



# RPS Degree College, Balana (Mahendergarh)

## Syllabus Plan

2020-21(Odd Semester)

**Class and Section:** B.Sc. Medical 5th Sem.

**Subject:** Plant Physiology (Botany Paper-01)

Lecture	Topics
1	Introduction to Plant Physiology
2	Structure of Water
3	Importance of water to plants
4	Properties of Water
5	Diffusion- Concept and Importance to plants
6	Imbibition- Concept and Importance to plants
7	Osmosis- Concept and Importance to plants
8	Absorption of water in Plants
9	Transport of Water in Plants
10	Transpirational Pull Theory
11	Transpiration- Concept and Significance
12	Physiology of Stomata- Active K <sup>+</sup> Pump Theory
13	Criteria of essentiality of nutrients in Plants
14	Role of Micro Nutrients
15	Role Of Macro Nutrients- N, P, K, S etc
16	Deficiency Symptoms of Nutrients
17	Munch Mass flow model
18	Source- Sink Concept for food translocation
19	Factors affecting Food translocation
20	History and Significance of Photosynthesis
21	Photosynthetic Pigments- Chlorophyll
22	Photosynthetic Pigments- Carotenoids and Phycobillins
23	Action spectra and Absorption Spectra
24	Concept of 2 Photosystems- PS I and PS II
25	Non-Cyclic Photophoshorylation or Z-Scheme
26	Cyclic Photophoshorylation
27	Calvin Cycle or C <sub>3</sub> Cycle(Cyclic form)
28	Calvin Cycle or C <sub>3</sub> Cycle(Structural form)
29	C <sub>4</sub> Cycle or Hatch-Slack Pathway
30	CAM Pathway
31	Photorespiration
32	Concept of growth and development
33	Phases of Growth
34	Seed Dormancy
35	Factors to overcome seed dormancy

36	Plant Movements
37	Photoperiodism and type of plants on the basis of photoperiodism
38	Photoinduction
39	Florigen concept
40	Physiology of Flowering
41	Senescence- factors, cause and significances
42	Fruit Ripening
43	Introduction to Plant Growth Regulators
44	Auxin- Discovery and Bioassay
45	Auxin- Biosynthesis and chemical structure
46	Auxin- Mechanism of action(Polar Transport)
47	Auxin- Role in Plants
48	Auxin- Signalling Pathway
49	Gibberellin- Discovery and Bioassay , Biosynthesis and chemical structure
50	Gibberellin- Discovery and Bioassay , Biosynthesis and chemical structure
51	Gibberellin- Role in Plants
52	Gibberellin- Signalling Pathway
53	Cytokinin- Discovery, Bioassay, Chemical Structure
54	Cytokinin- Signaling and Role in Plants
55	ABA- Discovery, Chemical Nature and Signaling
56	ABA- Role in Plants
57	Ethylene- Discovery, Chemical nature and function in plants
58	Photomorphogenesis
59	Phytochrome- Structure, Type and Discovery
60	Phytochrome- Mechanism of action and role in Plants



# RPS Degree College, Balana (Mahendergarh)

## Syllabus Plan

2020-21(Odd Semester)

**Class and Section: B.Sc Med. 5th Sem**

**Subject: Plant Ecology Botany-2**

Lecture	Topics
1	Introduction To Plant Ecology
2	Components of Ecology
3	Abiotic Components - Light
4	Water
5	Wind
6	Atmospheric Humidity
7	Temperature
8	Low and High Temp. effect
9	Edaphic Factors
10	Soil Texture
11	soil water
12	Soil organism
13	Topographic factors
14	Biotic interaction
15	positive interaction
16	Negative interaction
17	Competition
18	Browsing and Grazing Animals
19	Ecological adaptation
20	Xerophytes
21	Xerophytes
22	Hydrophytes
23	Hydrophytes
24	Halophytes
25	halophytes
26	Population Introduction
27	Characteristics
28	Age pyramids
29	Population dynamics
30	Population Regulation
31	Ecotypes And Ecades
32	r and k Selection
33	Community introduction
34	Characteristics of Community Qualitative
35	Qualitative

	36	Qualitative
	37	Quantitative
	38	Quantitative characteristics
	39	Methods of Analysis
	40	Quardats Methods
	41	Ecological Succession
	42	Hydrosere
	43	Pasamosere
	44	Xerosere
	45	Ecosystem Structure And Function
	46	Food web and Pyramids ,Energy flow
	47	Biogeochemical cycles
	48	Phosphorus and water Cycle
	49	Phytogeographical Regions of India
	50	egetatinal Types of India
	51	Enviromental Pollution - Air
	52	Water pollution
	53	Global Warming
	54	Green house effect
	55	Green house gases
	56	Impact of global warming
	57	Carbon trading
	58	Zone layer depletion
	59	Biomagnification
	60	Revision of important topic







# RPS Degree College, Balana (Mahendergarh)

## Syllabus Plan

2020-21(Odd Semester)

**Class and Section: B.Sc Medical 5th Sem**

**Subject: Inorganic chemistry**

Lecture	Topics
1	Introduction of syllabus
2	Introduction of syllabus
3	SECTION A: VBT and its limitations
4	Postulates of CFT
5	Crystal field splitting in octahedral field
6	Crystal field splitting in octahedral field
7	Crystal field splitting in tetrahedral field
8	Crystal field splitting in tetrahedral field
9	Crystal field splitting in Square Planar complexes
10	Crystal field splitting in tetragonal complexes
11	Factors affecting CFSE
12	Factors affecting CFSE
13	Differences between CFT and VBT
14	Color of transition metal complexes
15	Revision
16	SECTION B: Thermodynamic stability of complexes
17	Stability Constant
18	Kinetic and thermodynamic stability
19	Factors affecting stability
20	Factors affecting stability
21	Substitution reactions in square planar complexes
22	Substitution reactions in square planar complexes
23	Rate law
24	Types of substitution reactions
25	Trans influence
26	Trans effect
27	Trans effect
28	Theories of trans effect
29	Theories of trans effect
30	Revision
31	SECTION C: Types of magnetic behaviour
32	LS coupling ,Measurement of magnetic susceptibility
33	Measurement of magnetic susceptibility
34	Relation between magnetic susceptibility and magnetic moment
35	Variation of magnetic susceptibility with temperature

36	Orbital contribution to magnetic moment
37	Orbital contribution to magnetic moment
38	Orbital contribution to magnetic moment
39	Neels Temperature, Curies Temperature
40	Temperature independent paramagnetism
41	Temperature independent paramagnetism
42	Magnetic behavior of 3d metal complexes
43	Magnetic behavior of 3d metal complexes
44	Anomalous magnetic moment
45	Revision
46	SECTION D: Basis of electron absorption spectroscopy
47	Term symbols and coupling schemes
48	Term symbols and coupling schemes
49	Selection rules
50	Selection Rules
51	Splitting of states in Octahedral and Tetrahedral fields
52	Splitting of states in Octahedral and Tetrahedral fields
53	Spectrochemical series
54	Orgel energy level diagrams
55	Orgel energy level diagrams
56	Electronic Spectra of complex ions
57	Electronic Spectra of complex ions
58	discussion of the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complex ion.
59	discussion of the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complex ion.
60	Revision





# RPS Degree College, Balana (Mahendergarh)

## Curriculum Plan

2020-21(Odd Semester)

**Class and Section:** B.sc 5th Sem Medical

**Subject:** Organic Chemistry

Lecture	Topics
1	Principle of nuclear magnetic resonance
2	The PMR Spectrum
3	Number of signals
4	Peak areas
5	Equivalent and nonequivalent protons positions of signals and chemical shift
6	Shielding and deshielding of protons
7	Proton counting
8	Splitting of signals and coupling constants
9	Magnetic equivalence of protons
10	Discussion of PMR spectra of the molecules: Ethyl bromide
11	Npropyl bromide, Isopropyl bromide, 1,
12	1-dibromoethane, 1, 1,2-tribromoethane, ethanol
13	Acetaldehyde, ethyl acetate, toluene, Benzaldehyde and Acetophenone
14	Simple problems on PMR spectroscopy for structure determination of organic compounds
15	Classification and nomenclature. Monosaccharides
16	Mechanism of osazone formation
17	interconversion of glucose and fructose
18	Chain lengthening and chain shortening of aldoses
19	Configuration of monosaccharides
20	Erythro and threo diastereomers
21	Conversion of glucose into mannose
22	Formation of glycosides, ethers and esters
23	Determination of ring size of glucose and fructose
24	Open chain and cyclic structure of D(+)-Glucose & D(-) Fructose
25	Mechanism of mutarotation
26	Structures of ribose and deoxyribose
27	An Introduction to disaccharides( maltose, sucrose, lactose)
28	Polysaccharides( starch and cellulose) without involving structure determination
29	Organomagnesium compounds: the Grignard reagents-formation
30	Structure and chemical reactions
31	Organozinc compounds: Formation and chemical reactions
32	Organolithium compounds: Formation and chemical reactions



# RPS Degree College, Balana (Mahendergarh)

## Syllabus Plan

2020-21(Odd Semester)

**Class and Section: B.Sc. 5th Medical**

**Subject: Physical Chemistry**

Lecture	Topics
1	Introduction to Syllabus, Scheme of Exam
2	black body radiation
3	spectral distribution of black body radiation
4	Planck's radiation law
5	photoelectric effect
6	Compton effect
7	Schrödinger wave equation
8	eigen values and eigen function
9	operators
10	algebra of operator
11	examples of operator
12	born interpretation and wave function
13	postulates of quantum mechanics
14	difference between classical and quantum mechanics
15	particle in 1 dim box
16	physical properties of solids
17	optical activity and it's examples
18	clausius mosotti equation
19	magnetic properties
20	gouys method
21	dielectric properties of solids
22	introduction to spectra
23	width and intensity
24	types of spectra and radiation's used
25	born openheimer approximation
26	introduction to rotational spectra
27	rigid rotor
28	non rigid rotor
29	application of rotational spectra
30	numerical problems
31	introduction to vibrational spectra
32	harmonic oscillator
33	anharmonic oscillator
34	hot band , overtone, fundamental bands
35	types of vibrations
36	introduction to raman spectra

37	rotational Raman spectra
38	vibrational Raman spectra
39	numerical
40	previous years question paper solution
41	revision and problems



# RPS Degree College, Balana (Mahendergarh)

## Lesson Plan

2020-21(Odd Semester)

**Class and Section:** B.Sc Medical, 5th Sem Zoology

**Subject:** Aquaculture Fish and Fisheries (Zoology)

Lecture	Topics
1	Introduction to Syllabus, Scheme of Exam & Learning Objectives/Outcomes
2	Test to Check the Learning Level of the Students
3	Introduction the World of Fisheries
4	Marine Fisheries of the World
5	Inland Fisheries of the World
6	Capture and culture fisheries
7	Status of Fish production
8	Inland capture fisheries of india
9	Fish culture of India
10	Marine Fisheries of the India
11	EEZ concept of India
12	River system of India
13	Continue
14	Continue
15	Fishes of River system
16	Factors affecting fish yield
17	Lake system
18	Pond system
19	Reservoirs fisheries
20	Cold water fisheries
21	Capture and culture fisheries
22	Fishing Crafts
23	Continue
24	Continue
25	Fishing Gears
26	Continue
27	Permutation
28	Continue
29	Culture of Fin fishes
30	Culture of Prawn
31	Culture of Pearl
32	Natural Fish Seed resources
33	Continue
34	Spawn Investigation Technique
35	Hatchery Seed Production

36	Artificial Fertilisation
37	Factors affecting Induced Breeding
38	Fish seed
39	Continue
40	Technique of Fish culture
41	Continue
42	Cage and Polyculture
43	Management of Fishery
44	Economics of fish farming
45	Marketing of fish fishes
46	Aquaculture Technology
47	Cyropresevation
48	Continue
49	Transgenic Fishes
50	Continue
51	Revision



# RPS Degree College, Balana (Mahendergarh)

## Syllabus Plan

2020-21(Odd Semester)

**Class and Section: B.Sc Medical 5th Sem**

**Subject: Ecology and Evolution (Zoology)**

Lecture	Topics
1	Introduction to Syllabus, Scheme of Exam & Learning Objectives/Outcomes
2	Test to Check the Learning Level of the Students
3	Introduction to Syllabus, Scheme of Exam & Learning Objectives/Outcomes
4	Introduction to Ecology
5	Forms of Ecology
6	Ecological Organization
7	Habitat And Microhabitat
8	Ecological Niche
9	Significance of Ecology
10	Environment
11	Environmental factor Light
12	Environmental factor Temperature
13	Environmental factor Atmospheric Humidity
14	Environmental factor Wind
15	Environmental factor Rainfall
16	Edaphic factors
17	Topographic factors
18	Biotic Factors
19	Ecosystem -Basic concept,Kind of Ecosystem
20	Structure (Components ) of Ecosystem
21	Examples of Ecosystems
22	Complete and Incomplete Ecosystem
23	Trophic Level
24	Food Chain & its Types
25	Food Web or Food Cycle
26	Energy flow in Ecosystem
27	Ecological Pyramid
28	Productivity
29	Biogeochemical cycles Definition and its Types
30	Carbon Cycle,Nitrogen Cycle
31	Oxygen and Water Cycle
32	Phosphorus And Sulphur Cycle
33	Population and its Characters
34	Population Growth Curves
35	Overpopulation and methods to control overpopulation

	36	Evolution introduction
	37	Theories of Origin of Life
	38	Oparin and Haldane theory (Chemogeny)
	39	Biogeny
	40	Urey and Miller Experiment
	41	Origin of Prokaryotic Life
	42	Origin of Eukaryotes
	43	Morphological and Anatomical Evidences
	44	Embryological Evidence
	45	Paleontological Evidence
	46	Biochemical and physiological evidence
	47	Biogeographical and Cytological evidence
	48	Lamarckism
	49	Darwinism
	50	Mutation Theory
	51	Neo-Darwinism
	52	Modes of Natural Selection
	53	Speciation
	54	Micro-evolution
	55	Macro-evolution
	56	Mega-evolution
	57	Phylogeny of Horse
	58	Characters of Modern Horse
	59	Human Evolution
	60	Characters of Modern Man





