

SYLLABUS IN THE SUBJECT OF BIOLOGY
(With Chapter-wise distribution of Marks)
FYJC Science.

Sr. No.	Chapter	Marks	Marks with option
1.	Living World. Basic principles of life, Herbarium, Botanical Gardens, Museums, Zoological parks, Biodiversity parks, Key.	2	3
2.	Systematics of the Living Organisms. Various terms like, Systematics, Classification, Three domains of life, Chemotaxonomy, Numerical Taxonomy, Cladogram, Phylogeny, DNA barcoding, to be learnt. Taxonomy and units of classification, Binomial nomenclature, Salient features of five Kingdoms, Monera, Protista, Fungi, Plantae and Animalia.	3	4
3.	Kingdom Plantae. Classification of Kingdom Plantae, Salient features of major groups under Cryptogams, viz., Thallophyta, Bryophyta and Pteridophyta with examples. Salient features of major plant groups under, Phanerogams, viz., Gymnospermae and Angiospermae. Concept of Alternation of Generation.	5	7
4.	Kingdom Animalia. Criteria for Animal classification, viz., Body plan and Symmetry. Animal classification as of Phyla, Porifera, Cnidaria, Ctenophora, Platyhelminthes, Asclehelminthes, Annelida, Arthropoda, Mollusca, Echinodermata, Hemichordata, Chordata (with sub phyla, Urochordata, Cephalochordata and Vertebrata with its classes and examples.)	4	5
5.	Cell Structure and Organization. Cell, Kinds of cells, Structure and function of Eukaryotic cell organelles such as, Cell wall, cell membrane, Cytoplasm, Endoplasmic reticulum, Golgi complex,	4	5

	Lysosomes, Vacuoles, Glyoxisomes, Mitochondria, Plastids, Ribosomes, Nucleus and cytoskeleton.		
6.	Biomolecules. Carbohydrates, Lipids, Proteins, Nucleic acids, DNA & RNA, Enzymes and its activity, other substances.	4	5
7.	Cell Division. Cell cycle, Types of cell divisions, viz. Amitosis, Mitosis and Meiosis.	4	6
8.	Plant tissues and anatomy. Meristematic cells: its classification and characteristics. Permanent cells : its classification as Simple (Parenchyma, Collenchyma, Sclerenchyma) Complex (Xylem and Phloem) Vascular tissue & Secondary growth. Anatomy of Dicot and Monocot, Root, Stem & Leaf	4	6
9.	Morphology of flowering plants. Vegetative parts, Root & its modifications Stem & its modifications, Leaf & its modifications. Types of Inflorescence, Structure of Typical Flower, its parts, arrangement etc. Fruit and its types. Study of families: Fabaceae & Solanaceae.	7	10
10.	Animal tissue. Histology of Epithelial tissues, Connective tissues, Muscular tissues, Nervous tissues	4	6
11.	Study of Animal type: Cockroach, its classification, External Morphology, Digestive system, Circulatory system, Respiratory system, Nervous system and Reproductive system.	4	6
12.	Photosynthesis. Structure of Chloroplast, Nature of Light, Mechanism of Photosynthesis, Light reaction, Dark reaction, Photorespiration, C ₄ pathway, CAM, Factors affecting photosynthesis, Significance of photosynthesis.	5	7
13.	Respiration and Energy Transfer. Formation of ATP, Anaerobic respiration, Aerobic Respiration, ETS, Respiratory Quotient.	5	7

14.	Human Nutrition. Human Digestive system, Digestive glands, Physiology of Digestion, Absorption, Assimilation and Egestion, Nutritional disorders and Disorders of Digestive system.	5	7
15.	Excretion and Osmoregulation. Excretion and excretory products, Excretory system, Urine formation.	5	7
16.	Skeleton and Movement. Movements and Locomotion, Location and structure of skeletal muscles, Working of skeletal muscles, Physiology of muscle relaxation, Relaxation of muscle fibres, Properties of muscles on electrical stimulation. Skeletal system, Group of skeleton: Axial skeleton and Appendicular skeleton, Types of joints. Disorders related to muscles, Disorders related to bones.	5	7
	TOTAL	70	98