

Cost of Application Form :-

1. Rs. 1500/-

2. For SC/ST Candidates - Rs.750/-

HOMOEOPATHY UNIVERSITY

PRE HOMOEOPATHIC ENTRANCE TEST - 2016

(Number of Seats -100)

For Admission in its Constituent College

**Dr. M.P.K. Homoeopathic Medical College, Hospital & Research Centre
Jaipur**

INFORMATION BOOKLET

The Examination Centre will be at Jaipur only.

Last Date for submission of form : 24-06-2016

Time : Upto 3:00 PM

Admission Forms after this date and time will not be accepted

OFFICE HOURS: 9:00 AM to 3:00 PM on all working days

Ph. No. : 0141-5184404, 5184410, 5184412, 5184414

Web Site: www.homoeopathyuniversity.org



Homoeopathy University

Plot No. 10,11 & 12, Village Saipura, Sanganer
JAIPUR (RAJ.) - 302029

Date of Examination	:	26-06-2016
Time	:	10:00 AM to 12:30 PM
Centre	:	Dr. M.P.K. Homoeopathic Medical College, Hospital & Research Centre, Station Road, Jaipur-302006 (Rajasthan)
Paper	:	Sec. A: Physics (40 Questions) Sec. B: Chemistry (40 Questions) Sec. C: Zoology (35 Questions) Sec. D: Botany (35 Questions)

SALIENT FEATURES

1. One Paper Scheme.
2. Answers to be marked by blue / black ink pointed ball pen only.
3. Merit list will be uploaded on the site of University.

IMPORTANT NOTE:-

- A. All Reserve Category Candidates must enclose duly attested (Attested by Gazetted officer only) photocopy of the Caste Certificate issued by the Competent authority with the application form otherwise the candidate will not be given the benefit of reservation as asked for .
- B. (i) If a candidate downloads the form, from university website he/she must attach D.D. of Rs. 1500/- (for General & O.B.C.) and Rupees 750/- (for S.C. & S.T.) in favour of Homoeopathy University, Jaipur
(ii) Form can be filled online on : www.homoeopathyuniversity.org
- C. If a candidate downloads the form, from university website, he/she must send two properly self addressed envelopes as 01 for Admit Card & 02 for Mark sheet & for Counseling Letter. (Size 5"X11").
- D. All demand drafts should be made in favour of Homoeopathy University, Jaipur payable at Jaipur.
- E. For all regular and updated information concerning PHET-2015 and for admissions/date of counseling visit our website www.homoeopathyuniversity.org time to time.

1. GENERAL INSTRUCTION

- 1.1 The form is in four parts: (A) The "Admission Form", for BHMS course; (B) The "Examination cum Application Form", for PHET; (C) The Admission Card; (D) The envelopes (01) for admission card and (02) for dispatching the mark-sheet as well as Counseling letter.
- 1.2 A Guide Book named "Information Booklet" containing rules, procedures and Syllabus etc. (To be retained by the candidate).
- 1.3 The completely filled forms 'A', 'B', 'C' and Self Addressed envelopes should be sent to "the convener PHET-2016, Homoeopathy University, City Office- Dr. M.P.K. Homoeopathic Medical College, Hospital & Research Centre, Station Road, Jaipur (Raj.)-302006".

- 1.4 The form should be sent either by Registered Post/Speed Post or it may be submitted personally at City Office- **Dr. M.P.K. Homoeopathic Medical College, Hospital & Research Centre**, Station Road, Jaipur (Raj.)-302006.
- 1.5 The form sent by post should be received at office latest by 24th June, 2016 upto 3.00 PM. Any form after this date and time will not be entertained. The form which should be submitted personally at the office will be deposited latest by 24th June, 2016 upto 3.00 PM.
- 1.6 The candidate must paste his/her recent photographs. All the photographs should be identical and must be signed by the candidate. Whenever an attested photograph is needed (as mentioned in the form), it should be duly attested by Gazetted Officer.
- 1.7 Each candidate must clearly mention the category of reservation if any as desired by him/her.
- 1.8 **Any candidate, once allowed appearing at PHET-2016, does not become eligible directly for admission in BHMS course. The eligibility of successful candidates for admission in any category (General or Reserved) shall be finally ascertained at the time of admission/counseling. The decision of the Admission Board for the University in case of any conflict if arise in selection to the eligibility of student for the admission shall be final.**
- 1.9 Enclosures:

Following documents must be attached with the form :

- i. Photostat/True copies of the Mark-sheets of passing the Secondary and Senior Secondary School examinations and of the higher examinations, if any, duly attested by a Gazetted Officer only.
 - ii. Attested Photocopy of Secondary School Examination Certificate in support of the Date of Birth, In case if it is not mentioned in the mark-sheet of Secondary School examination.
 - iii. Student appearing for Sr. Sec. School Examination 2016 must attached a photocopy of his/her admit card issued by its respective board for the same examination.
- 1.10 Incomplete forms:
- The form will be considered incomplete, if**
- (a) The candidate has not signed the Photograph properly.
 - (b) The candidate has not got photograph attested by Gazetted officer.
 - (c) The enclosure of documents not attached as given in instruction 1.9 above.
 - (d) If all the columns, meant to be filled by the candidate, are not aptly filled or are not marked "Not Applicable", as the case may be.
 - (e) If any part of the form has been torned out, washed out, burned or removed as the case may be.
 - (f) All the forms incomplete in any manner as explained above shall liable to be rejected.

- 1.11 The complete form (A), (B) & (C) as supplied must be returned after filling in all columns.

Important: It is very essential that all the photographs should be exactly identical (that is, made out of one negative) and be properly pasted as instructed.

- 1.12 The student appearing for Senior Secondary Examination, 2016 can also apply for PHET-2016. Such candidate shall be permitted provisionally to appear at PHET. He/she must submit his/her mark-sheet at the time of counseling, if he/she will be successful in the respective examination.

- 1.13 The candidate must paste the postal stamps on envelopes meant for admission card, counseling letter and the mark- sheet of entrance exam. He/ She should affix stamps of proper value at proper places mentioned on the envelopes. No loose stamps should be sent.
- 1.14 The jurisdiction for legal cases arising out of PHET-2016 shall be limited to the Jaipur only.
- 1.15 A candidate has to deposit the complete fee of the college, within 7 days from the date of declaration of Admission list . The college will confirm the admission only after deposition of the requisite fee.
- 1.16 If a candidate remains absent during the counseling he/she will be given another chance only if any counseling is arranged for vacant seats after exhausting the complete merit list. All such candidates will be again called for counseling in accordance with the merit list prepared by admission board .

2. INSTRUCTIONS FOR FILLING IN FORM 'B'

- a. Use only blue or black ink ball point pen.
- b. Write all letters in Capitals.
- c. Write only one letter or one digit in one square.
- d. Write first name, leave one square blank, then middle name, and leave one square blank and then the Lastname. For example Pramod Kumar Mathur has to be written as:

P	R	A	M	O	D		K	U	M	A	R		M	A	T	H	U	R
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Same method should be followed for writing father's and mother's names.

- e. Do not write Mr./Ms./Mrs. etc. before any name.
- f. Date of Birth: A date, say 31 August, 1998 be written as:

3	1		0	8		1	9	9	8
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- g. For Column No.6, 7, 8 and 10 of Form B Tick mark (✓) the appropriate option.
- h. Percentage of Marks in Column No.9 of Form B, for example 58.33% be entered as

5	8	.	3	3
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- i. Photo: Paste your passport size recent photo at proper place and put your signature with ink pen at its top. Photo should be in a white / light background so that candidate's signature should be clearly visible on it.
- j. Address: Write your address in capital letters, leaving one space blank after each word.
- k. Signature: Sign the Form 'B' at the place provided. The form without signature will be rejected

Note :- Candidate should be very careful in filling up and submitting the application form. If any kind of lapse, irregularity or discrepancy is deducted during the scrutiny (at any stage) your candidature will be rejected even if you come through the final stage of admission process or even at the later stage.

3. SCHEME OF TEST

- 3.1 The test shall have one paper consisting of questions in Physics, Chemistry and Biology (Zoology & Botany) respectively.
- 3.2 The duration of test will be Two and half hours from 10.00 a. m. to 12.30 p.m. which includes the time consumed in signatures, photography and other security measures.
- 3.3 There will be 150 Multiple Choice questions (Physics and Chemistry 40 each; Zoology and Botany 35 each).
- 3.4 Each question carry three marks, thus total marks will be 450.
- 3.5 The question will be in English & Hindi (Dual Language)
- 3.6 The candidate is required to find out the correct answer and mark it on the question booklet by marking tick (✓) the corresponding square against the right option of the question with BLUE OR BLACK FINE TIP BALL PEN ONLY.

4. **MODE OF MARKING:** For each correct answer three marks shall be awarded and there will be no negative marking.

5. **SYLLABUS:** The syllabus for PHET-2016 is given along with the booklet.

6. CONDUCT OF THE TEST:

- (a) The Examination Centre will be Dr. M.P.K. Homoeopathic Medical College, Hospital & Research Centre, Station Road, Jaipur only.
- (b) The examination will be held as per programme mentioned below:

Day & Date	Time	Subject
Sunday 26-06-2016	10.00 am to 12.30 pm	Sec. A: Physics. Sec. B: Chemistry. Sec. C: Zoology. Sec. D: Botany.

- (c) Candidates are required to reach the examination centre 30 minutes before the schedule time. If the candidates do not report in time they will not be allowed to enter in the examination hall.
- (d) The candidates must show, the admit card for entry in the examination hall issued by the HOMOEOPATHY UNIVERSITY, JAIPUR. No entry will be permitted in the examination hall without admit card issued by the Homoeopathy University, JAIPUR.
- (e) A seat with the roll no. will be allotted to each candidate.
- (f) A candidate reaching after 30 minutes of commencement of the test shall not be permitted to take the test.
- (g) A candidate shall not be allowed to carry any type of textual material, printed or written, bits of papers or any other material except the Admit Card inside the Examination hall.
- (h) Mobile phones or electronic devices of any kind are not allowed to be taken in side of examination Hall. Violation may lead to cancellation of candidature of the violates.
- (i) No candidate, without the special permission of the centre superintendent or the invigilator concerned, will leave his/her seat or examination room until the completion of test time. Candidate should not leave the hall without handing over their question booklets to the invigilator on duty.

- (j) **Impersonation** : If at any stage, it is found that any candidate has indulged in any case of impersonation i.e. not matching the photograph/signature/videograph/documents of the candidates etc. he/she will be handed over to the Police and the cases will be dealt as per the Indian Penal Code registered against both the person i.e. (1) The person who is impersonating for someone and (2) The person in place of whom the person was personating. Such candidates will be debarred permanently from taking through PHET, in future.
- (k) Candidate must read the instructions carefully given on the question booklet before attempting to answer the questions.
- (l) The candidate is required to hand over question booklet to the invigilator even if they have not attempted any question and no page/part of the question booklet is to be torn, removed or taken out of the examination centre under any circumstances, failing which the candidature shall be cancelled.
- (m) No re-examination will be held by the university under any circumstances, for those candidates who has not appeared on scheduled date of PHET-2016 for any reason whatsoever.
- (n) The question booklet shall not be subjected to produce before any court (civil or criminal), by the candidate, or anybody else on his/her behalf, before any Internal or External Authority.

7. PROCEDURE TO BE FOLLOWED IN THE EXAMINATION HALL

- 7.1 Each candidate will be given sealed question booklet 5 minutes before schedule time.
- 7.2 Immediately on receipt of the question booklet the candidates will fill in the required particulars on the cover page of the question booklet with Blue or Black fine tip Ball pen only. He/she will not open the seal of question booklet until asked to do so by the invigilator and authority.
- 7.3 Immediately after opening the question booklet the candidate should check it thoroughly and inform the invigilator within 10 minutes regarding any discrepancies found in question booklet. After 10 minutes any claim regarding this may not be entertained.
- 7.4 During the examination time, the invigilator will check admit card of the candidates to verify the identity of each candidate. The invigilator will also put his/her signatures in the place provided on question booklet.
- 7.5 After completing the test, and before handing over the question booklet, the candidate should check again that all the particulars required in the question booklet have been correctly written or filled.
- 7.6 A signal will be given at the beginning of the examination and at half-time. A signal will also be given at the closing time when the candidate must stop marking the response.

8. CAUTION WHILE MARKING AN ANSWER

- A. If more than one square is ticked (✓) it will be considered as a wrong attempting question.
- B. The candidate is advised to decide about the answer before it is marked on the question booklet. He/she must ensure that appropriate square is completely ticked (✓) with BLUE/BLACK FINE TIP BALL PEN only.

- C. Make the marks only at the space provided.
- D. Please do not fold the question booklet or make any stray mark on it.

9. ROUGH WORK:

All rough work is to be done on the last page designed for above purpose on the question booklet, not on question booklet.

10. CAUTION FOR REMOVAL OF PAGE(S) FROM QUESTION BOOKLET:

The candidate will check and ensure that the question booklet contains number of pages as are written on the top of the first page. The candidate shall not remove any page(s) from test booklet and if any page(s) is/are found missing from his/her booklet, then his/her candidature will be cancelled and a criminal case may be got registered against him/her. Candidate may ask for fresh question booklet if he/ she found the booklet containing blank, duplicate, unreadable page(s) or missing within starting 10 minutes of test.

11. DECLARATION OF RESULT:

- 11.1 After evaluation of question booklet, result will be declared Rankwise and Category wise. The ranking shall be solely based on the result of PHET-2016 and shall not be valid for admission. This ranking will be drawn to give an approximate idea to the candidate with regard to his/her relative position only based on PHET-2016.
- 11.2 The result will be declared on 05th July 2016. The result will be available on University website www.homoeopathyuniversity.org
- 11.3 The university will issue the mark sheet to candidates appearing in PHET-2016. The Mark sheets shall be sent by ordinary post at the address written by the candidate on envelop supplied with the form. If any candidate wants to get it by Registered Post, he/she must put postal stamps of Rs.50/- on envelop meant for it.

12. MERIT LIST:

- 12.1 The university shall prepare a list of the applicants for admission out of the successful candidates in the order of merit based on the PHET-2016 rank.
- 12.2 In case of two or more candidates securing equal marks in PHET-2016, their inter se merit will be determined as under.
 - a. Firstly the candidate having higher percentage of marks at 10+2 level in Physics, Chemistry, & Biology (PCB) taken together calculated up to 3 decimal points.
 - b. Then the candidate having higher marks in the subject of biology in qualifying examination i.e. 10+2 or equivalent examination.
 - c. Then the candidate, older in age.

13. RULES OF ADMISSION

A PHET for 100 seats will be conducted for admission in Bachelor of Homoeopathic Medicine and Surgery (BHMS) in accordance with the Act of Homoeopathy University Jaipur Act No 6 of 2010.

A. Reservation of seats:

As per Homoeopathy University Act, Ordinance 32(3) reservation in admission to the University for Scheduled Castes, Scheduled Tribes and Other Backward Classes, women, trans gender and handicapped persons will be provided as per the policy of the state government. In case reserved seats are not filled, the unfilled seats will be transferred to

General category.

- B. Eligibility:** A candidate must fulfil the following conditions for admission;
- (a) If a candidate is citizen of India he/she must have passed Senior Higher Secondary (12th Standard) with Science-Biology from Board of Secondary Education, Rajasthan or recognized equivalent Board thereto. Candidates appearing at the 10+2 examination in 2016 may also appear in the test. Candidate who is not citizen of India must submit equivalent certificate of qualifying exam.
 - (b) Must have completed 17 years of age on or before 31st December 2016
 - (c) The Candidate is required to undergo medical examination before he/she is allowed to join the college after counseling, if the concerned college deems it necessary.

C. Right of admission:

If, for reasons to be recorded in writing, the Admission Board suspects that a particular candidate has obtained a certificate by misrepresenting facts, the matter will be referred to the concerned D.M. On receipt of the enquiry report, the Admission Board will take the final decision regarding the admission of the Candidate.

IMPORTANT DATES & TIMES:

- 1. Last date of receiving application form : 24th June 2016 Upto 3.00 PM
- 2. Date of entrance examination : 26th June 2016 10.00 to 12.30 PM
- 3. Date of declaration of result : 05th July 2016 5.00 PM

INDICATIVE SYLLABUS OUTLINE

PHYSICS

UNIT 1

Dynamics of Rigid Bodies: Rotation of a rigid body, Torque, angular acceleration, angular momentum, moment of inertia, kinetic energy of rotation, M.I. of ring, statement of theorems of

UNIT 2

Electrostatics: Fundamental forces of nature (gravitational, electromagnetic and nuclear), conservation and quantisation of charges. Coulomb's law (vector notation), superposition parallel and perpendicular axes and their simple applications. Compound pendulum as a rigid oscillating body and its time period.

Conservation Laws : Conservation of energy, momentum and angular momentum. Applications of conservation laws.

UNIT 3

Surface Tension : Definition, angle of contact, capillarity, pressure difference across a spherical film. Determination of surface tension by capillary rise and Jaeger's methods.

Gravitation: Newton's law of gravitation, gravitational constant, Satellite motion, Escape velocity.

Simple Harmonic Motion: Displacement, velocity and acceleration.

Their graphical and mathematical representations.

UNIT 4

Kinetic Theory of Gases: Postulates of kinetic theory, derivation of pressure of a gas, interpretation of temperature. Vanderwall's equation.

First Law of Thermodynamics: Dependence of work and heat on path isothermal, isobaric and isometric (constant volume) processes, specific heat of a gas and Mayer's relation.

Radiation: Black body, Kirchhoffs Law, Stefan's Law, Newton's Law of cooling, Black body spectrum, Wien's Law.

UNIT 5

Nature of Light: Light as wave motion, plane and spherical wavefronts, Huyghen's principle, Reflection and refraction at a plane surface, Elementary idea of

electromagnetic nature of light waves, quantum nature of light.

Superposition of Waves: Beats, interference, stationary waves in strings and pipes.

Doppler's Principle: Principle and its application to sound and light waves.

UNIT 6

Interference: Coherent Sources, Fresnel's biprism.

Diffraction: Fresnel's half period zones, diffraction due to a circular obstacle for plane wave on axial points. Rectilinear propagation of light, Zone plate.

X-Ray : Productions-Colidge tube, X-Ray spectra, characteristic X-Ray, uses of X-Ray, Radiation hazards (biological effects.)

principle, Electric Flux, Gauss's law and its application to the field of uniformly charged spherical conductor, Electric potential and field

potential at a point due to an electric dipole, dipole moment.

Bio-Savart's Law : Statement and application for the determination of field along the axis of a circular coil carrying current.

UNIT 7

Potentiometer: Principle and its application to (i) measurement of potential difference, (ii) internal resistance of a cell, (iii) calibration of voltmeter and ammeter.

Electromagnetic Induction: Lenz's law, eddy currents, Faraday's law of electromagnetic induction, rotating coil in a magnetic field, alternating current, transformers, long distance transmission of power, dynamo and motors.

UNIT 8

Alternating Currents : R.M.S. and peak values of current and voltage, Phase relationship between voltage and current in a resistor, inductor and in a capacitor in parallel and in series combinations. Definition of impedance and reactance, expressions for instantaneous and average power in A.C. circuits (No derivations), Power factor, wattless current and Chock coil.

UNIT 9

Positive Ray Analysis: Positive rays, Thomson and Bainbridge mass spectrometer, Isotopes.

Atomic Structure: Bohr's theory of hydrogen spectrum and its short-comings, quantum numbers (total, orbital and magnetic) electron spin, Pauli's exclusion principle, electron configuration in atoms.

Matter Waves: De Broglie hypothesis, Davison and Germer Experiment, explanation of Bohr orbits.

Radioactivity : Characteristics of alpha, beta and gamma rays, Laws of disintegration, half and mean lives, radioisotopes and their uses.

UNIT 10

Magnetic Properties of Matter : Permeability, susceptibility, intensity of magnetisation and relation amongst them. Dia, para and ferromagnetic substances and their behaviour in magnetic field.

Electronics: Thermionic emission, work function, characteristics of a diode, use of diode as a half and full wave rectifier, power supply, use of Triode, static characteristics and parameters, Triode as an amplifier, Semi-conductors and

insulators, energy bands in solids (descriptive idea only), energy gap in insulators, intrinsic and extrinsic semi-conductors (p-type and n-type), PN Junction, Forward and Reverse bias characteristics.

CHEMISTRY

UNIT 1

Development of Classical Model of an Atom: Bohr model of an atom, calculation of Radius of the Bohr's orbit, quantisation of electronic energy

d-Block Elements : General characteristics, Elementary idea about paramagnetism and diamagnetism, different oxidation states of

levels, Spectral evidence for quantisation, Introductory concept of four quantum numbers, Pauli's exclusion principle, Hund's rule, Aufbau principle, concept of the spatial distributions of s and p orbitals.

The Periodic Law: Long form of the Periodic Table, Electronic configuration and the Periodic Table, Periodicity in Properties, Elementary ideas about ionisation potential, electron affinity, electronegativity and atomic radius.

UNIT 2

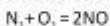
Theory of Chemical Bonding : The ionic bond, characteristic properties of ionic compounds. The covalent bond, characteristic properties of covalent compounds, Introductory concept of overlapping of orbitals and "σ" and "π" bonds, Coordinate bond, Oxidation number, Hybridisation as illustrated by common molecules like :

NH_3 , H_2O , CH_4 , C_2H_4 and C_2H_2

UNIT-3

Chemical Equilibrium and Ionic Equilibria: Generalised

expression of law of mass action; experimental method for verification of mass law, application to systems as



Ionic Equilibria: Arrhenius theory, evidence in favour of dissociation theory, ionic product of water, hydrolysis, relation between hydrolysis constant; ionic product of water and dissociation constant; solubility product and its applications to analytical chemistry.

UNIT 4

Acids and Bases: Hydrogen and hydroxyl ions in aqueous solution, Lewis concept of acids and bases. Theory of indicators for acid, alkali titrations, choice of indicators. Oxidation Reduction, ion electron concept. Balancing of equations by ion electron method.

UNIT 5

Metals: Nature of metallic bond. Occurrence of metals in nature General principles of metallurgy as illustrated by method used for the extraction of iron, copper, aluminium and silver from various types of ores.

s-Block Elements : General characteristics, Trends in variation of properties in periodic table of alkali and alkaline earth metals.

transition elements as illustrated by chromium, manganese and iron.

UNIT 6

Classification of organic compounds, Nomenclature.

Homologous series, Functional groups: Isomerism (Position, chain, functional metamerism).

Preparation, Properties and uses of Benzene (structure elucidation excluded). Nitrobenzene, aniline and phenol.

UNIT 7

General method of preparation, properties and uses of alkanes (upto 5 carbon atoms). Isomerism of butanes and pentanes, Substitution reaction (free radical mechanism). Alkenes : General methods of preparation, properties and uses of Ethylene, Electrophilic addition (mechanism). Markownikoff's rule, peroxide effect.

Alkynes : General method of preparation, properties and uses, Acetylene: Addition reaction Polymerization.

UNIT 8

General methods of preparation, properties and uses of mono, di and tri-halogen derivatives, (excluding unsaturated, upto 2 carbon atoms, Haloform reaction, synthetic uses of alkyl halides, Polarity of carbon-halogen bond : Elementary concept of nucleophilic substitution. General methods of preparation, properties and uses of

the alcohols with reference to methyl and ethyl alcohol : Absolute alcohol and power alcohol, Fermentation.

UNIT 9

General methods of preparation, properties and uses of ether with reference to diethylether. General methods of preparation, properties and uses of aldehydes and ketones with reference to formaldehyde, acetaldehyde and acetone. Polymerization and condensation reaction (No Mechanism). Similarity and distinction between aldehydes and ketones, idea of mechanism of nucleophilic addition to carbonyl groups.

UNIT 10

General methods of preparation, properties and uses of monocarboxylic acids with reference to formic and acetic acids. Derivative of fatty acids; acetyl chloride, acetamide, acetic anhydride and

ethylacetate. General methods of preparation, properties and uses of aliphatic amines with reference to methyl and ethylamines, Urea.

BIOLOGY

(Section A : Botany)

UNIT 1

Diagnostic characters of the major plant groups: procaryota, Eucaryota- Thallophyta (Algae, Fungi), Bryophyta, Pteridophyta, Spermatophyta (Gymnosperms and Angiosperms) ; main branches of Botany.

UNIT 2

Mendel's laws of inheritance : Incomplete dominance, physical and chemical properties; structure and chief functions of the main organelles cell cycle, mitosis, meiosis, structure and chemistry of chromosomes.

UNIT 3

Mendel's laws of inheritance : Incomplete dominance, test cross and back-cross; monohybrid and dihybrid ratios.

UNIT 4

Primary structure and normal secondary growth in dicot root and stem and primary structure in monocot root and stem; internal structure of isobilateral and dorsiventral leaves.

UNIT 5

Lower Plant : Distribution, structure; life-history and systematic position of the following taxa :

- | | |
|---|-------------|
| 1. Viruses, Mycoplasma and Bacteria a general account | |
| 2. Algae | : Ulothrix |
| 3. Fungi | : Albugo |
| 4. Bryophyta | : Riccia |
| 5. Pteridophyta | : Pteridium |

UNIT 6

Higher : Life history of Capsella.

Medical Plant : Medicine obtained, their uses, plant parts from which they are obtained in the following plants:

Rauwolfiaserpentina, *Curcuma longa*, *papaversomniferum*, *Ferulaasafoetida* and *Cinchona officinalis*.

UNIT 7

Diagnostic characteristics, generalized floral diagrams and formulae and 5-10, economically important plants of the following families :

Cruciferae, Malvaceae, Leguminosae, Solanaceae and Liliaceae.

UNIT 8

Aims and scope of ecology : Ecosystem concept : plant adaptation, hydrophytes, halophytes xerophytes and mesophytes.

UNIT 9

Elementary principles of plant physiology-I : Osmosis, Absorption of water passive and active : ascent of sap transpiration and guttation, Photosynthesis : Mechanism and main factors affecting it.

UNIT 10

Elementary principles of plant physiology- II: Osmosis respiration-types : fermentation, respiratory quotient glycolysis (EMP pathway) ; Krebs cycle (main step only), oxidative phosphorylation; factors effecting respiration, fermentation, growth hormones; plant movements.

(Section B : Zoology)

UNIT 1

Protoplasm : Inorganic constituents, Organic, constituents (carbohydrates, lipids, proteins, nucleic acids).

UNIT 2

Ultra structure of a typical animal cell. Functions of cell organelles, Cell division : mitosis and meiosis. Glycolysis and Krebs cycle.

UNIT 3

Habits, habitat, structure and life processes of Amoeba. Habitat, habits and structure of plasmodium including life cycle.

UNIT 4

Habits, habitat, structure and life cycle of Hydra and Ascaris.

UNIT 5

Habits, habitat, structure and life processes of Pheretima and Periplaneta.

UNIT 6

Development Biology : (a) Basic features of Development in animals, formation of gametes, structure of ovum, type of eggs, examples of insect, frog, chick and Mammalian eggs; structure of sperm; fertilization; cleavage and significance; types of gastrulation, significance of gastrulation.

UNIT 7

Anatomy, history and Physiology of the following in Rabbit :

1. Integumentary system
2. Digestive system
3. Respiratory system
4. Circulatory system
5. Musculature of limbs

UNIT 8

Anatomy and physiology of the following in rabbit

6. Excretory system
7. Reproductive system
8. Elementary idea of different endocrine glands
9. Receptor organs (eye and ear)
10. Nervous system: Central nervous system (Brain and spinal cord), Peripheral nervous system (Cranial and spinal nerves), autonomic nervous system.

UNIT 9

Classification of animal Kingdom, mentioning only the general characteristics of the following phyla and classes with example (avoid details) :

Non-Chordata :

- (i) Protozoa Sarcodina Flagellata, Sporozoa, Ciliata.
- (ii) Porifera Calcarea, Hexactinellida, Demospongia.
- (iii) Coelenterata Hydrozoa, Scyphozoa, Actinozoa.
- (iv) Platyhelminthes Turbellaria, Trematoda, Cestoda.
- (v) Annelida Oligochaeta, Arachnida, Myriapoda, Insecta.
- (vi) Echinodermata Asteroidea, Crinoidea.
- (viii) Mollusca Bivalvia, Gastropoda, Cephalopoda.
- (ix) Minor phyla Ctenophora.

UNIT 10

General characters of the phylum Chordata and classification upto classes with Characters and examples (avoid details)

- (i) Protochordata Hemi, Uro and Cephalo Chordata.
- (ii) Pisces Elasmobranchii and Teleosts.
- (iii) Amphibia
- (iv) Reptilia
- (v) Aves
- (vi) Mammalia

Note : This is just an indicative syllabus. Questions may be asked beyond its scope in all Subjects.