**DELHI PUBLIC SCHOOL**
**MATHURA ROAD, NEW DELHI - 110003**

**FORTNIGHTLY BREAK UP OF THE SYLLABUS**

**Subject : Biology**
**Class - XII**
**Academic Session : 2018 - 2019**

| S. No. | Fortnight Dates | Total No of Days | Main Topic | Sub - topic / Details of Chapter | Period Details | Total Periods | Assignment Details | | Monday Test Details | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 1 | 19th March – 28th March | 8 | Ch. 1 – Reproduction in Organisms | | | 14 | | | | |
| | | | | Life Spans of different organisms ; Asexual vs Sexual Reproduction ; Various modes of asexual reproduction | 2 | | | | | |
| | | | | Pre - Fertilization Events ; Syngamy | 2 | | | | | |
| | | | | Post - Fertilization Events | 1 | | | | | |
| | | | | Discussion of Textbook Questions | 1 | | | | | |
| | | | Ch. 5 - Principles of Inheritance and Variation (Till Test Cross) | | | | | | | |
| | | | | Definition of the various genetic terms | 3 | | | | | |
| | | | | Contrasting traits studied by Mendel in Pea ; Law of Dominance | 3 | | | | | |
| | | | | Law of Segregation ; Test Cross | 2 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 2 | 2nd April - 13th April | 11 | Ch. 5 - Principles of Inheritance and Variation (from Incomplete Dominance onwards) | | | 17 | | | | |
| | | | | Incomplete Dominance | 1 | | | | | |
| | | | | Law of Independent Assortment | 2 | | | | | |
| | | | | Codominance and multiple allelism | 2 | | | | | |
| | | | | Chromosomal Theory of Inheritance | 1 | | | | | |
| | | | | Drosophila melanogaster suitable for genetic studies | 1 | | | | | |
| | | | | Linkage and Recombination | 4 | | | | | |
| | | | | Sex Determination | 4 | | | | | |
| | | | LAB. 1 | To comment upon the exercises of hybridisation (emascuation, tagging & bagging) | 1 | | | | | |
| | | | LAB. 2 | To study the flowers adapted to pollination by different agencies | | | | | | |
| | | | LAB. 3 | To study various stages of meiosis through permanent slides | 1 | | | | | |
| 3 | 16th April – 27th April | 11 | Ch. 5 - Principles of Inheritance and Variation (from Pedigree Analysis onwards) | | | 17 | | | | |
| | | | | Mutations | 1 | | | | | |
| | | | | Pedigree Analysis | 2 | | | | | |
| | | | | Problems related to Pedigree Analysis | 3 | | | | | |
| | | | | Gene Disorders | 5 | | | | | |
| | | | | Chromosomal disorders | 3 | | | | | |
| | | | LAB. 4 | To study the Mendelian Inheritance using seeds of different colours / sizes of pea plant | 1 | | | | | |
| | | | LAB. 5 | To study the prepared pedigree charts for genetic traits such as blood groups, colour blindness | 1 | | | | | |
| | | | LAB. 6 | To study pollen germination on a slide | 1 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 4 | 1st May – 18th May | 15 | Ch. 3 – Human Reproduction | | | 24 | **04.05.18** | **Ch. 1 & Ch. 5** | **14.05.18** | **Ch. 1 & Ch. 5** |
| | | | | Male Reproductive System | 3 | | | | | |
| | | | | Female Reproductive System | 3 | | | | | |
| | | | | Gametogenesis | 3 | | | | | |
| | | | | Menstrual Cycle | 3 | | | | | |
| | | | | Fertilization ; Implantation | 2 | | | | | |
| | | | | Pregnancy and Embryonic Development | 2 | | | | | |
| | | | | Parturition and Lactation | 1 | | | | | |
| | | | Ch. 4 - Reproductive Health | | | | | | | |
| | | | | Birth Control Methods | 3 | | | | | |
| | | | | Medical Termination of Pregnancy ( MTP ) ; Sexually Transmitted Diseases ( STDs ) | 1 | | | | | |
| | | | | Assisted Reproductive Technologies ( ARTs ) | 1 | | | | | |
| | | | LAB. 7 | To study the presence of suspended particulate matter at the two widely different sites | 2 | | | | | |
| 5 | 21st May – 25th May | 5 | Ch. 13 - Organisms and Populations | | | 10 | | | | |
| | | | | Major abiotic factors ; Responses to abiotic factors and adaptations | 2 | | | | | |
| | | | | Population growth models and attributes | 2 | | | | | |
| | | | | Population Interactions | 3 | | | | | |
| | | | Ch. 10 – Microbes in Human Welfare | | | | | | | |
| | | | | Microbes in household and industrial products | 1 | | | | | |
| | | | | Microbes in production of Antibiotics, Beverages, Chemicals and Enzymes | 1 | | | | | |
| | | | | Microbes in Sewage Treatment & Bio Control Agents | 1 | | | | | |

**Completion of Syllabus: 25th May 2018**

**Summer Vacations: 26th May 2018 - 28th June 2018**

**Ist Term Exams: 29th June - 9th July 2018**

| S. No. | Fortnight Dates | Total No of Days | Main Topic | Sub - topic / Details of Chapter | Period Details | Total Periods | Assignment Details | | Monday Test Details | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 6 | 10th July – 31st July | 16 | Ch. 6 – Molecular Basis of Inheritance (till Mutations) | | | 25 | | | | |
| | | | | Structure of DNA, Nucleosome Model | 4 | | | | | |
| | | | | Griffith's Experiment | 2 | | | | | |
| | | | | Hershey and Chase Experiment | 2 | | | | | |
| | | | | Properties of genetic material ; DNA vs RNA | 2 | | | | | |
| | | | | Semiconservative mode of DNA Replication; Meselson and Stahl's Experiment | 3 | | | | | |
| | | | | Mechanism of DNA Replication | 2 | | | | | |
| | | | | Transcription | 3 | | | | | |
| | | | | Genetic Code ; Mutations | 3 | | | | | |
| | | | LAB. 8 | To prepare a temporary acetocarmine stained mount of onion root tips to study various stages of mitosis. | 2 | | | | | |
| | | | LAB 9 | To determine population frequency of different plant species by quadrat method | 1 | | | | | |
| | | | LAB 10 | To determine population density of different plant species by quadrat method. | 1 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 7 | 1st Aug – 18th Aug | 13 | Ch. 6 – Molecular Basis of Inheritance (from Protein Synthesis onwards) | | | 21 | | | | |
| | | | | Protein Synthesis | 3 | | | | | |
| | | | | Regulation of gene expression | 2 | | | | | |
| | | | | DNA Fingerprinting & Human Genome Project | 4 | | | | | |
| | | | Ch. 2 - Sexual Reproduction in Flowering Plants | | | | | | | |
| | | | | Details of the male reproductive structures and microsporogenesis | 2 | | | | | |
| | | | | Details of the female reproductive structures and megasporogenesis | 2 | | | | | |
| | | | | Pollination, Agents of Pollination | 3 | | | | | |
| | | | | Outbreeding devices ; pollen - pistil interaction ; Artificial Hybridisation | 2 | | | | | |
| | | | LAB. 11 | To study the physical characteristics & pH of different soil samples | 1 | | | | | |
| | | | LAB. 12 | To study the water holding capacity of different soil samples. | 1 | | | | | |
| | | | LAB. 13 | To study the moisture content of soil by water loss method | 1 | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 8 | 20th Aug – 31st Aug | 9 | Ch. 2 - Sexual Reproduction in Flowering Plants (From Double Fertilization onwards) | | | 14 | 24.08.18 | Ch. 6: Molecular basis of Inheritance | | |
| | | | | Double Fertilization ; Development of embryo and endosperm | 2 | | | | | |
| | | | | Seed & Fruit | 2 | | | | | |
| | | | | Apomixis and Polyembryony | 1 | | | | | |
| | | | Ch. 9 – Strategies for Enhancement in Food Production | | | | | | | |
| | | | | Animal Breeding | 2 | | | | | |
| | | | | Plant Breeding | 2 | | | | | |
| | | | | Single Cell Protein ; Tissue Culture | 2 | | | | | |
| | | | LAB 14 | To extract DNA from pea seeds & strawberry | 2 | | | | | |
| | | | LAB 15 | To study and identify the stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides. | 1 | | | | | |
| | | | LAB 16 | To study T.S. of Blastula through permanent slide. | | | | | | |

**Completion of Syllabus: 31st August 2018**
**Revision - 4th September - 6th September 2018**
**Mid Term Exams: 12th September - 22nd September 2018**
**Practical Exams: 7th Sept, 8th Sept, 24th Sept, 25th Sept 2018 (4 Days)**
**PTM: 13th October 2018**

| S. No. | Fortnight Dates | Total No of Days | Main Topic | Sub - topic / Details of Chapter | Period Details | Total Periods | Assignment Details | | Monday Test Details | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 9 | 26th Sept – 17th Oct | 15 | Ch. 11 – Biotechnology : Principles and Processes | | | 24 | **10.10.18** | **Ch. 11** | | |
| | | | | Principles of Biotechnology | 2 | | | | | |
| | | | | Restriction Enzymes | 2 | | | | | |
| | | | | Gel Electrophoresis | 1 | | | | | |
| | | | | Vectors | 2 | | | | | |
| | | | | Ti - Plasmid | 2 | | | | | |
| | | | | Polymerase Chain Reaction ( PCR ) | 1 | | | | | |
| | | | | Bioreactors and Downstream Processing | 1 | | | | | |
| | | | | Steps of rDNA Technology | 2 | | | | | |
| | | | Ch. 12 – Biotechnology and its Applications | | | | | | | |
| | | | | Biotechnological Applications in Agriculture | 3 | | | | | |
| | | | | Biotechnological Applications in Medicine | 2 | | | | | |
| | | | | Transgenic Animals | 1 | | | | | |
| | | | | Ethical Issues | 1 | | | | | |
| | | | LAB 17 | To study the activity of salivary amylase at normal temperature & pH. | 2 | | | | | |
| | | | LAB 18 | To study the effect of different temperatures on the activity of salivary amylase at normal pH. | 2 | | | | | |

**Dusshera Break: 18th October - 21st October 2018**

| S. No. | Fortnight Dates | Total No of Days | Main Topic | Sub - topic / Details of Chapter | Period Details | Total Periods | Assignment Details | | Monday Test Details | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 10 | 22nd Oct - 3rd Nov | 10 | Ch. 7 – Evolution | | | 16 | | | **22.10.18** | **Ch. 11** |
| | | | | Origin of Life Forms | 1 | | | | | |
| | | | | Evidences of Evolution | 1 | | | | | |
| | | | | Adaptive Radiation | 1 | | | | | |
| | | | | Hardy - Weinberg's Principle | 1 | | | | | |
| | | | | Evolution of plants, animals and man | 1 | | | | | |
| | | | Ch. 14 - Ecosystem | | | | | | | |
| | | | | Ecosystem - Structure and Functions ; Productivity ; Decomposition | 2 | | | | | |
| | | | | Energy Flow ; Ecological Pyramid ; Ecological Succession | 3 | | | | | |
| | | | | Nutrient Cycling | 2 | | | | | |
| | | | LAB 19 | To study the effect of three different pH on the activity of salivary amylase on starch at normal temperature. | 2 | | | | | |
| | | | LAB 20 | To identify common disease causing organisms like *Ascaris* , *Entamoeba* , *Plasmodium* and ringworm. Comment on the symptoms of diseases they cause through permanent slides or specimens. | 1 | | | | | |
| | | | LAB 21 (A) | To study the pH and extent of clarity of the given samples of water. | | | | | | |
| | | | LAB 21 (B) | To study the presence of living organisms in the given samples of water. | 1 | | | | | |

**Diwali Break: 5th November - 11th November 2018**

| S. No. | Fortnight Dates | Total No of Days | Main Topic | Sub - topic / Details of Chapter | Period Details | Total Periods | Assignment Details | | Monday Test Details | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Date | Chapter | Date | Chapter |
| 11 | 12th Nov - 7th Dec | 18 | Ch. 8 – Human Health and Disease | | | 28 | | | | |
| | | | | Common Diseases in Humans | 3 | | | | | |
| | | | | Innate Immunity ; Acquired Immunity and Vaccination | 2 | | | | | |
| | | | | Immune Disorders ; Acquired Immuno Deficiency Syndrome ( AIDS ) | 2 | | | | | |
| | | | | Cancer | 2 | | | | | |
| | | | | Drugs and Alcohol Abuse | 2 | | | | | |
| | | | Ch. 15 – Biodiversity and Conservation | | | | | | | |
| | | | | Biodiversity & its Patterns | 2 | | | | | |
| | | | | Loss of Biodiversity | 3 | | | | | |
| | | | | Conservation of Biodiversity | 2 | | | | | |
| | | | Ch. 16 - Environmental Issues | | | | | | | |
| | | | | Air Pollution and its control | 2 | | | | | |
| | | | | Water Pollution and its control | 2 | | | | | |
| | | | | Solid Waste and Radioactive Waste | 2 | | | | | |
| | | | | Global Warming and Deforestation | 2 | | | | | |
| | | | LAB. 22 (A) | To study any two plants found in the xerophytic conditions and comment upon their adaptations. | 1 | | | | | |
| | | | LAB. 22(B) | To study any two animals found in the xerophytic conditions and comment upon their adaptations. | | | | | | |
| | | | LAB. 23(A) | To study any two plants found in the aquatic conditions and comment upon their adaptations. | 1 | | | | | |
| | | | LAB. 23(B) | To study any two animals found in the aquatic conditions and comment upon their adaptations. | | | | | | |

**Completion of Syllabus by 7th December, 2018**

**Revision : 10th Dec & 11th Dec 2018**

**12th Dec - 15th Dec 2018 : Pre-Board Practicals for Class - XIIth**

**Pre-Board Exam : 20th Dec 2018 - 14th Jan 2019**

**Winter Break : 31st Dec 2018 - 9th Jan 2019**

**PTM : 28th Jan 2019 (Pre-Board Exam)**