

DEPARTMENT OF BIOTECHNOLOGY

ODD SEMESTER

CELL BIOLOGY (SAC1A)-SESSION PLAN

SESSION NO	TOPICS TO BE COVERED	TEACHING METHOD
UNIT-I		
1 & 2	Orientation Programme	BB
3	Syllabus given & topic discussion	BB
4	History, Cell theories & Scope of Cell Biology Levels of organization-	BB
5	Classification –Whittaker five Kingdom The cell- types, size, shape, number, brief of components of cell.	BB
6	Structure of Plant cell & Animal cell, Difference between Plant cell & Animal cell.	BB
7	Revision of unit-I	Group discussion
8	Unit test-I	
UNIT-II		
9	Molecules of life- - Physical & Biological properties.	BB
10	Components of Cytoplasmic Matrix- Elements & Inorganic substances-	BB
11	Components of Cytoplasmic Matrix- Carbohydrates, Proteins Lipids, Nuclie acids Enzymes, Hormones & Vitamines.	BB
12	Architecture & types of cell – Prokaryotic cell. Architecture & types of cell –Eukaryotic cell	BB
13	Difference between Prokaryotic cell & Eukaryotic cell.	BB
14	Differentiation of Plant cells into tissues – Simple & Complex tissues	BB
15	Differentiation of Animal cells into tissues – Epithelial, Columnar , Vascular, Connective, Nervous tissue & Muscular tissue	BB

16	Revision of unit-II	Group discussion
17	Unit Test-II	BB
CIA TEST-I		
UNIT-III		
18	Plasma membrane –Structure- Trilaminar, Biomolecular, Lattice & Micellar model.	BB
19	Fluid mosaic model- structure & chemical composition	BB
20	Specialization of plasma membrane – Microvilli, Desmosomes, Gap junction, Tight junction Inder digitations, Basal Infoldings & Plasma desmata.	BB
21	Cell junctions- Ion channels, Pores, Origin & Functions of plasma membrane	BB
22	Plasma membrane- Transport- types of Passive Transport	BB
23	Active Transport, - Endocytosis- Phagocytosis & Pinocytosis, Exocytosis ,Osmosis & Filtration	BB
24	Plastids–Structure, Functions, Mechanism of photosynthesis	BB
25	Endoplasmic Reticulum – Structure, Chemical composition & Functions	BB
26	Ribosomes- Structure, Chemical composition & Functions	BB
27	Golgi Complex –Structure, Chemical composition& Functions	BB
28	Lysosomes –Structure, Chemical composition &Functions	BB
29	Mitochodria- Structure, Chemical composition & Functions	BB
30	Centrosome, Centrioles, Cilia & Flagella-Structure, Chemical composition & Functions	BB
31	Micro tubes, Microfilaments, Micro bodies & Vacuoles- Structure & Functions	BB
32	Nucleus & Nucleolus-Structure, Chemical composition & Function	BB
33	Microscopy – Introduction , Resolving power , Magnification ,Types of Microscope – Light & Compound Microscope	BB
34	Phase Contrast Microscope-structure, principles & functions	BB

35	Electron Microscope- Transmission Electron Microscope (TEM) - structure, principles & functions	PPT
36	Scanning Electron Microscope(SEM)- structure, principles & functions & Difference Between TEM & REM	BB
37	X-Ray Microscope- structure, principles & functions	BB
38	Revision of unit-III	Group discussion
39	Unit test-III	
CIA TEST-II		
UNIT-IV		
40	Nucleic acid – DNA , types & Chemical nature of DNA	BB
41	Nucleic acid –RNA, types & Chemical nature of RNA	PPT
42	Synthesis of nucleic acid DNA finger printing, Hybridization, Properties of DNA & Function of DNA & RNA	BB
43	Genetic code	BB
44	DNA- Replication , DNA- Repair& DNA – Recombination	BB
45	Revision of unit-IV	Group discussion
46	Unit test-IV	
CIA TEST-III		
UNIT-V		
47	Protein Secretion and sorting, folding, modification and degradation of proteins	BB
48	Molecular structure of Gene, Chromosome – structure, chemical composition , different types	BB
49	Special types of chromosome	PPT
50	Regulation of transcription in Bacteria and eukaryotic cells.	BB
51	RNA processing and post- transcriptional control Hormones, viruses and gene expression	BB

52	Revision of unit-V	Group discussion
53	Unit test-V	Group discussion
UNIT-VI		
54	Cell cycle – Introduction Inter phase – G ₁ – phase, S- phase & G ₂ phase & M- phase Mitosis – Karyokinesis & Cytokinesis &-	BB
55	Meiosis – Meiosis I & II ,Significance of Meiosis	BB
56	cellular energetic –Glycolysis, Aerobic Oxidation, Photosynthesis	BB
57	cell signaling Types of cell signaling & Mechanism of cell signalling & Cell signaling through G- protein linked surface receptors	PPT
58	Cell signaling through steroid Hormone Receptors	BB
59	Revision of unit-V	BB
60	Unit test-VI	BB
Revision		
61	Revision of unit—I	BB
62	Revision of unit- II	BB
63	Revision of unit-III	BB
64	Revision of unit-IV	BB
65	Revision of unit-V	BB
MODEL EXAM		

Prepared By	Approved By
Dr.N.Senthil Kumar	Dr.N.Santhi

