

CLASS-XII
Subject – Biology
Semester –I

Theory Marks -70
CCE/Internal Assessment -10
Total-80

Structure of Question Paper

1. All questions are compulsory.
2. Q.1 to 8 each will be of 1 marks.
3. Q.9 to 15 each will be of 2 marks.
4. Q.16 to 23 each will be of 3 marks.
5. Q.24 to 27 each will be of 6 marks.

Theory

Units under syllabus of semester-1

		MM-70
Unit –I	Sexual Reproduction	38
Unit-II	Genetics and Evolution	32

	Total Marks	70

Unit –I Sexual Reproduction

- Pollination and fertilization in flowering plants
- Development of seeds and fruits.
- Human reproduction: Reproductive system in Male and female, menstrual cycle, production of gametes, fertilization, implantation, embryo development, pregnancy and parturition.
- Reproductive health, birth control, contraception and sexually transmitted diseases.

Unit-II Genetics and Evolution

- Mendelian inheritance
- Chromosome theory of inheritance, deviations from mendelian ratio (gene interaction – incomplete dominance, co-dominance, complementary genes, multiple alleles).
- Sex determination in human beings: XX, XY.
- Linkage and crossing over.
- Inheritance pattern of haemophilia and blood group in human beings.
- DNA: replication, transcription, translation.
- Gene expression and regulation.
- Genome and Human Genome Project.
- DNA fingerprinting.
- Evolution: Theories and evidences.

Practical
Syllabus of semester -1

1. Study of pollen grains on a slide.
2. Study of flowers adapted to pollination by different agencies (wind, insect)
3. Study of pollen germination on a slide.
4. Study and identify stages of gamete development i.e. T.S of testis and T.S of ovary through permanent slides.
5. Study meiosis in Onion bud cell or grasshopper testis through permanent slides.
6. Study of T.S of blastula through permanent slide.
7. Study mendelian inheritance using seeds of different colour / size of any plant.
8. Study prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, window's peak, colour blindness.
9. Exercise on controlled pollination –Emasculation, tagging and bagging.
10. Study analogous and homologous organs in various plants and animals.

CLASS-XII
Subject – Biology
Semester –II

Theory Marks -70
Practical Marks -30
CCE/Internal Assessment -20
Total-120

Structure of Question Paper.

1. All questions are compulsory.
2. Q.1 to 8 each will be of 1 marks.
3. Q.9 to 15 each will be of 2 marks.
4. Q.16 to 23 each will be of 3 marks.
5. Q.24 to 27 each will be of 6 marks.

Theory

Units under syllabus of semester-2

		MM-70
Previous Semester Objective Questions		05 Marks
Unit-III	Biology and Human Welfare	23
Unit-IV	Biotechnology and its Application	19
Unit-V	Ecology and Environment	23
Total Marks		70

Unit III : Biology and Human Welfare

- Animal husbandry
- Basic concepts of immunology, vaccines.
- Pathogens and parasites.
- Plant breeding, tissue culture, food production.
- Microbes in household food processing, industrial production, sewage treatment and energy generation.
- Cancer and AIDS.
- Adolescence, drugs and alcohol abuse.

Unit IV: Biotechnology and its Application

- Recombinant DNA technology.
- Application in Health, Agriculture and Industry.
- Genetically modified (GM) organisms; biosafety issues.
- Insulin and Bt cotton.

Unit V Ecology and Environment

- Ecosystem: components, types and energy flow.
- Species, population and community.
- Ecological adaptation.
- Centres of diversity and conservation of biodiversity, National Parks and Wild Life Sanctuaries.
- Environmental issues.

Practical

Syllabus of semester -2

1. Collect and study soil from different sites and study them for texture and moisture content.
2. Study the pH and water holding capacity of soil correlate with the kinds of plants found in them.
3. Collect water from different water bodies around you and study them for pH clarity and presence of any living organisms.
4. Study the presence of any suspended particulate matter in air at the two widely different sites.
5. Study of plant population density by quadratic method.
6. Study of plant population frequency by quadrate method.
7. Study of plants and animals found in xerophytes conditions. Comment upon their adaptation ecosystem.
8. Study plants and animals found in aquatic conditions. Comment upon their adaptation ecosystem.
9. To identify common disease causing organisms like Ascaris, Endameba, Plasmodium, ringworm. Comment on symptoms of diseases that they cause through permanent slides or specious.

M	Q	TM
1	X 8	= 8
2	X 7	= 14
3	X 8	= 24
6	X 4	= 24

Total	=	70

Note: The practical examination by the Board will be conducted at the end of semester II from the whole syllabus.