



RPS Degree College, Balana (Mahendergarh)

Lesson Plan

2024-25(Odd Semester)

Class and Section: M.Sc. 1st Sem. Botany

Subject: Cell biology

Name of the Faculty : Ms. Nisha

Lecture	Topics
1	Introduction to Syllabus, Scheme of Exam & Learning Objectives/Outcomes
2	Test to Check the Learning Level of the Students
3	Various models of Plasma membrane
4	Various models of plasma membrane
5	Structure of Plasma membrane
6	Donnan equilibrium
7	Active transport
8	Passive transport
9	Facilitated transport
10	Uniports
11	Symports
12	Antiports
13	Structural organization of cell wall
14	Functions of cell wall
15	Structure and functions of tight junctions
16	Adherens junctions
17	Gap junctions
18	Plasmodesmata
19	Cell- matrix adhesion mechanisms
20	Integrins
21	Collagen
22	Non-collagen components
23	Introduction to unit II
24	Cytoskeleton
25	Actin and Myosin
26	Intermediate filaments
27	Microtubules
28	Cilia
29	Flagella
30	Cell cycle regulation
31	Prokaryotic and eukaryotic cell cycle
32	Cell cycle checkpoints
33	Events of M phase
34	Meiosis and fertilization

35	Motor proteins
36	Microtubules dynamics
37	Karyokinesis and Cytokinesis
38	Cell plate formation
39	Structure and functions of ER
40	Golgi apparatus
41	Lysosome
42	Peroxisome
43	Plastids
44	Vacuoles
45	Chloroplast
46	Mitochondria
47	Nucleus and Nucleolus
48	Coat proteins
49	Vesicular transport
50	Mechanism of Protein sorting
51	Transport between organelles
52	Transport between organelles
53	Import and Export of proteins in Nucleus
54	Principles of light microscope
55	Applications of light Microscope
56	Phase contrast
57	Principle of Fluorescence
58	Applications of Fluorescence microscope
59	Electron microscope
60	Transmission Electron Microscope
61	Scanning Electron Microscope
62	Centrifugation
63	Principles of Centrifugation
64	Ultracentrifugation
65	Density gradient centrifugation
66	Chromatography
67	Principle and application of paper chromatography
68	Ion exchange Chromatography
69	Affinity chromatography
70	Thin layer chromatography
71	Gas chromatography
72	HPLC
73	UV- Spectroscopy
74	NMR and ESR spectroscopy
75	AGE and PAGE
76	Concept of isoelectric focusing

Ms. Ritu
M.Sc Botany 1st Sem
Inheritance Biology
Topics Covered
Introduction to Syllabus
Monohybrid cross
Dihybrid cross
Law of dominance
Law of segregation
law of independent assortment
Application of mendelian principles in genetic analysis
Application of mendelian principles in genetic analysis
Co dominance
Incomplete dominance
Gene interactions
Gene interactions
Gene modification
Gene modification
Pleiotropy
Pleiotropy
Genomic imprinting
Penetrance
Expressivity
Polygenic inheritance
Sex linkage
Sex linkage
Sex limited and sex influenced traits
Linkage and crossing over
Linkage and crossing over
Linkage and crossing over
Tetrad analysis
Tetrad analysis
1st Minor test
1st Minor test
1st Minor test
1st Minor test
1st Minor test
QTL mapping and its applications
QTL mapping and applications

Complementation test
Complementation test
Molecular basis of chromosome pairing
Molecular basis of chromosomal pairing
Maternal inheritance
Maternal inheritance
Inheritance of chloroplast genes
Inheritance of chloroplast genes
Conjugation
Transformation
Transduction
Gene mapping
Gene mapping
Padigree analysis
Padigree analysis
2nd Minor test
2nd Minor test
2nd Minor test
2nd Minor test
2nd Minor test
LOD score
Numerical alterations in chromosomes
Spontenaus and induced mutation
Site directed mutagenesis
DNA methylation
Mechanism of sex determination in plants
Genome analysis of Tobacco and wheat
Restriction enzymes
Dna cloning vectos
Construction of genomic and cdna library
Agrobacterium mediated gene transfer
Production of transgenic plants
Production of transgenic plants
Transgenic crops
Transgenic crops
Improvement of nutritional quality in crops

Saturday	
Sunday	

Lesson Plan 2024-25 (Odd Semester)

Name of the Faculty:	Manisha Satauria
Class & Section:	M.Sc botany 1st Sem
Subject:	Cryptogamic botany
Week	Topics Covered
22/07/24 to 26/07/24	Introduction to Syllabus
	algae in diversified habitat
	algae in diversified habitat
	thallus organization
	thallus organization
29/07/24 to 02/08/24	cell ultrastructure
	cell ultrastructure
	reproduction in algae
	reproduction in algae
	classification of algae
05/08/24 to 09/08/24	classification of algae
	criteria for classification
	pigments in algae
	reserve food and flagella
	reserve food and flagella
12/08/24 to 16/08/24	protochlorophyta
	charophyta
	chlorophyta
	xanthophyta
	Bacillariophyta
	pheophyta
	Rhodophyta
	algal bloom
	algal fertilizer
	economic importance of algae
	economic importance of algae
	economic importance of algae
	introduction to unit 3
02/09/24 to 06/09/24	1st Minor test
	1st Minor test
	1st Minor test
	1st Minor test
	1st Minor test
09/09/24 to 13/09/24	introduction to Bryophytes
	morphology
	structure
	reproduction
	life history
16/09/24 to 20/09/24	distribution
	economic and ecological importance
	economic and ecological importance of Bryophytes
	classification of Bryophytes
	classification of Bryophytes
	Marchantiales
	Jungermanniales
	anthoserotales
	Introduction to unit 4
30/09/24 to 04/10/24	sphganales
	funariales
	Polytrichales
07/10/24 to 11/10/24	2nd Minor test
	2nd Minor test
	2nd Minor test
	2nd Minor test
	2nd Minor test
14/10/24 to 18/10/24	pteridophytes character's
	morphology
	anatomy
	Revision
21/10/24 to 25/10/24	reproduction
	classification



	classification
	Psilopsida
	Lycopsida
28/10/24 to 01/11/24	Sphinopsida
	Pteropsida
	fossil pteridophytes
	introduction
04/11/24 to 08/11/24	3rd Minor test
	3rd Minor test
	3rd Minor test
	3rd Minor test
	3rd Minor test
11/11/24 to 15/11/24	stele and stellar system
	stele and stellar system
	Heterospory
	heterospory
18/11/24 to 22/11/24	Special Class
	Special Class
	Special Class
	Special Class
	Special Class

Depart of Botany

Lesson Plan 2024-25 (Odd Semester)

Name of the Faculty : Dr. D R Bharadwaj

Class & Section : MSc Botany I st Sem

Subject : Microbiaal Kingdom & Applied Microbiology

Lectures	Topics Covered
1	Introduction to Mirobial world
2	History of Microbiology
3	Structure of Viruses
4	Replication
5	Characteristics
6	Organisation of viruses
7	Economic importance
8	Viruses living?
9	Bacteriophage
10	Reproduction Bacteriophage
11	Lytic Cycle
12	Lysogenic cycle
13	Virions
14	Viroids
15	Virusoids
16	Prions
17	Phytoplasma
18	Bacterial Growth
19	Yield of Bacteria
20	Stress response
21	Archae bacteria
22	Eubacteria
23	Mycology
24	General Characters of fungi
25	Economic Importance of Fungi
26	Thallus organisation
27	Types of Spores
28	Cell structure of fungi
29	1st Minor test
30	Cell wall composition of fungi
31	Reproduction of fungi
32	Classification of fungi
33	Mastigomycotina
34	Amastigomycotina
35	Zygomycotina
36	Ascomycotina
37	Basidiomycotina
38	Deuteromycotina
39	Heterothallism
40	Heterokaryosis
41	Parasexuality
42	Sex hormones
43	Lichens
44	Reproduction in Lichens
45	Types of Lichens
46	Economic Importance of Lichens
47	2nd Minor test
48	Alcohol
49	Beer
50	Organic acids
51	Secondary metabolites
52	Antibiotics
53	Steroids
54	Enzymes
55	Aminoacids
56	Growth regulators & Vitamins

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57	Biofertilizers
58	Biocontrol
59	Biodeterioration
60	3rd Minor test
61	Food processing
62	Health Food sources
63	Spoilage of food
64	Toxicity
65	Special Class
66	Special Class
67	Special Class
68	Special Class
69	Special Class
70	Special Class