

SUBJECT: BIOLOGY (BIO1)**CLASS XI
SEMESTER I****THEORY****FULL MARKS – 35****(MCQ Type Question)**

UNIT	Topic	No of periods assigned	Marks
	SEMESTER 1	60	35
1	DIVERSITY OF LIVING ORGANISM	20	12
	Chapter – 1 : Science of Life	3	
	Chapter – 2: Taxonomy	3	
	Chapter – 3: Classification of Living Organisms	12	
	Chapter – 4: Microbiology	2	
2.	STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS	10	06
	Chapter – 5: Structural Organization in Plants	8	
	Chapter – 6: Structural Organization in Animals	2	
3	CELL STRUCTURE AND FUNCTION	13	07
	Chapter 7: Cell	7	
	Chapter – 8: Biomolecules	3	
	Chapter – 9: Cell division	3	
4.	PLANT PHYSIOLOGY	17	10
	Chapter – 10: Transport in plants	3	
	Chapter – 11: Mineral nutrition	2	
	Chapter – 12: Photosynthesis	3	
	Chapter – 13: Respiration	4	
	Chapter – 14: Plant growth and development	5	

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
	SEMESTER I	
1	DIVERSITY OF LIVING ORGANISM	
	Chapter – 1 : Science of Life	
	1. Definition and characteristics of life.	2
	2. Biological Sciences – its application and relationship with other sciences.	1
	Chapter – 2: Taxonomy	
	1. Need for classification, types	1
	2. Taxonomy and systematics,	1
	3. Binomial nomenclature, Rules	1

	Chapter – 3: Classification of Living Organisms	
	1. Five kingdom classification; Salient features of Monera, Protista and Fungi.	3
	2. Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiospermae (three to five salient and distinguishing features and at least two examples of each category);	4
	3. Salient features and classification of animals - non chordates up to phyla level and chordates up to class level (three to five salient features and at least two examples of each category).	5
	Chapter – 4: Microbiology	
	1. Virus - general concept	1
	2. Common viral diseases (plants and animals)	1
2	STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS	
	Chapter – 5: Structural Organization in Plants	
	1. Plant tissue – meristematic and permanent tissue – types with characterization and functions.	2
	2. Anatomy and functions of different parts of flowering plants: root, stem and leaf.	3
	3. Functions of different parts and types of inflorescences, flower, fruit and seed.	3
	Chapter – 6: Structural Organization in Animals	
	1. Animal tissue- types with functions and examples.	2
3	CELL STRUCTURE AND FUNCTION	
	Chapter7: Cell	
	1. Ultrastructure and function of cell membrane, cell wall, endoplasmic reticulum, Golgi bodies, lysosomes, mitochondria, ribosomes, plastids, centrioles, vacuoles, nucleus	7
	Chapter – 8: Biomolecules	
	1. Structure and function in outline of proteins, carbohydrates, lipids, nucleic acids;	2
	2. Enzymes- types, properties	1
	Chapter – 9: Cell division	
	1. Cell cycle,	1
	2. Meiosis and its significance	2
4	PLANT PHYSIOLOGY	
	Chapter – 10: Transport in plants	
	1. Diffusion, Osmosis, Turgidity, plasmolysis	1
	2. Active transport; Water and ion absorption (Active and Passive)	1

	3. Transport of food- phloem transport	1
	Chapter – 11: Mineral nutrition	
	1. Essential minerals, macro- and micronutrients and their role; deficiency symptoms;	1
	2. Hydroponics and aeroponics- definition and use.	1
	Chapter – 12: Photosynthesis	
	1. Photosynthesis as a mean of autotrophic nutrition;	1
	2. Photochemical and biosynthetic phases of photosynthesis (in brief).	2
	Chapter – 13: Respiration	
	1. Cellular respiration - glycolysis, fermentation, TCA cycle and electron transport system (in brief).	4
	Chapter – 14: Plant growth and development	
	1. Germination of seeds;	1
	2. Growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;	2
	3. seed dormancy; vernalisation; photoperiodism	2

SEMESTER II

THEORY

FULL MARKS – 35

(SAQ AND LAQ Type Question)

UNIT	Topic	No of periods assigned	Marks
1.	HUMAN PHYSIOLOGY	84	35
	Chapter – 1: Digestion and absorption:	12	05
	Chapter – 2: Breathing and Respiration	12	05
	Chapter – 3: Body fluids and circulation	16	05
	Chapter – 4: Excretory products and their elimination	10	05
	Chapter – 5: Locomotion and movement	12	05
	Chapter – 6: Neural control and coordination	12	05
	Chapter – 7: Chemical coordination and regulation	10	05

DETAIL SYLLABUS

UNIT	Topic / Sub Topic	No of periods assigned
1	HUMAN PHYSIOLOGY	
	Chapter – 1: Digestion and absorption:	
	1.Description of Alimentary canal	2
	2.Mechanism of digestion and absorption	3
	3.Calorific values of proteins, carbohydrates and fats;	3
	4. Nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhea; Obesity and BMR index.	4
	Chapter – 2: Breathing and Respiration	
	1. Respiratory system in humans (Respiratory Tract and Lung)	4
	2.Mechanism of breathing and its regulation in humans - exchange of gases	3
	3.Respiratory volumes – TV, IRV, ERV, VC, RV, Dead space air	3
	4.Disorders of respiratory system – asthma, emphysema, occupational respiratory disorders	2
	Chapter – 3: Body fluids and circulation	
	1.Composition of blood, blood groups, coagulation of blood	2
	2.Composition of lymph and its function	1
	3.Human circulatory system - Structure of human heart and blood vessels	3
	4.Cardiac cycle, cardiac output,;	3
	5.Blood pressure, (Definition and types)	2
	6.Blood transfusion and storage	2
	7.ECG (Operation and significance)	1
	8. Disorders: Anaemia, Arrhythmia, Heart attack, heart block	2
	Chapter – 4: Excretory products and their elimination .	
	1.Kidney Structure and function	4
	2.Urine formation, normal and abnormal composition	4
	3.Dialysis and artificial kidney	2
	Chapter – 5: Locomotion and movement	
	1.Skeletal muscle - contractile proteins and muscle contraction	4
	2.Skeletal system: Structure and its functions; joints (types and functions)	4
	3. Major skeletal muscles (related to movement) and their functions	4
	Chapter – 6: Neural control and coordination	
	1. Nervous system in humans - central nervous system; Brain and Spinal Cord (Structure and functions) peripheral nervous system and visceral nervous system (names and functions of parts only, flow chart, with special emphasis on autonomic nervous system);	8
	2. Elementary structure and functions of eye and ear.	4
	Chapter – 7: Chemical coordination and regulation	
	1. Human endocrine system - pituitary, thyroid, parathyroid, adrenal, pancreas, gonads (in tabular form) with emphasis on major diseases caused by disorders	10

**PROJECT / PRACTICAL
CLASS XI**

FULL MARKS – 30

NO OF PERIODS ASSIGNED – 36 X 2

DETAIL SYLLABUS

1. Study of parts of simple and compound light microscopes.
2. Study of typical plant cell from onion scale leaf (dissection, drawing and labeling).
3. Spot identification of –
 - A. Bacteria (Lactobacillus)
 - B. Fungi (Mucor)
 - C. Algae (Spirogyra)
 - D. Protozoa (Paramecium)
4. Seed identification of monocotyledonous and dicotyledonous crops; Germination of seeds – Epigeal and Hypogeal.
5. Study of modified roots and modified stems.
6. Temporary slide preparation –
 - A. T. S. of root (Monocot – Arum, Dicot – Gram)
 - B. T. S. of stem (Monocot – Maize, Dicot – Sunflower)
7. Qualitative Biochemical Analysis of -
 - A. Glucose – Benedict’s test
 - B. Starch – Iodine test
 - C. Protein – Biuret test & Coagulation test
 - D. Fat – Grease spot test
8. Biochemical test to detect -
 - A. Presence of GLUCOSE in urine
 - B. Presence of UREA in urine
 - C. Presence of BILE PIGMENTS in urine
9. Human blood film preparation – Cell study, T.C. , D.C.
10. Determination of blood pressure by sphygmomanometer and determination of heart rate and pulse rate.

Question Pattern

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|---------------------------|---|----------------|
| 1. A) Experiment A | = | 7 marks |
| B) Experiment B | = | 7 marks |
| 2. Spotting (5 specimens) | = | 2×5 = 10 marks |
| 3. Laboratory Note Book | = | 6 marks |

Total = 30 marks