

Blue Print of Distribution of Marks
Class XII : Biology : Half-Yearly Exam : 2023-24 : Marks 70

Chapters/ Units	Topics 1 Mark	MCQ 1 Mark	VSA 1 Mark	SA-1 2 Marks	SA-II 3 Marks	LA-I 4 Marks	LA-II 5 Marks	Total Marks	Unit Total
VI Reproduction	Ch-2 : Sexual Reproduction in Flowering Plants	1x1	1x1	2x1	3x1	4x1	-	11	28
	Ch-3 : Human Reproduction	1x1	1x1	2x2	-	-	5x1	11	
	Ch-4 : Reproductive Health	1x2	1x2	2x1	-	-	-	06	
VII Genetics & Evolution	Ch-5 : Principles of Inheritance & Variation	1x1	1x1	-	3x1	4x1	5x1	14	31
	Ch-6 : Molecular Basis of Inheritance	1x2	1x1	2x1	3x1	4x1	-	12	
	Ch-7 : Evolution	1x2	1x1	2x1	-	-	-	05	
VIII Biology & Human Welfare	Ch-8 : Human Health and Diseases	1x1	1x1	2x1	3x1	-	-	07	11
	Ch-10 : Microbes in Human Welfare	-	1x2	2x1	-	-	-	04	
Total		1x10 (10)	1x10 (10)	2x8 (16)	3x4 (12)	4x3 (12)	5x2 (10)	70 (37)	70

Class - XII (2023-2024)
Subject : Biology (Theory)
Total Marks - 70
Course Structure

Unit	Title	Marks
VI	Reproduction	16
VI	Genetics and Evolution	20
VII	Biology and Human welfare	12
IX	Biotechnology and its Applications	12
X	Ecology and Environment	10
	Total	70

Blue Print of Distribution of Marks
Sub : Biology
Class-XII
Pre-Board & Board Final Exam. (2023-24)

Unit	Chapter		MCQ (1)	VSA (1)	SA I (2)	SA-II (3)	LA I (4)	LA-II (5)	Total Marks	Unit Total
VI	2.	Sexual Reproduction in Flowering plants	1	1			1		6	16
	3.	Human Reproduction		1				1	6	
	4.	Reproductive Health	1			1			4	
VII	5.	Principle of inheritance and Variation	1	1		1			5	20
	6.	Molecular Basis of inheritance.	1			1		1	9	
	7.	Evolution	1	1	2				6	
VIII	8.	Human health and diseases		1	1		1		7	12
	10.	Microbes & Human welfare	2	1	1				5	
IX	11.	Biotechnology, Principle and Processes	1		1		1		7	12
	12.	Biotechnology & its Application	1	2	1				5	
X	13.	Organisms and Population.		1		1			4	10
	15	Biodiversity & Conservation	1	1	1				4	
	16	Environmental issues.				1			2	
			1x10 (10)	1x10 (10)	2x8 (16)	3x4 (12)	4x3 (12)	5x2 (10)	70 (37)	70

NB: Question setter will include 2 Nos 'OR' Questions

in LA I Section and another 2 Nos "OR" Questions

In La II Section "OR" Questions must be selected from same unit or Chapter of Syllabus (2023-24

* All Chapters are included in Pre-Board and Final Exam.

Couse Structure
Sub : Biology (Theory)
Class - XII Pre-Board/Board Final Exam -2023-2024
Unit - VI Reproduction

Chapter 2: Sexual reproduction in flowering Plants.

Flowering Flower structure, development of male and female gametophyte; Pollination-types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events- development of Endosperm and Embryo, development of seed and formation of fruit; special modes; apomixis, Partheno Carpy, polyembryony, Significance of seed dispersal and fruit formation.

Chapter 3: Human Reproduction :

Male and female reproductive. system; microscopic anatomy of Testis and ovary; gametogenesis-Spermatogenesis Oogenesis; menstrual cycle; fertilization, Embryo development upto blastocyst formation implantation; pregnancy and ptacenta formation (elementary idea) Parturition Lactation (Elementary idea)

Chapter-4. Reproductive Health,

Need for reproductive health and prevention of sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical Termination of pregnancy (MTP); amino centesis, infertility and assisted reproductive technique technologies- IVF, ZIFT, GIFT (Elementary general awarness)

Unit-VII Genetics and Evolution

Chapter -5 : Principles of inheritance and Variation

Heredity and variation: Mendelian inheritance; deviation from Mendelism- incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy, elementary idea of polygenic inheritance, chromosomal theory of inheritance, chromosome and genes, Sex determination in humans, birds and honey bee; Linkage and Crossing over, Sex-linked inheritance - haemophilia, Colour blindness, Mendelian disorders in humans - thalassemia, chromosomal disorders in humans: Down's syndrome, Turner's Syndrome and Klinefelter's Syndromes

Chapter-6-Molecular Basis & inheritance

Search for geneticmaterial and DNA as genetic material; Structure of DNA and RNA, DNA packaging, DNA- replication, Central dogma: Transcription, genetic code, Translation, gene expression and regulation - Lac operon, Genome, Human genome project, DNA fingerprinting.

Chapter-7: Evolution:

Origin of life; Biological evolution and evidences for biological evolution (Paleontology, Comparative anatomy Embryology and molecular evidences); Darwin's contribution, modern Synthetic theory of Evolution, Mechanism of evolution variation (Mutation and recombination) and natural selection with example, types of natural selection, gene flow and genetic drift; Hardy Weinberg's principle, Adaptive radiation; human evolution.

Unit VIII. Biology and Chapter Human welfare.

Chapter 8: Human Health and Diseases:

Pathogen; parasites causing human diseases (Malaria, dengue, Chikungunya, filariasis, ascariasis, typhoid, pneumonia, Common cold, amoebiasis, ring worm) and their Control; Basic concept of immunology-vaccines cancer, HIV and AIDS, Adolescence-drug and alcohol abuse.

Chapter-10: Microbes in Human Welfare,

Microbes in food processing, industrial Production, Sewage treatment, energy, generation and microbes as bio-control agents and bio-fertilizers, Antibiotic production and judicious use.

Unit - IX, Biotechnology and its Applications.

Chapter -11: Biotechnology-principles and processes.

Genetic Engineering, Bioprocess Engineering, Recombinant DNA Technology.

Chapter-12: Biotechnology and its Application :

Application of Biotechnology in health and Agricultures, Human insulin, gene therapy, genetically modified organism -Bt crops; transgenic animal, biosafety issues, biopiracy and patents (vaccine production and stem cell excluded) technology

UNIT- X Ecology and Environment

Chapter 13 : Organism and population:

Population interactions- mutualism, competition, predation, parasitism, population attributes- growth, birth rate, death rate, age distribution (Organisms and its environment, Major Abiotic factor, Response to Abiotic factors, Adaptation Excluded from this chapter)

Chapter-15: Biodiversity and conservation:

Biodiversity concept, patterns, importance Loss of biodiversity, biodiversity conservation hot spot, Endangered organisms, extinction, Red data book, Sacred Groves

Chapter-16: Environmental issues

Air pollution and its Control; water pollution and its control: A case study. of integrated waste water treatment, Solid wastes, case study of remedy for plastic wastes; Radioactive wastes; Green house effect global warming; ozone depletion in the stratosphere; Deforestation; case study of people's participation in conservation of forest.

Class XII
Subject: Biology Practical
2023-24

List of Experiments

1. Major Experiments:

- I. To isolate DNA from available plant material such as spinach, green pea seeds, papaya etc. Write procedure, observation and inference.
- II. To collect soil at least from two different sites and study them for their water holding capacity. Write procedure, observation and inference.
- III. To study the effect of two different temperatures on the activity of salivary amylase on starch. Write procedure, observation and inference.

2. Minor Experiments:

- I. To study plant population density by Quadrant method.
- II. To study plant population frequency by Quadrant method.

3. Slide Preparation:

- I. To prepare a temporary mount of onion root tip to study mitosis. Draw and label Metaphase or Anaphase in it [Slide preparation-3; Drawing-1; Labelling-1].
- II. To prepare a temporary mount on slide to observe pollen germination on a slide by drawing a labelled diagram [Slide preparation-3; Drawing-1; Labelling-1].

4. Spotting [Mark any one from 3 (1 & 2) as A or B]

A and B Species

1. Any wind pollinated flower.
2. Any insect pollinated flower.
3. Pollen germination on stigma through a permanent slide.
4. Identification of stages of gamete development i.e. T.S. of ovary through permanent slide (grasshopper, mice).
5. T.S. of mammalian blastula through permanent slide.

C and D Species

- * Common disease causing Organism: Ascaris, Entamoeba, Plasmodium, any fungus causing ring worm through permanent slide/models/virtual image/Specimen. Comment on symptoms.

Distribution of Marks of Practical Examination
(Half Yearly/Pre- Board/ Board final)

One Major experiment	6 marks
One Minor Experiment	5 marks
One slide preparation	5 marks
Spotting	4 marks
Viva	2 marks
Lab note books	3 marks
Attendance	5 marks
Total :-	30 marks