

SARDAR PATEL UNIVERSITY
B.Sc. FIRST SEMESTER
Core Course - Biology
US01CBIO21 (T) CELL BIOLOGY AND BIODIVERSITY
Effective from June 2018
4 Credits, 4 periods per week

Total Marks 100, Internal -30 Marks, External-70 Marks, exam duration: 3 hours

NO	DETAIL DESCRIPTION	WEIGHTAGE%
1	<p>Unit 1 Cell & Cell organelles Cell as unit of structure and function Characteristics and cell structure of Prokaryotic cell and Eukaryotic cell Cell organelles – Structure and functions of : Cell wall, Plasma membrane, Nucleus, Chloroplast, Mitochondria, E.R., Golgi complex, Lysosomes, Ribosomes, Cell division – Cell cycle , Mitosis and Meiosis and Significance Structure of chromosome, Types based on the position of the centromere, Giant chromosomes</p>	25%
2	<p>Unit -2 Bio molecules Carbohydrates – Nomenclature, Classification -Monosaccharides, Disaccharides, Polysaccharides and biological role Lipids: Definition and classification; Fatty acids structure ; Essential fatty acids; biological role Proteins – Definition, classification, Structure of Amino acids, Bonds responsible for protein structure, Protein denaturation and biological role of Proteins Nucleic acids: Nitrogenous bases; Pentose sugars, Structure and function of nucleotides; Types of nucleic acids; Structure of A, B, Z types of DNA; Types of RNA; Structure of tRNA. Biological role</p>	25%
3	<p>Unit -3 Biodiversity Viruses- General structure, Replication, TMV, Bacteriophage General account of Mycoplasma General characteristics of Bacteria, Reproduction and economic importance Algae –General characteristics, Range of thallus structure and reproduction, economic importance of Algae, Life cycle of <i>Volvox</i> Fungi - General characteristics, Range of thallus structure and reproduction, Economic importance of Fungi, Life cycle of <i>Rhizopus</i> Introduction to Archegoniate : General characters and alternation of generation and outline lifecycles of following - A. Bryophyta – <i>Riccia</i> B. Pteridophyta – <i>Nephrolepis</i> C. Gymnosperms – <i>Cycas</i></p>	25%

4	Unit -4 General Account of Invertebrates General characteristics and outline classification of Major Invertebrate Phyla Nutrition and reproduction in Protozoa Life cycle and pathogenicity of <i>Plasmodium vivax</i> and <i>Entamoeba histolytica</i> Life cycle and pathogenicity of <i>Taenia solium</i> and <i>Wuchereria bancrofti</i> Metamerism and Economic importance of Annelida Economic Importance of Arthropods Social Life of Insect Metamorphosis in Insects Economic Importance of Molluscs, Water vascular system in Asteroidea	25%
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SUGGESTED READINGS:

NO	NAME OF THE BOOK
1	Cellbiology,Genetics,Molecular Biology,Evolution and Ecology-P.S.Verma and V.K.agarwal
2	Text book of Botany-Diversity of Microbes and Cryptogams-Singh,Pande and Jain
3	Biochemistry-U.Satyanarayan
4	Cell and Molecular Biology: De Robertis and De Robertis
5	Lehninger Principles of Biochemistry Book by Albert L. Lehninger, David L. Nelson, and Michael M. Cox
6	Modern Text Book Of Zoology Invertebrates- R. L .Kotpal
7	Economic Zoology - Shukla and Upadhyay
8	Medical Parasitology - <u>Rajesh karyakarte, Ajit Damle</u>
9	Invertebrate Zoology – E.L.Jordan and P.S.Verma
10	Cell Biology-P. S. Verma