

Table:5 TABLE OF SPECIFICATION (MODEL PAPER BIOLOGY XI)

Ch: No	CH: Name	Topic	Sub Topic	Item	Item+ Marks	Cognitive Level	SLOs Selected for model paper Items (Biology)
1	Cells structure and function	Cytoplasmic Organelles	Ribosomes	MCQ	2+2	Understanding	• Explain the structure, chemical composition and function of ribosome.
		Cytoplasmic Organelles	Lysosomes			Application	• Interpret the storage diseases with reference to the malfunctioning of lysosomes.
		Cytoplasmic Organelles	Golgi apparatus	RRQ	1+4	Understanding	• Depscribe the structure and functions of the Golgi complex.
		Cytoplasmic Organelles	Cytoskeleton	ERQ	1+4	Understanding	• Describe the types, structure, composition and functions of cytoskeleton.
2	Biological Molecules	Shape of proteins	Shape of proteins	MCQ	2+2	Knowledge	• List examples and the roles of structural and functional proteins.
		Nucleic Acids	Nucleotides			Application	• Distinguish among the nitrogenous bases found in the nucleotides of nucleic acids.
		Ribonucleic Acid	Ribonucleic Acid	RRQ	1+4	Understanding	• Explain the general structure of RNA.
		Carbohydrates	Monosaccharaides	ERQ	1+5	Application	• Distinguish the properties and roles of monosaccharaides, write their empirical formula and classify them.
3	Enzymes	Feedback Inhibition	Feedback Inhibition	MCQ	1+1	Understanding	• Explain feedback inhibition.
		Factors that affects the rate of enzyme reactions	Inhibitors	RRQ	1+4	Application	• Categorize inhibitors into competitive and non-competitive inhibitors.
		Mode of enzyme action	Lock and Key Hypothesis	ERQ	1+4	Understanding	• Explain the mechanism of enzyme action through Induced Fit Model, comparing it with Lock and Key Model.
4	Bioenergetics	Photosynthesis	Photosynthetic pigments	MCQ	2+2	Understanding	• Describe the roles of photosynthetic pigments in the absorption and conversion of light energy.
		Respiration	Respiratory Electron transport chain			Understanding	• Explain the passage of electron through electron transport chain.
		Photosynthesis	The role of sunlight in photosynthesis	RRQ	1+4	Understanding	• Explain the role of light in photosynthesis.
		Photorespiration and its effects	Photorespiration and its effects	ERQ	1+4	Knowledge	• Define photorespiration and outline the events occurring through it.

5	A cellular Life	Classification of Virus	Classification of Virus	MCQ	1+1	Application	<ul style="list-style-type: none"> Classify viruses on the bases of their hosts and structure.
		AIDS and HIV Infection	Symptoms of HIV	RRQ	1+4	Knowledge	<ul style="list-style-type: none"> List some common control measures against the transmission of AIDS.
6	Prokaryotes	Cyanobacteria	Structure of bacteria	MCQ	2+2	Application	<ul style="list-style-type: none"> Compare cell wall differences in Gram-positive and Gram-negative bacteria.
		Bacterial Flora Humans	Benefits of normal Bacterial flora			Understanding	<ul style="list-style-type: none"> Describe the benefits of the bacterial flora of humans.
		Control of harmful Bacteria	Physical method	RRQ	1+4	Knowledge	<ul style="list-style-type: none"> List the chemical and physical methods used to control harmful bacteria.
		Some important bacterial diseases of plants	Some important bacterial diseases of plants	ERQ	1+5	Understanding	<ul style="list-style-type: none"> Describe important bacterial diseases in plants in terms of spots, blights, soft rots, wilts, and galls; emphasizing their symptoms, causative bacteria, and preventative measures.
7	Protists and Fungi	Importance of Fungi	Edible Fungi	MCQ	1+1	Understanding	<ul style="list-style-type: none"> Give examples of edible fungi.
		Symbiosis	Lichens	RRQ	1+4	Understanding	<ul style="list-style-type: none"> Explain the mutualism established in mycorrhizae and lichen associations.
8	Diversity among Plants	Non-vascular Plants	Uses of Bryophytes	MCQ	1+1	Knowledge	<ul style="list-style-type: none"> List the advantages/uses of bryophytes.
		Life cycle of Angiosperms	Inflorescence and its major types	RRQ	1+4	Understanding	<ul style="list-style-type: none"> Define inflorescence and describe its major types.
9	Diversity among Animals	Sub phylum Vertebrata	Class Reptilia	MCQ	1+1	Understanding	<ul style="list-style-type: none"> Describe the general characteristics of amphibians, reptiles, birds and mammals.
		Complexity in Animals	Diploblastic and Triploblastic Organization	RRQ	1+4	Application	<ul style="list-style-type: none"> Differentiate pseduocoelomates, acoelomates and coelomates.
		Introduction	Introduction	ERQ	1+5	Understanding	<ul style="list-style-type: none"> Describe the general characteristics of animals.
10	Form and Functions in Plants	Transport in Plants	Vascular tissues and transport of materials	MCQ	2+2	Understanding	<ul style="list-style-type: none"> Describe the structure of xylem vessel elements, sieve tube elements, companion cells, trachieds and relate their structures with functions.
		Photoperiodism	Photoperiodism			Understanding	<ul style="list-style-type: none"> Describe the mechanism of photoperiodism with reference to the mode of action of phytochrome.
		Annual rings	Annual rings	RRQ	1+4	Understanding	<ul style="list-style-type: none"> Explain how annual rings are formed.

		Role of Stomata in Gaseous Exchange and Transpiration	Role of Stomata in Gaseous Exchange and Transpiration	ERQ	1+5	Application	<ul style="list-style-type: none"> Relate transpiration with gas exchange in plants.
11	Digestion	Disorders related to digestive system and food habits	Ulcer	MCQ	1+1	Understanding	<ul style="list-style-type: none"> Describe the causes, prevention, and treatment of the following disorders; ulcer, food poisoning, dyspepsia.
		Structure of stomach	Structure of stomach	RRQ	1+4	Understanding	<ul style="list-style-type: none"> Describe the structure of stomach and relate each component with the mechanical and chemical digestion in stomach.
12	Circulation	Electrocardiogram	Electrocardiogram	MCQ	1+1	Knowledge	<ul style="list-style-type: none"> List the principles and uses of Electrocardiogram.
		Cardiac Cycle and Phases of Heartbeat	Cardiac Cycle and Phases of Heartbeat	RRQ	1+4	Understanding	<ul style="list-style-type: none"> State the phases of heartbeat.
		Atherosclerosis and arteriosclerosis.	Atherosclerosis and arteriosclerosis.	ERQ	1+4	Knowledge	<ul style="list-style-type: none"> Identify the factors causing atherosclerosis and arteriosclerosis.
13	Immunity	Autoimmune disorders	Autoimmune disorders	MCQ	1+1	Understanding	<ul style="list-style-type: none"> Describe the autoimmune diseases.
		Basic types of Immunity	Specific defense mechanisms	RRQ	1+4	Application	<ul style="list-style-type: none"> Categorize the immune system that provides specific defense and acts as the most powerful means of resisting infection.