide poisoning and its antidotes. Concept and importance of wild life conservation in relation to ecology and environment.

24. M.Sc. (APPLIED GEOLOGY)

(Candidate has to attempt any two papers from following 03 papers and merit will be based on sum of marks obtained in attempted 02 papers)

PAPER-I : MATHEMATICS

Elementary Symbolic Logic : Sets-Algebra, cartesian product, Relation, Functions, Injective and Surjective MAPS; Inverse Functions.

Number System : Natural numbers, Integers, Integer modulo-N division algorithm, Euclidean Algorithm, Prime factorization.

Real-Number System : Complex Numbers, Real Sequence, Convergence of Infinite Series, Limit and Continuity of Functions of one Variable, Properties of continuous function in closed intervals. Differentiability and its application.

Differential Equations : Differential equations of first order, Linear differential equations with constant coefficients.

Functions of Several Variables : Limits, Continuity, Partial Derivatives, Differentiability, Gradient, Divergence, Curl, Line Surface and Volume Integrals.

Linear Algebra : Vector Spaces, Bases and Dimensions, Rank of Linear Transformations, Matrices, Matrix Representation of Linear Maps, Determinants, Rank of Matrices, Eigenvalues, Eigenvector, Cayley-Hamilton theorem, Diagonalisation of Matrices with distinct eigen values. Sequences and series of functions of a real variable, uniform convergence Riemann-integral of a Bounded function, convergence of Improper Integrals.

Statistics & Probability : Basic concepts and Bayes theorem.

PAPER-II : PHYSICS

Mechanics and Elementary Relativity theory : Motion of systems of particles, Linear and angular momentum, Rotational Motion, Moment of inertia.

Non-rigid bodies : Stress and strain, Elastic moduli, Generalised Hook's law.

Fluid Mechanics : Ideal and viscous fluids, Equation of continuity, Rotational and Irrotational flows, Bernoulli's Theorem, Poiseuille's Equation, Stoke's Law.

Special theory of Relativity : Galilean Transformation, Postulates of Special Theory, Lorentz transformation, Relativistic Dynamics.

Thermal Physics : Zeroeth law of Thermodynamics, Concept of temperature, First law of Thermodynamics, Simple Applications, Reversible and Irreversible Processes, Second law of thermodynamics, Carnot's cycle, Entropy, Temperature Entropy Equation, Thermodynamic potentials, Joule-Thomson effect, Kinetic theory of gases, Conduction and Radiation of heat.

Optics : Corpuscular and Wave Theory of Light, Interference, Diffraction, Fresnel's Theory, Fraunhofer's Diffraction, Resolving Power of Prism, Polarization, double Refraction, Production and Detection of elliptically and circularly polarized Light, Basic Ideas of stimulated Emission, Lasers.

Wave-Motion, Electrostatics, Magneto statics : Oscillations-Simple Harmonic and Damped Oscillations, Forced Oscillations, Wave Motion in Non-Dispersive media, Wave Equation, Progressive Wave Solution, Acoustic Impedance, Energy Density, reflection and Transmission of Plane Waves, Coulomb's Law, Gauss's Law, Electric Dipole, Dielectrics, Ampere's Law, Biot-Severt's Law, Vector potential, Divergence and Curl of B, Magnetic Material and Magnetization, Time Varying Fields, Displacement Current, Curl of H, Faraday's Law, Self and mutual inductance, Electromagnetic waves in free space, Maxwell's Equations.

Atomic & Nuclear Physics : Bohr-Sommerfield model, Characteristics of Continuous X-Rays, Space quantisation, Bohr Magneton, Larmor Precession, Diamagnetism, Paramagnetism, Ferromagnetism and Antiferromagnetism. Quantum Concept : Photoelectric effect, Compton effect, deBroglie waves, Heisenberg's uncertainty principle, One-Dimensional Schrodiner's wave equation. Nuclear Physics : Natural Radioactivity, Fission and fusion, Liquid Drop Model.

Electrical Circuits and Basic Semiconductor Electronics : Circuit parameters, Kirchhoff's laws, Norton's and Thevenin's theorems, Charging and discharging of condenser, Growth and decay of current in R-L circuits, Balance and sensitivity conditions for A-C bridge, Semiconductor materials, Diodes and Transistor, Measuring instruments, multimeters and CRO, Digital Electronics.

Paper – III : Geology

The Planet Earth: Origin of the solar system and the Earth; Geosphere and the composition of the earth; Shape and size of the earth; Earth –moon system; Formation of continents and oceans; Dating rocks and age of earth; Energy in the earth systems; Volcanism and volcanic landforms; Interior of earth; Earthquakes; Earth's magnetism and gravity, Isostasy; Elements of Plate tectonics; Orogenic cycles.

Geomorphology: Weathering and erosion; transportation and deposition due to wind, ice, river, sea, and resulting landforms, Structurally controlled landforms.

Structural Geology: Concept of stratum; contour; Outcrop patterns; Maps and cross Sections; Dip and Strike; Classification and origin of folds, faults, joints, foliation and lineation, unconformities; Shear zones.

Palaeontology: Major steps in the evolution of life forms; Fossils; their modes of preservation and utility; Morphological characters, major evolutionary trends and ages of important groups of animals-Brachiopoda, Mollusca, Trilobita, Echinodermata; Gondwana plant fossils; Elementary idea of vertebrate fossils in India.

Stratigraphy: Principles of stratigraphy; Litho-, chrono- and biostratigraphic classification; distribution and classification of the stratigraphic horizons of India from Achaean to Recent.

Mineralogy: Symmetry and forms in common crystals classes; Physical properties of minerals; Isomorphism and Polymorphism, Classification of minerals; Structure of silicates; Mineralogy of common rock-forming minerals; Modes of occurrence of minerals in rocks. Transmitted polarized light microscopy and optical properties of uniaxial and biaxial minerals.

Petrology: definition and classification of rocks; igneous rocks-forms of igneous bodies; Crystallization of magma; classification, association and genesis of igneous rocks; sedimentary rocks-classification, texture and structure; size and shape of sedimentary bodies. Metamorphic rocks-classification, facies, texture and properties.

Economic Geology: Properties of common economic minerals; General properties of formation of mineral deposits; physical character; Mode of occurrence and distribution in India both of metallic and non-metallic deposits; Coal and petroleum Occurrences in India.

Applied Geology: Ground water Hydrology; Mineral exploration, elements of Mining Geology and Environment Geology; Principles of Engineering Geology.

25. BIOCHEMISTRY

Biomolecules, Enzymes, Intermediary Metabolism, Vitamins Hormones, Physiology, Genetics, Cell biology and Molecular Biology, Molecular basis of gene regulation, Nutrition, Microbiology, Physical Chemistry.

26. BIOINFORMATICS

Eligibility Criterion:

The Course for M.Sc. in Bioinformatics will be open those student who have passed the B.Sc. Examination of this University or any other University recognized by this University with the following combinations with 55% of the marks.

- (a) Zoology, Botany, Chemistry
- (b) Zoology, Chemistry, Biochemistry
- (c) Botany, Chemistry, Biochemistry
- (d) Mathematics, Physics, Chemistry
- (e) Mathematics, Physics, Computer Science
- (f) Mathematics, Physics, Statistics

Those who have passed B.Sc. with Molecular Biology, Cell Biology, Microbiology, Biotechnology, Biophysics, Biochemistry, Structural Biology, as one of the subjects can also apply.

Syllabus for Admission Test:

The syllabus for the admission test will be of graduation level for above mentioned subjects/combinations.

27. BOTANY

Fungi; Lichens; Bacteria and Plant Viruses; Algae; Bryophyte; Pteridophyta; Gymnospermophyta; Taxonomy; Morphology & Anatomy; Life History; Plant Physiology; Plant Ecology; Cytology; Genetics; Molecular Biology; Evolution; Microbiology And Applied Microbiology; Genetic Engineering, Plant Pathology; Economic Botany; Applied Plant Anatomy; Plant Breeding; Marine Biology & Limnology; Palaeobotany and Palynology; Plant Diversification; Morphogenesis and Tissue Culture.

28. CHEMISTRY**A. (PHYSICAL CHEMISTRY)**

Thermodynamics, Chemical Kinetics, and Catalysis, Chain Reactions and Photochemistry, Electro-Chemistry, Atomic Structure, Gasses State, Surface Phenomena.

B. (ORGANIC CHEMISTRY)

Bonding in Carbon Compounds, Aromaticity and Huckel's rule, Aliphatic and Aromatic Aldehydes and Ketones (i) Optical Isomerism (ii) Geometrical Isomerism, Active Methylene Compounds, Spectroscopy U.V. Visible, IR, NMR, Cycloparaffins, Carbohydrates, Diazonium Compounds, Synthetic Polymers, Synthetic applications of Grignard reagents.

C. (INORGANIC CHEMISTRY)

Atomic Structures and Periodic Properties, Chemical Bonding and Molecular Structure, Co-ordination Chemistry, Chemistry of Representative Elements, Transition metals including Lanthanides, Extractive Metallurgy, Environmental Pollution, Metal Ions in Biological Systems, Preparation, Properties and Structures, Inorganic Analysis.

29. COMPUTER SCIENCE**PAPER-I****MATHEMATICS**

Elementary Symbolic Logic : Sets-Algebra, cartesian product, Relation, Functions, Injective and Surjective MAPS; Inverse Functions.

Number System : Natural numbers, Integers, Integer modulo-N division algorithm, Euclidean Algorithm, Prime factorization.

Real-Number System : Complex Numbers, Real Sequence, Convergence of Infinite Series, Limit and Continuity of Functions of one Variable, Properties of continuous function in closed intervals. Differentiability and its application.

Differential Equations : Differential equations of first order, Linear differential equations with constant coefficients.

Functions of Several Variables : Limits, Continuity, Partial Derivatives, Differentiability, Gradient, Divergence, Curl, Line Surface and Volume Integrals.

Linear Algebra : Vector Spaces, Bases and Dimensions, Rank of Linear Transformations, Matrices, Matrix Representation of Linear Maps, Determinants, Rank of Matrices, Eigenvalues, Eigenvector, Cayley-Hamilton theorem, Diagonalisation of Matrices with distinct eigen values. Sequences and series of functions of a real variable, uniform convergence Riemann-integral of a Bounded function, convergence of Improper Integrals.

Statistics & Probability : Basic concepts and Bayes theorem.

PAPER-II**PHYSICS**

Mechanics and Elementary Relativity theory : Motion of systems of particles, Linear and angular momentum, Rotational Motion, Moment of inertia.

Non-rigid bodies : Stress and strain, Elastic moduli, Generalised Hook's law.

Fluid Mechanics : Ideal and viscous fluids, Equation of continuity, Rotational and Irrotational flows, Bernoulli's Theorem, Poiseuille's Equation, Stoke's Law.

Special theory of Relativity : Galilean Transformation, Postulates of Special Theory, Lorentz transformation, Relativistic Dynamics.

Thermal Physics : Zeroth law of Thermodynamics, Concept of temperature, First law of Thermodynamics, Simple Applications, Reversible and Irreversible Processes, Second law of thermodynamics, Carnot's cycle, Entropy, Temperature Entropy Equation, Thermodynamic potentials, Joule-Thomson effect, Kinetic theory of gases, Conduction and Radiation of heat

Optics : Corpuscular and Wave Theory of Light, Interference, Diffraction, Fresnel's Theory, Fraunhofer's Diffraction, Resolving Power of Prism, Polarisation, double Refraction, Production and Detection of elliptically and circularly polarised Light, Basic Ideas of stimulated Emission, Lasers.

Wave-Motion, Electrostatics, Magnetostatics: Oscillations-Simple Harmonic and Damped Oscillations, Forced Oscillations, Wave Motion in Non-Dispersive media, Wave Equation, Progressive Wave Solution, Acoustic Impedance, Energy Density, reflection and

Transmission of Plane Waves, Coulomb's Law, Gauss's Law, Electric Dipole, Dielectrics, Ampere's Law, Biot-Severt's Law, Vector potential, Divergence and Curl of B, Magnetic Material and Magnetisation, Time Varying Fields, Displacement Current, Curl of H, Faraday's Law, Self and mutual inductance, Electromagnetic waves in free space, Maxwell's Equations.

Atomic & Nuclear Physics : Bohr-Sommerfield model, Characteristics of Continuous X-Rays, Space quantisation, Bohr Magneton, Larmor Precession, Diamagnetism, Paramagnetism, Ferromagnetism and Antiferromagnetism. Quantum Concept : Photoelectric effect, Compton effect, deBroglie waves, Heisenberg's uncertainty principle, One-Dimensional Schrodiner's wave equation. Nuclear Physics : Natural Radioactivity, Fission and fusion, Liquid Drop Model.

Electrical Circuits and Basic Semiconductor Electronics : Circuit parameters, Kirchhoff's laws, Norton's and Thevenin's theorems, Charging and discharging of condenser, Growth and decay of current in R-L circuits, Balance and sensitivity conditions for A-C bridge, Semiconductor materials, Diodes and Transistor, Measuring instruments, multimeters and CRO, Digital Electronics.

OR

PAPER-II

COMPUTER SCIENCE

Mathematical Logic : Mathematical systems, Statements and Notation, Propositions and connectives, Statement formulae and truth tables, Logic variables, Logic functions, Logic expressions, Equivalence classes of logic function, Complete sets of logic functions.

Logic Algebra : Boolean Algebra, Theorems of Boolean Algebra, Switching Algebra, Switching functions, and switching formulae, Binary number systems, Disjunctive and conjunctive canonical forms of expressing switching functions, Transformation. Minimisation techniques, Minimisation using Boolean identities, Karnaugh map.

Logic Circuits : Logic gates, Analysis of Combinational circuits, MSI logic building blocks, Realization of logic circuits using SSI and MSI, Flip-flops, Analysis of sequential logic circuits, Counters and Registers.

Computer Fundamentals : Fundamental units of a digital computer, Stored programme concept, Data representation in computers, Arithmetic operations CPU architecture, Instruction format, Addressing modes, Instruction set of 8 bit processors. Concept of sequential and random storage, Basic memory cell and their organization, RAM, ROM, EPROM etc. Auxiliary storage devices, Magnetic and optical disc, I/O techniques, I/O devices-Key board, Monitor, Printer etc.

Software : Algorithms, Control Structures, Flowcharts, Pseudocode, Design of Algorithm, Tracing, Simple Algorithm, Language features of C, Programming in C, Data Structures-Arrays, Stack, Queues, Linked lists, Multilinked lists, Trees, Tree Traversal, Simple properties of Graph.

30. M.Sc. IN ENVIRONMENTAL SCIENCES

The written Test for admission to the Master's Programme in Environmental Sciences is designed to assess interest of the candidate and his/ her basic knowledge in the fields of Botany, Zoology, Statistics, Chemistry and Environmental Sciences.

31. MATERIAL SCIENCE

Admission Procedure: Admission Test. Questions will cover 20% from Mathematic (Compulsory-Section I) and 80% from either of the Physics (Optional –Section II) and Chemistry (Optional-Section III).

Syllabus for the admission Test: Broad Topics Appended. It will cover average topics taught at UG level in Indian Universities.

Section – I Common for all categories

Mathematics:

- Functions, Differentiation, Application of Derivatives, Definite and Indefinite Integrals, Limit and Continuity, Differential equations (first order and second order), Curve of simple functions, Scalar and Vector products. Reciprocal vectors. Vector Differentiation, Gradient, Divergence and curl. Vector integration. Theorems of Gauss, Stoke's and problems based on these.

Section – II Elective

Physics:

- Thermodynamics, Kinetic Theory of Gases, Conduction of Heat and Radiation.
- Motion under central forces, Mechanics of nonrigid bodies, Elastic properties, Fluid Mechanics.
- Electrical Circuits: AC, DC and transient behaviour.
- Semiconductor Electronics including photonics and digital electronics
- One dimensional motion in non dispersive media, Ultrasonics.
- Electrostatics in free space and in dielectric media, Electric Current, Magnetostatics, Time varying Fields, Electromagnetic waves in free waves, Physical optics.
- Atomic Physics, X-ray, Vibrational and Rotational spectroscopies, UV-visible spectroscopies.
- Need of quantum mechanics, observables and operators, Schrödinger equation and its simple applications upto hydrogen like atoms.
- Crystal Structure, Reciprocal Lattice, Interatomic forces and classification of solids, Free electron theory and band gap of solids, Electrical and Magnetic properties of Materials.

OR

Chemistry:

- Quantum Chemistry: Observables and Operators, Schrödinger equation and its simple applications upto hydrogen like atoms.
- Chemical Bonding, Valence bond theory, Molecular orbital theory.
- Properties of s and p blocks, Transition and inner transition elements.
- Coordination compounds, Complex Formation.
- Fundamentals of organic chemistry, Hybridization, Inductive, Electrometric, Resonance and hyperconjugative effects. Huckel's rule, Stereo Chemistry of carbon compounds, isomerism, elements of symmetry, R,S-System of nomenclature, Methods for determination of reaction mechanism, Chemistry of Functional groups, Inductive, electromeric, conjugative effects and resonance.

- UV-visible, Vibrational and Rotational spectroscopies, Nuclear Magnetic Resonance Spectroscopy.
- Chemical Kinetics: zero, first, second and third order reactions.
- Chemical Thermodynamics and Chemical Equilibria.
- Electrochemistry, reversible electrodes, Electrode reactions, Nernst equation, determination of cell E.M.F, Concentration Cells, Acid-Base concepts.
- Photochemistry: Lambert-Beer law, Jablonski diagram.
- Gaseous state, Isotherm, the law of corresponding states, Maxwell's distribution, Liquid State.
Solid State Chemistry, space lattice, unit cell, Symmetry elements, Lattice planes and Miller indices, X-ray diffraction.

32. PHYSICS

Thermodynamic equilibrium, Zeroth law, first law, second law, reversible process, Carnot's theorem, entropy and disorder; thermodynamic relations and applications. Clausius-Clayperon equation, phase transitions of first and second order.

Radiation as e.m. wave, Kirchhoffs law. black body radiation, pressure and energy density, Stefan-Boltzmann law, Planck's law and its limiting cases. Phase space, ensembles, equilibrium and fluctuation, entropy and probability, entropy of a perfect gas, microcanonical, canonical and grand canonical ensembles, partition function, Boltzmann distribution, B.E. and FD. statistics, simple applications.

Gauss' Law, Blot-Savart law, Vector Potential, Faraday law. Amperes circuital law, generalization of Ampere's law by Maxwell, Maxwell's equations and its solution in free space and simple dielectrics. Poynting theorem, plane wave propagation in metals and plasmas.

Interference, Special theory of Relativity

Uncertainty principle.

Linear Harmonic oscillator, Angular momentum, commutation relations, Ladder operators eigenvalues of I, and L Z, Parity operator Hydrogen atom problem, Pauli spin matrices.

Time-independent non-degenerate perturbation theory and its simple applications.

Identical particles, symmetric and anti-symmetric wave function.

Crystalline state of solids, unit cell, bravais lattice, reciprocal lattice, interatomic forces, vibrations of monoatomic and diatomic chains, phonons.

Free electron theory of metals, electrons in periodic potential, Bloch waves, semiconductors, p-n , junction, diode, rectification, ripple factor, Transistor action and characteristics, C.E.

amplifiers and its frequency response. Logic gates, Boolean algebra, Combination logic,

Integrated Circuits. Solar Cell

33. RURAL TECHNOLOGY AND DEVELOPMENT

Unit-1

A general introduction to Fungi including importance and reproduction

Bacteria, Plant viruses: Introduction and their economic importance. An elementary knowledge of soil, water, sewage, milk, food and air bacteria. Introduction of industrial microbiology.

Algae: a general introduction with their importance.

Unit-II

A brief account of Bentham & Hooker system of classification, General introduction of following families with their economic importance:

Poaceae, Leguminosae, Orchidaceae, Brassicaceae, Moraceae, Cucurbitaceae, Asteraceae, Solanaceae, Rubiaceae, Apiaceae, Liliaceae etc.

Different types of fruit with reference to their marketing. Broad outline of morphology & anatomy of vegetative and reproductive organs of angiosperms, cell wall structure, tissue and tissue systems.

Growth and growth hormones, Photosynthesis and Respiration, Nitrogen assimilation and fixation. Climate, weather and different plant communities including hydrophytes, mesophytes, xerophytes, mangroves, epiphytes and parasites.

Unit-III

Concept and scope of genetic engineering, role of enzymes. GM crops and their importance

Different plant diseases and their management. Integrated pest management (IPM), major human diseases caused by bacteria and fungi. Tissue culture and their applications.

A general introduction of horticulture, floriculture, apiculture and sericulture.

An introduction to Bee-keeping, pearl culture and tasar culture.

Unit-IV

Different models of rural development, Sustainable development, Different schemes of central government. Agriculture and economic development, Agro-forestry.

Concept of society, Adult & Non-formal Education, Sanitation programme and implementation, Government Health insurance schemes, bank insurance, smart card for BPL families.

Kharif, Rabi and Zaid Crops. Factors affecting the cultivation and production of crops.

34. TEXTILE AND APPAREL DESIGN

Design- Types of Design, Principles of Design, Element of Design- Line texture, Colour.

Fashion- Fashion cycle, theories of fashion.

Teaching in pattern making- Drafting, draping, pattern.

fitting- Associated problems

History & scope of Apparel Design in India.

Terminology of fabric cutting & sewing

Drafting's of - frock, Romper, Women's garments, Men's garments.

Properties of textile fibers.

Textile chemistry- Natural fibers, man made fibers, yarn construction, Fabric finishes, Dyes types.

Traditional textile of India - Chikankari, Zardosi, Kanthas of Bengal, Kashmiri kasheeda, Muslins of Dhaka, Amru and Himru of Hyderabad, Baluchari, kanchi varams, chanderi's , phulkari, patola.

Removal of stain - Cotton, Silk, and synthetic fabric soap manufacturing.

Laundry & dry cleaning - Soap making, types of bleaches.

Printing methods- Resist, block, and Screen printing.

35. ZOOLOGY

Nonchordates, Taxonomy and Evolution, Physiology and Biochemistry, Protochordates and Vertebrates

Special Topics

Sphenodon as living fossil, Biting mechanism of poisonous snake; snake venom and antivenom. Flight adaptations of birds, Aquatic mammals.

Animal Distribution and Ecology, Genetics and Cell Biology, Molecular Biology and Genetic Engineering, Economic Zoology and Environmental Biology, Development Biology and Ethology.

36. M.Com. (MASTER OF COMMERCE)

Statistics, Management, Company Law, Accountancy and Cost Accounting, Income Tax, Auditing, Indian Economy, Economics, Banking, Business Organization, Business Law, Insurance.

37. M. P. A. (MUSIC)

(VOCAL)

1. **Detailed study of the following Ragas:**
Puriya, Marwa, Jai-Jaiwanti, Suddha Kalyan, Deshkar, Kamod, Chayanat, Todi, Multani, Miyan-Malhar, Gound-Malhar, Adana, Darbari Kanhada, Basant, Paraj, Puriya Dhanashri, Shri, Hindol, Suddha Sarang, Madhuwanti.
2. **Taal**
Rupak, Teerva, Dadra, Kaharwa, Trital, Jhaptal Ektal, Dharmar, Ada Chartal, Pancham Sawari, Gaj jhampa, Chartala, Sooltal, Deepchandi, Jhoomba, Tilwada.
3. Details introduction of all the Ragas and Taalas mentioned above.
4. Comparative study of the Samprakit Ragas and Taalas.
5. Study of Alpatva and Bahutva, Tirobhav and their use and importance.
6. Laya and layakari- Different types of Layakaries, Dugun, Tigun Chaugun and Ada.
7. Different styles of Gayaki - Dhruvapad, Dhamar, Tappa, Thumari and Chaiti.
8. Brief study of different Gharanas of Vocal Music.
9. Life sketch and contribution of Eminent Musicians and Vocalist.
10. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swear); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
11. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Sothern Talapaddhaties.
12. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ustad Vilayat Khan, Ameer Khusroo, Pt. Ravi Shankar, Pt. Ram Sahai, Ahmad Jan Thirakwa, Nana Sahib Pansse.
13. History of Music and classification of ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods.

Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kind of Gamaka. Brief knowledge of Different Gharanas.

(INSTRUMENTAL SITAR)

1. **Detailed study of the following Ragas:**
Puriya, Marwa, Jai-Jaiwanti, Suddha Kalyan, Deshkar, Kamod, Chayanat, Todi, Multani, Miyan-Malhar, Gound-Malhar, Adana, Darbari Kanhada, Basant, Paraj, Puriya Dhanashri, Shri, Hindol, Suddha Sarang, Madhuwanti.
2. **Taalas**
Rupak, Teerva, Dadra, Kaharwa, Trital, Jhaptal Ektal, Dharmar, Ada Chartal, Pancham Sawari, Gaj jhampa, Chartala, Sooltal, Deepchandi, Jhoomba, Tilwada.
3. Details introduction of all the Ragas and Taalas mentioned above.
4. Comparative study of the Samprakit Ragas and Taalas.
5. Study of Alpatva and Bahutva, Tirobhav-Avirbhav and their use and importance.
6. Laya and layakari- Different types of Layakaries, Dugun, Tigun Chaugun and Ada.
7. Different styles and Baj - Maseetkhani, Razakhani, Firozkhani etc.
8. Brief study of different Gharanas of Sitar.
9. Life sketch and contribution of Eminent Musicians and Instrumentalists.
10. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swar); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
11. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Sothern Talapaddhaties.
12. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ustad Vilayat Khan, Ameer Khusroo, Pt. Ravi Shankar, Pt. Nikhil Banerjee.
13. History of Music and classification of Ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods.

Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kind of Gamaka. Brief knowledge of Different Gharanas.

(INSTRUMENTAL TABLA)

1. **Detailed study of the following Taalas:** Trital, Jhaptal, Rupak, Teevra, Sooltal, Ektal, Chartal Basant, Pancham Swari, Gaj Jhampa, Dhamar, Laxmi, Rudra, Shikhar, Brahma, Kurnbha, ganesh, Matt, Dadra and Kaharwa, Jat Taal, Deepchandi Taal.
2. Kayada, Palta, Peshkar, Rela, 'Laggi-Ladi', Paran, different types of Chakkardar, Tihai, and paran, Tripalli, Choupalli, Nauhakka, Jhoolna ke Bol, Gat- Farad, Mukhda, Mohra.
3. Ten Varnas of Tabla.
4. Study of Sam Matrik and Samprakrit Taalas.
5. Different Gharanas of Tabla playing with their style and Baj.
6. Life sketch and contribution of Eminent Musicians and Musicologist.
7. Laya-Layakari, different kinds of Layakaries, Dugun, Tigun, Chaugun, Aad, Kuada, Biyad etc.
8. Life sketch and style of playing leading Tabla Artists, Padam Bhushan Pt. Samta Prasad, Padam Vibhushan Pt. Kishan Maharaj .
9. Vibration and frequency, pitch and its relation with vibrator, Amplitude, (Swaymbhu Swear); Consonance and Dissonance, Main Types of chords, Absorption, echo, Reverberation and Resonance of sound, Placement of Sudha and Vikrit Swars on different shruties according to Lochan, Ahobal, Pundarik, Ramamatya, Somnath.
10. Notation system of Bhatkhande and Vishnudigambar, various types of intervals of notes. Different Musical scales, comparative study of Notation System of Bhatkhande and Western Music, placement of notes on 'Veena' according to Pt. Srinivas, Comparative study of Northern Sothern Talapaddhaties.
11. Biographies of Bhatkhande, Vishnudigambar, Tansen, Ameer Khusroo, Pt. Ram Sahai, Ahmad Jan Thirakwa, Nana Sahib Panse.
12. History of Music and classification of Ragas and Taals. History of Music of Ancient period up to 13th century. Short History of Music of Medieval and Modern periods. Comparison of Hindustani and Karnataka Music Systems. Gram, Moorchana its kind and their importance. Kinds of Yati. Brief knowledge of Different Gharanas.
13. Gharana of Tabla
 - Tabla Aur Pakhawaj Ka Tulnatmak Adhyayan.
 - Classification of Instruments.

- Taal Ka Manovaijyanik Prabhav.

38. MASTER OF FINE ARTS (M.F.A.)

Theory : (conducted by the University)

Syllabus:

Aesthetics & Art Appreciation (Indian and Western)

History of Indian Art (Pre-history to Modern)

History of Western Art (Pre-history to Modern)

Folk, Tribal and current trends in Art Scenario.

Practical: (conducted by the Department)

For admission in M.F.A in Painting candidate has to appear in Practical Test of 100 marks. Life Drawing, **Time: 180 minutes of 100 marks** in charcoal/Pastel/ Water colour (The Practical test will be conducted by the Department . For Practical test half imperial size paper will be given. The candidates are advised to contact the Head, Visual Arts Department for Practical Test.)

Interview : 50 Marks (conducted by the Department)

39. M. TECH. IN EARTH SYSTEM SCIENCES (ESS)

Syllabus for Entrance Examination

Statistical Distributions, Probability, Curve fitting, Correlation, Regression, Mean, Variance, Analysis of variance, Significance tests, Fundamentals of computers and programming, Knowledge of different operating systems, Numerical Methods, Ordinary and Partial Differential Equations, Basics of Atmosphere and Ocean, Weather and Climate, Composition and structure of atmosphere, Thermodynamics of the atmosphere, Laws of thermo-dynamics, Heat budget, Properties of seawater, Temperature, Salinity, Density, Conductivity, Indian Monsoon, Ecological Principles, Molecules and their interaction relevant to Biology.

40. MASTER OF PHYSICAL EDUCATION (M.P.Ed.)

1. Introduction, Foundation and Management of Physical Education
 - 1.1 Aims and objectives of Education and Physical Education and Contribution of Physical Education.
 - 1.2 Biological, Psychological and Sociological Principles and their Application in Physical Education.
 - 1.3 Different Schools of Philosophy and their relevance to Physical Education.
 - 1.4 Meaning, Phases, Nature and Importance of Management.
 - 1.5 Location, Preparation, Layout and Maintenance of Play Fields Construction, care and Maintenance of Gymnasium and Swimming Pool.
 - 1.6 Equipments in Physical Education Criteria of selection, procedure of purchase, care and maintenance of equipments.
 - 1.7 Intramural and Extramural Programmes.
 - 1.8 Budget for Physical Education- Budget making and accounting.
- 2- Health Education
 - 2.1 Definition of Health and Description of its components.
 - 2.2 Definition, Scope and Principles of Health Education.
 - 2.3 Health Problems in India.
 - 2.4 School Health Programme
 - 2.5 Nutrition, Assessment of Nutrition, Classification of Food, Balance Diet.
- 3- Anatomy, Physiology and Physiology of Exercise
 - 3.1 Essential properties of Living Matter.
 - 3.2 Cell, Tissues, Organs and Systems- Structure and Function
 - 3.3 Study of following systems and processes with a view to understand the effect of exercise on Different systems of the Body.
 - 3.3.1 Cardio- Vascular System
 - 3.3.2 Respiratory System
 - 3.3.3 Nervous System
 - 3.3.4 Metabolism and Temperature Regulation
 - 3.3.5 Sensory System
- 4- Educational Methods and Educational Technology
 - 4.1 Teaching Technique in Education
 - 4.2 Principles of Teaching, Commands and Class Management
 - 4.3 Lesson Planning- Physical Education and Coaching Lessons
 - 4.4 Tournaments- Knockout, League, Combination and Challenge types.
 - 4.5 Audio- Visual aids- values, criteria for selection and suggestion for use.
 - 4.6 Presentation Techniques in Physical Education.
 - 4.7 Micro Teaching, Simulation Teaching.
 - 4.8 Definition of Components of an Instruction System, Advantages of System approach.
- 5- Educational Psychology
 - 5.1 Growth and Development, types of learning, principles of learning, Learning use.

- 5.2 Factors of learning and theories of learning.
- 5.3 Individual Differences
- 5.4 Personality (Meaning & Memory)
- 5.5 Memory & Types of Memory.
- 6- Kinesiology and Corrective Physical Education
 - 6.1 Types of Joints & Muscles.
 - 6.2 Major Terminologies of Fundamental Movements.
 - 6.3 Location and Action of Major Muscles.
 - 6.4 Motor Unit and all & Non- Law.
 - 6.5 Reciprocal Innervation.
 - 6.6 Equilibrium and Friction.
 - 6.7 Prevention of Injuries.
 - 6.8 Massage
 - 6.9 Postural Deformities
 - 6.10 Therapeutic Exercises
 - 6.11 Rehabilitation of Sport Injuries.
- 7- Test & Measurements
 - 7.1 Test, Measurements, Evaluation, Statistics, Their Meaning
 - 7.2 Measures of Central Tendency, Measures of Variability.
 - 7.3 Percentile and correlation
 - 7.4 Criteria of Test Selection
 - 7.5 Motor Fitness tests, Skill Tests of different Games & Sports
- 8- Sports Training
 - 8.1 Meaning, Definition and Principles of Sports Training
 - 8.2 Definitions, types and factors of training load.
 - 8.3 Meaning and Classification of speed, strength and endurance.
 - 8.4 Training method of speed, strength and endurance.
 - 8.5 Definition and method of teaching training.
 - 8.6 Meaning, types & importance of periodization.
- 9. General Knowledge/ Awareness with special reference to Major Games/Sports (AIU/ IOC listed); Reasoning etc.