ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

EXAMINATION SYLLABUS 2020-2021

Grades: XI **Subject: Biology**

This exam syllabus is produced to facilitate teachers, students and the test setters to teach, learn and assess subject specific learning. This syllabus is condensed to align the course content with the teaching learning time during. COVID 19.

DETAILED SYLLABUS

Chapter	TOPICS / THEMES	SUB TOPICS	Page number	STUDENT LEARNING OUTCOMES	COGNITIVE LEVELS		
					K	U	A
1. The Biology	Biology and its majors	Five kingdom classification	Page # 3		√	√	
		Major branches of biology	Page # 4		√		
	Level of biological organization	Study of all levels of organization from atomic level to biosphere.	Page # 6		√		
		Living word in the light of Islamic thought	Page # 7		√		
		Definitions of symbiosis, commensalism, mutualism and parasitism	Page # 8		√	√	
	Relationship between structure and	Chemical composition of cell	Page # 18			√	

2.Biological Molecules	function of molecules						
	Organic Molecules		Page # 21		√		
	Synthesis of large molecules by condensation	Condensation Macromolecules, monomers and polymers	Page # 21			√	
	Breaking of large molecule by hydrolysis	Hydrolysis Process of hydration and dehydration	Page # 21-22		√	√	
3.Enzymes	Enzymes and their Characteristics	Energy of activation	Page # 42		√	√	
		Endoenzymes and exoenzymes	Page # 43		√		
		Mode of action of enzymes	Page # 44		√	√	
		Induce fit model	Page # 44-45			√	
	Factors affecting Enzyme's activity	Concentration of substrate	Page # 46		√	√	
		Temperature	Page # 46		√	√	
		pH	Page # 46		√	√	
		Co-enzymes	Page # 47-48		√	√	
		Water	Page # 49		√	√	
		Radiation	Page # 49		√	√	
4. The Cell	Cell as basic unit of Life		Page # 53		√	√	
	Cell Theory		Page # 53			√	
	Eukaryotic Cell	Plasma membrane Fluid mosaic model Cell wall	Page # 57		√	√	
		Active and passive transport	Page # 58-59		√	√	
		Endoplasmic reticulum	Page # 63		√		

	Cytoplasmic organelles & membrane system	Mitochondria	Page # 64		√		
		Golgi apparatus	Page # 65		√		
		Lysosomes	Page # 66		√		
		Plastid	Page # 67		√		
		Peroxisome, Glyoxysome , Ribosomes, centriole and vacuole	Page # 68-72		√		
5. Variety of Life	Needs and Basis of Biological Classification	Homology, biochemistry, cytology, genetics	Page # 79-81		√		
	Concept of Hierarchy	Units of biological classification Classification of wheat and housefly	Page # 81		√	√	
	Two Kingdom to Five Kingdom Systems		Page # 84 -86		√	√	
	Viruses	(Discovery, Characteristics, Structure and classification)	Page # 86-89		√	√	
	Life cycle of Bacteriophage	The lytic cycle The lysogenic cycle	Page # 90-92		√	√	
	Animal Diseases	Poliomyelitis, Colds, AIDS, Flu and Hepatitis	Page # 93-96		√		
6. The Kingdom Prokaryote	Bacteria	(Discovery, Structure, Nutrition, Respiration and Reproduction)	Page # 101-108		√	√	
	Cyanobacteria	(Nostoc structure, nutrition, reproduction and importance)	Page # 110-112		√	√	

7.The Kingdom Protoctista	Diversity among Protista (Plant-like algae, Fungi-like Protoctista)	Algae (cholera and Ulva) Slime mold and water mold	Page # 117-123			√	
	Protozoa and its classification	Class flagellate Class Sarcodina Class Ciliate Class Suctoria Class Sporozoa (life cycle of malarial parasite)	Page# 123 - 126			√	
8.The Kingdom Fungi	The body of fungus	Nutrition in Fungai	Page # 132-133			√	
	Classification of fungi with reference to structure, reproduction and importance)	Zygomycota Ascomycota Basidiomycota Deutromycota	Page # 137-146		√	√	
9.The Kingdom Plantae	Classification of Plants		Page # 152			√	
	Bryophytes	(General characteristics; adaptations; life cycle and classes)	Page # 153-157			√	
	Tracheophytes		Page # 158			√	
	Major Groups of Vascular Plants Spermopsida successful group of land plant		Page # 167-175		√	√	
10.The Kingdom Animalia	Phylum Porifera (General Characteristics) Phylum Cnidaria (General		Page # 196-218		√	√	

	Characteristics; Diploblastic organization. Polymorphism and classes) General Characteristics and classes Phylum Platyhelminthes Phylum Nemathelminths Phylum Annelida Phylum Mollusca and classes Phylum Arthropoda Phylum Echinodermata						
	Phylum Chordata (Basic chordates) Pisces, Amphibia, Reptilia, Aves and Mammalia		Page # 219-232		√	√	
11.Bioenergetics	Need of Energy and role of ATP as energy		Page # 245- 246			√	
	Photosynthesis (Raw material; product, process of photosynthesis)		Page # 246-256		√	√	
	Cellular respiration Aerobic and anaerobic respiration	Oxidative photophosphorylation Fermentation Glycolysis	Page # 258-265			√	

		Breakdown of pyruvic acid Alcoholic and lectic acid fermentation. Krebs's cycle Electron transport chain					
12.Nutrition	Autotrophic and Heterotrophic mode of Nutrition in Plants	Phototrophic and chemotrophic nutrition in plants. Parasitic , saprophytic and carnivorous plants	Page # 275- 284			√	
	Holozoic nutrition		Page # 285-286			√	
	Human Digestive System	Oral cavity Pharynx and swallowing Oesophagous Stomach, small intestine, large intestine. Liver and pancreas. Anus and egestion	Page # 291-300		√	√	
13.Gaseous Exchange	Gaseous Exchange in plants	photorespiration	Page # 309-312		√	√	
	Gaseous Exchange in animals	Respiratory organs of aquatic and terrestrial animals	Page # 312-316		√	√	
	Human respiratory system	Air passage way, Lungs Breathing mechanism	Page # 317-320		√	√	
14.Transport	Transport in Plants (Uptake and transport of water	Diffusion Facilitated diffusion Active transport			√	√	

	and minerals)	Osmosis Imbibition					
	Ascent of sap	Pathway and movement of water and minerals	Page # 336-338			√	
	Transpiration	(process, types, stomata structure and opening and closing)	Page # 339-341			√	
	Transport in Animals	Hydra and planaria	Page # 345-346		√	√	
	Circulatory system in man	Types of circulatory system Single and double circuit plan	Page # 346-351		√	√	
	Human heart	(Structure, Cardiac Cycle, heart beats)	Page # 355-357		√	√	
	Blood vessels Lymphatics System	Arteries, veins, capillaries Blood pressure and blood flow Lymph vessels and lymph node	Page # 359-363			√	
	Immune system	Division of immune system	Page # 366-370		√	√	