



DEPARTMENT OF SCHOOL EDUCATION

TAMIL NADU

Syllabus

2020 - 21

STANDARD - 11

SYLLABUS 2020-2021

STANDARD: 11

SUBJECT: BIO-BOTANY (THEORY)

CHAPTER	CONTENT
1. Living world	1.2.7 Lytic & Lysogenic Cycle 1.3 Classification of Living world 1.4.4 Gram staining procedure 1.4.5 Life processes in Bacteria 1.4.6 Reproduction in Bacteria 1.4.8. Archaeobacteria 1.4.9. Cyanobacteria (Blue Green Algae) 1.4.10. Mycoplasma 1.4.11. Actinomycetes 1.5.2 General characteristic features 1.5.3 Methods of Reproduction in Fungi 1.5.4 Classification of fungi 1.5.6 Mycorrhizae 1.5.7 Lichen
2. Plant Kingdom	2.2 Life cycle Pattern 2.3.1 General Characteristic features 2.3.2 Classification 2.4.1 General characters to classification of Bryophytes 2.5.1 General characters and classification of Pteridophytes 2.5.3 Types of Stele 2.6.1 General characters and classification of Gymnosperm
3. Vegetative Morphology	3.5 Root system 3.6 Shoot system 3.7.5 Leaf types 3.7.6 Leaf modification 3.7.7 Leaf duration

4. Reproductive Morphology	4.1	Inflorescence
	4.2	Flower
	4.4	Androecium
	4.5	Gynoecium
	4.6	Construction of floral diagram & Formula
5. Taxonomy and Systematic Botany	5.1	Taxonomy and systematics
	5.2	Taxonomic Hierarchy
	5.3	Concept of species - Morphological, Biological and Phylogenetic
	5.4	International Code of Botanical Nomenclature (ICBN)
	5.5	Taxonomic Aids
	5.10	Types of Classification
	5.11	Modern Trends in Taxonomy
	5.12	Cladistics
5.13	Selected families of Angiosperms	
6. Cell: The Unit of Life	6.2	Microscopy
	6.3	Cell theory
	6.5	Plant and Animal cell
	6.7	Nucleus
	6.8	Flagella
7. Cell Cycle	7.2	Cell cycle
	7.3	Cell division
	7.3.1	Amitosis (Direct Cell Division)
	7.3.2	Mitosis
	7.3.3	Closed and Open Mitosis
	7.3.4	Cytokinesis
7.3.6	Meiosis	
8. Biomolecules	8.3	Carbohydrates & Classification
	8.5	Proteins and Aminoacids
	8.6	Enzymes
	8.7	Nucleic acids
9. Tissue and Tissue system	9.1	Meristematic Tissue & Theories of Meristem
	9.3	Tissue System
	9.4	Epidermal Tissue system
	9.6	Vascular Tissue system

10. Secondary growth	10.1	Secondary growth in Dicot Stem	
11. Transport in Plants	11.3	Plant water relation	
	11.5	Ascent of sap	
	11.6	Transpiration	
	11.7	Translocation of organic sloutes	
	11.8	Mineral absorption	
12. Mineral Nutrition	12.1	Classification of Minerals	
	12.2	Functions, mode of absorption and deficiency symptoms of macronutrients	
	12.3	Functions, mode of absorption and deficiency symptoms of micronutrients	
	12.5	Critical concentration and toxicity of minerals	
	12.7	Nitrogen fixation	
	12.8	Nitrogen Cycle and Nitrogen Metabolism	
13. Photosynthesis	13.2	Photosynthetic pigments	
	13.4.	Photosynthetic Unit (Quantasome)	
	13.5.	Absorption spectrum and Action spectrum	
	13.6.	Emerson's Experiments and Hill's Reaction	
	13.7.	Modern concepts of photosynthesis	
	13.8.	Photo-Oxidation phase of light Reaction	
	13.9.	Photo chemical phase of light reaction	
	13.10.	Photophosphorylation	
	13.11	Dark Reaction or C3 cycle	
	13.12.	Hatch & Slack pathway or C4 cycle	
	13.13.	CAM Cycle	
	13.14.	Photorespiration or C2 Cycle	
	14. Respiration	14.1	Gaseous exchange
		14.5	Stages of Respiration
14.7		Anaerobic Respiration	
14.9		Pentose phosphate pathway	
15. Plant growth and development	15.2	Plant Growth Regulators	
	15.3	Photoperiodism	
	15.4	Vernalization	

PRACTICAL

SUBJECT: BIO-BOTANY

STANDARD: 11

Sl.No	Topic
Preparation and Demonstration of Slides	
1	Mitotic cell division stages
2	Anatomical structure - Dicot & Monocot (Root, Stem & Leaf)
3	Plasmolysis and Deplasmolysis
Fresh or preserved specimens	
4	Phylloclade - Opuntia
5	Special inflorescence - Cyathium
Taxonomy - Flower Dissection	
6	Fabaceae - Clitoria ternatea
7	Solanaceae - Datura metal
Bio molecules - Nutrient test	
8	Test for reducing sugar-Benedict test
9	Starch - Iodine test
10	Protein - Biuret test
11	Lipid - Saponification test
Plant Physiology Experiments	
12	Paper Chromatography
13	Wilmott's Bubbler
14	Demonstration of production of CO ₂ during respiration

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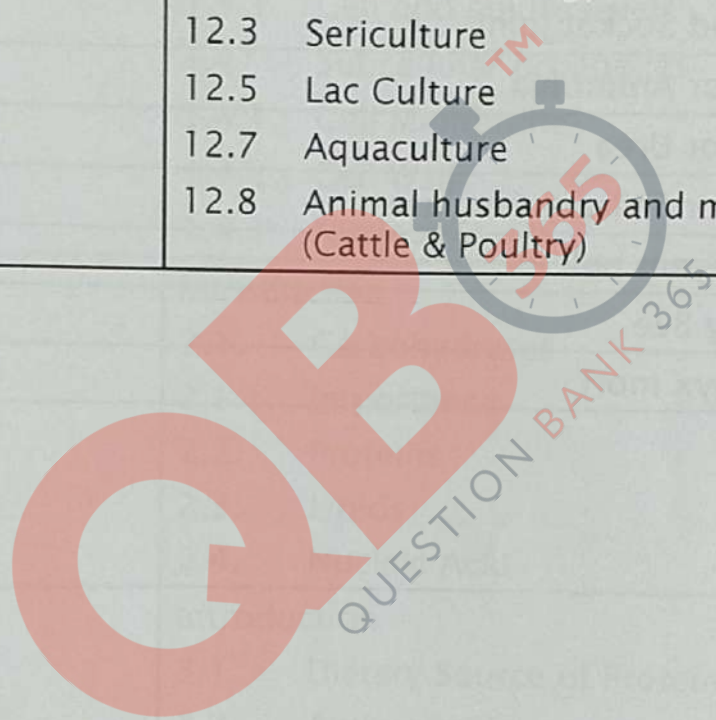
CLASS: 11

SUBJECT: BIO_ZOOLOGY (THEORY)

UNITS	CONTENT
1. The Living world	Introduction 1.1 Diversity in the living world 1.3 Taxonomy and systematic 1.4 Three domains of life 1.7 Concept of species 1.8 Tools for study of Taxonomy
2. Kingdom Animalia	Introduction 2.1 Basis of classification 2.2 Classification of Kingdom - Animalia 2.3 Non - Chordates 2.3.2 Phylum - Cnidaria 2.3.3 Phylum - Ctenophora 2.3.6 Phylum Annelida 2.3.7 Phylum Arthropoda 2.4 Phylum - Chordata 2.4.3 Subphylum - Vertebrata 2.4.4 Class - Cyclostomata 2.4.5 Class - Chondrichthyes 2.4.6 Class - Osteichthyes
3. Tissue level of organization	3.1 Animal Tissues 3.2 Epithelial Tissues 3.3 Connective Tissues
4. Organ and Organ System of Animal	Introduction 4.1 Earth worm 4.3 Frog
5. Digestion and Absorption	Introduction 5.1 Digestive System 5.2 Digestion of food and role of digestive enzymes 5.3 Absorption and assimilation of proteins, carbohydrates and fats 5.4 Egestion 5.6 Nutritional and digestive Disorders

6. Respiration	Introduction 6.1 Respiratory functions 6.3 Mechanism of breathing 6.4 Exchange of gases 6.5 transport of gases 6.6 Regulation of Respiration 6.7 Problems in oxygen Transport 6.9 Effects of Smoking
7. Body fluids and circulation	Introduction 7.1 Body Fluids 7.4 Human Circulatory System 7.6 regulation of Cardiac activity 7.7 Disorders of the circulatory system
8. Excretion	Introduction 8.2 Human Excretory system 8.3 Mechanism of urine formation in human 8.4 Regulation of kidney functions 8.6 Role of other organs in Excretion
9. Locomotion and movement	Introduction 9.1 Types of movement 9.2 Types of muscles 9.3 Skeletal muscles 9.4 Structure of contractile proteins 9.5 Mechanism of muscle contraction 9.6 Types of Skeletal muscle contraction 9.10 Types of joints
10. Neural control and coordination	Introduction 10.1 Neural System 10.4 Central Nervous System 10.5 Reflex action and Reflex arc 10.6 Sensory reception and processing
11. Chemical coordination and Integration	Introduction 11.1 Endocrine glands and Hormones 11.2 Human Endocrine system 11.2.1 Hypothalamus

	<ul style="list-style-type: none">11.2.2 Pituitary gland or Hypophysis11.2.3 Pineal gland11.2.4 Thyroid gland11.2.5 Parathyroid gland11.2.6 Thymus gland11.2.7 Adrenal gland11.2.10 Hormones of heart, kidney & gastro-intestinal tract11.4 Mechanism of hormone action
12. Trends in Economic Zoology	<ul style="list-style-type: none">Introduction12.1 Scope of Zoology12.3 Sericulture12.5 Lac Culture12.7 Aquaculture12.8 Animal husbandry and management (Cattle & Poultry)



PRACTICAL

CLASS: 11		SUBJECT: BIO_ZOOLOGY
Sl.No	Topic	
1	Pleurobrachia	
2	Tapeworm	
3	Cockroach	
4	Pila	
5	Squamous epithelium	
6	Columnar epithelium	
7	Rib cage	
8	Ball and Socket joint	
9	Test for Ammonia	
10	Test for Urea	
11	Test for Salivary Amylase	
12	Kangeyam bull	
13	Honey Bee	
14	Bombyx mori	

