



**ZIAUDDIN UNIVERSITY**  
EXAMINATION BOARD

**RESOURCES FOR**  
**“HSC-II ZOOLOGY**  
**ZUEB EXAMINATIONS 2021**



**PREFACE:**

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from [www.zueb.pk](http://www.zueb.pk) to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

### **ACADEMIC UNIT ZUEB:**

### 1: Multiple Choice Questions:

The Multiple-Choice Questions with a stem, correct answer and 3 distractors or plausible wrong answers format is designed to assess the content and thinking of students from; R (Remembering); U(Understanding) and A (Applying, Analyzing, Evaluating, Creating). The questions are also classified into three difficulty levels accordingly; D (DIFFICULT), M (MODERATE), E (EASY)

#### HOW TO ATTEMPT AN MCQ:

##### MCQ:

- EACH MCQ HAS FOUR OPTIONS, A, B, C AND D. SELECT ONE OPTION AS THE BEST ANSWER AND FILL IN THE CIRCLE OF THAT OPTION, FOLLOWING THE INSTRUCTIONS GIVEN BY THE INVIGILATOR.
- USE BLACK PEN/PENCIL TO FILL IN THE CIRCLE.

Correct Way	Wrong Ways		
1	1	2	3
(a)	(a)	(a)	(a)
(b)	(b)	(b)	(b)
(c)	<del>(c)</del>	(c)	<del>(c)</del>
(d)	(d)	(d)	(d)

S#	MCQ'S MATERIAL	KEY	CL	DL
1.	Regulation of temperature upto a tolerable limit a. Osmoregulation b. Homeostasis c. Feedback mechanism d. Thermoregulation	D	K	E
2.	Cockroaches and other insects have excretory system which consists of long, thin, blindtubules called a. Flame cells b. Malpighian tubules c. Metanephridia d. None	B	U	M
3.	The longest and strongest bone in human body is a. Femur b. Tibia c. Fibula d. None	A	U	E
4.	The check and balance mechanism operating in the body is called a. Receptors	B	K/R	M

	<ul style="list-style-type: none"> <li>b. Feedback system</li> <li>c. Both</li> <li>d. None</li> </ul>			
5.	<p>A solution which has high concentration of solvent than solute is called</p> <ul style="list-style-type: none"> <li>a. Hypotonic</li> <li>b. Hypertonic</li> <li>c. Isotonic</li> <li>d. None</li> </ul>	A	K/R	E
6.	<p>Planaria has _____ type of Nervous system</p> <ul style="list-style-type: none"> <li>a. Diffused Nervous system</li> <li>b. Centralized Nervous system</li> <li>c. Both a&amp; b</li> <li>d. None of these</li> </ul>	B	K	E
7.	<p>When thyroid is enlarged due to low intake of iodine in diet, this condition is called</p> <ul style="list-style-type: none"> <li>a. Goiter</li> <li>b. Cretinism</li> <li>c. Myxedema</li> <li>d. Thyroxin</li> </ul>	A	U	M
8.	<p>The main body of neuron is called</p> <ul style="list-style-type: none"> <li>a) Dendrite</li> <li>b) Axon</li> <li>c) Cell body</li> <li>d) Nissl body</li> </ul>	C	U	E
9.	<p>In synthesis of DNA strand from RNA, the enzyme involve is</p> <ul style="list-style-type: none"> <li>a. RNA polymerase</li> <li>b. DNA polymerase</li> <li>c. Ligase</li> <li>d. Reverse transcriptase</li> </ul>	B	K/R	M
10.	<p>Fossil fuel, oil, coal and natural gas are included in</p> <ul style="list-style-type: none"> <li>a. Renewable resources</li> <li>b. Non-renewable resources</li> <li>c. Productivity</li> <li>d. Symbiosis</li> </ul>	B	K/R	E
11.	<p>Animals which lay eggs are called</p> <ul style="list-style-type: none"> <li>a. Oviparous</li> <li>b. Viviparous</li> <li>c. Larviparous</li> <li>d. None</li> </ul>		K	E
12.	<p>Process by which female gametes are produced is called</p> <ul style="list-style-type: none"> <li>a. Oogenesis</li> <li>b. Spermatogenesis</li> <li>c. Gametogenesis</li> <li>d. All</li> </ul>	A	U	M
13.	<p>Which type of reproduction is common in sponges?</p> <ul style="list-style-type: none"> <li>a. Budding</li> <li>b. Fission</li> <li>c. Parthenocarpy</li> <li>d. sporulation</li> </ul>	B	U	E
14.	<p>The Study of development of an organism from egg to adult is termed as</p> <ul style="list-style-type: none"> <li>a. Embryology</li> <li>b. Development biology</li> <li>c. Ecology</li> <li>d. None</li> </ul>	B	K/R	M
15.	<p>The morula is changed into</p> <ul style="list-style-type: none"> <li>a. Blastula</li> </ul>	A	K/R	E

	b. Gastrula c. Extrula d. Moro blastula			
16.	The nervous system of chick developed from a. Ectoderm b. Endoderm c. Mesoderm d. None of these		K	E
17.	According to him theory of organic evolution based on the principle of use and disuse of organs. a. Lamarck b. Darwin c. Weismann d. None of these	A	U	M
18.	The manipulation of genetic material of any organism to provide some useful products is called a. Genetic epistasis b. Bioenergetics c. Genetic engineering d. None of these	C	U	E
19.	One of following possess hydrostatic skeleton a. Crab b. Butterfly c. Earthworm d. All of these	C	K/R	M
20.	The point of attachment of muscle with bone is called a. Tendon b. Ligament c. Joint d. None	A	K/R	E
21.	Which one the following is the functional unit of excretory organ in vertebrates a. Protonepridia b. Metanephridia c. Malphigian tubule d. Nephron	D	K	E
22.	The gas responsible for global warming is 2 * Oxygen * Nitrogen * Carbon dioxide * Chlorine	C	U	M
23.	The non-renewable resource is * Wildlife * Forests * Water * Coal	D	U	E
24.	Unifactorial defects refers to * One gene * Many genes * Environmental factors * Genome	A	K/R	M
25.	Which of the following can serve as a vector in rDNA technology * Plasmid * Bacteriophage * Algae * Mosquito	A	K/R	E
26.	The non-coding sequence of gene are * Codon * Exon * Intron * Anti-codon	C	K	E
27.	Which of the following is the correct order * morula-cleavageblastula * blastula-gastrulamorula * cleavage-morulablastula * neurula-morulablastula	C	U	M
28.	The cells of pancreas which are responsible for the production of Insulin is * Beta cells * Gamma cells * Alpha cells * Dry cells	A	U	E
29.	Ventral roots of spinal cord contains axons of * Motor neuron * Inter neuron * Sensory neuron * Neuroglial cells	A	K/R	M
30.	The total number of polar bodies in oogenesis are * 4 * 6 * 9 * 3	A	K/R	E
31.	The end of the fertility in human female is called * Menopause * Lactation * Ovulation *	A	K	E
32.	Somatotropin hormone is responsible for * Sperm production * Melanin production * Production of milk * Growth	D	U	M
33.	Glucagons, ADH, Oxytocin belongs to which one of the following * Enzymes *	A	U	E

	Peptide hormones * Steroid hormones * Modified hormones			
34.	The cavities which are present in the brain are called * Atrium * Sac * Ventricles * Auricle	C	K/R	M
35.	Knee-jerk is an example of * Poly synaptic * Monosynaptic * Synaptic * Tetrasynaptic		K/R	E
36.	Which one of the following is the locomotory organs of Class Mastigophora * Flagella * Ciliate * Pseudopodia * Parapodia		K	E
37.	Smooth muscle are found in * Heart * Skeleton * Hollow structure * Nerve	D	U	M
38.	Kidney stones or Calculi are 70% composed of * Calcium * Calcium phosphate * Magnesium phosphate * Sodium oxalate	B	U	E
39.	Urinary System of man comprise of: [In Order) A)Kidney → Ureters → Bladder → Pelvis → Urethra B)Kidney → Urethra → Ureters → Bladder → Pelvis C)Kidney → Pelvis → Ureters → Bladder → Urethra D)Kidney → Pelvis → Urethra → Bladder → Ureters E)Pelvis → Kidney → Bladder → Ureters → Urethra	C	K/R	M
40.	Structural and functional unit of kidney is A)VillusB)NeuronsC)Nephrone D)Glial CellE)Hepatocytes	C	K/R	E
41.	Correct Sequence of Nephron Structure: A)Bowman's Capsule → Distal Convoluted Tubule → Proximal Convoluted Tubule → Collecting Duct → Loop of Henle B)Distal Convoluted Tubule → Bowman's Capsule → Proximal Convoluted Tubule → Loop of Henle → Collecting Duct. C)Bowman's Capsule → Proximal Convoluted Tubule → Collecting Duct → Loop of Henle → Distal Convoluted Tubule. D)Bowman's Capsule → Collecting Duct → Proximal Convoluted Tubule → Loop of Henle → Distal Convoluted Tubule. E)Bowman's Capsule → Proximal Convoluted Tubule → Loop of Henle → Distal → Convoluted Tubule → Collecting Duct.	E	K	E
42.	Simplest skeleton found in soft bodies invertebrates is: A)ExoskeletonB)Hydrostatic skeleton C) Endoskeleton D)Axial SkeletonE)Appendicular Skeleton	B	U	M
43.	Hydrostatic skeleton is found in: A)MolluscsB)OctopusC)Crabs D)HumansE)Earth Worms	E	U	E
44.	Molluscs have an exoskeleton made up of: A)SilicaB)ChitinC)Cuticle D)LimeE)Liquid Jelly	B	K/R	M
45.	Axial skeleton includes: A)Skull, Pelvic girdles, Bones of arms and legs B)Skull, Sternum, Pelvic & Pectoral girdles C)Skull, Sternum, Vertebrae and ribs D)Skull, Ribs, Bones of arms and legs E)Ribs, Sternum, Vertebrae, Pelvic Girdle	C	K/R	E
46.	Appendicular skeleton includes: A)Bones of Arms and Legs, Pelvic and Pectoral Girdle B)Ribs, Sternum, Vertebrae C)Sternum. Bones of arms and legs, Vertebrae D)Ribs, Vertebrae, Pelvic & Pectoral Girdle E)Pelvic Girdle, Ribs, Sternum, Bones of Arms and Legs	A	K	E
47.	Locomotion in Snail is brought about by: A)CiliaB)FlagellaC)Foot D)Tube FeetE)Legs	C	U	M

48.	The activity of two cerebral hemispheres is co-ordinated by: A)Corpus CallosumB)Superior Sagittal SinusC)Corpus Cavernous D)Vernix CascosaE)Limbic System	A	U	E
49.	The hippocampus is involved in: A)Perception of pain and pleasure B) Regulation of pituitary gland C)Long term memoryD)Short term memory E)Intelligence and Reasoning	C	K/R	M
50.	The brain-stem consists of: A)Thalamus, Hypothalamus, AmygdalaB)Cerebrum, Cerebellum, Thalamus C)Medulla Oblongata, Pons, Cerebellum D) Medulla Oblongata, Mid Brain, Cerebellum E)Medulla Oblongata, Mid Brain, Pons	E	K/R	E
51.	Master gland” was former name of: A)Pituitary gland B)Adrenal glandC)Thyroid gland D)Parathyroid glandE)Pinealgland	A	K	E
52.	The median pituitary lobe secretes. A)TSH (Thyroid Stimulating hormone)B)FSH (Follicular Stimulating hormone) C)ACTH (Adrenocorticotrophin hormone) D) MSH (Melanocyte Stimulating hormone)	D	U	M
53.	The posterior pituitary lobe secretes: A) TSH B)FSH C)ADH D)MSH E)LH	C	U	E
54.	The over-production of STH (Somatotrophin) afteradult-hood results in: A)Acromegaly B)GigantismC)Dwarfism D)MyxedemaE)Cretinism	A	K/R	M
55.	ExcessIve secretion of STH during childhood results in: A)AcromegalyB)GigantismC)Dwarfism D)CretinismE)Myxedema	B	K/R	E
56.	Ovulation occurs at day: A)5B)9C)12 D)14E)19	D	K	E
57.	The longest phase of menstrual cycle is: A)Menstrual phase B)Follicle phase C)Ovulation phase D)Corpus Luteum phase E)All are incorrect	D	U	M
58.	In Combined Immunodeficiency Disease, the cells of the bone marrow cannot produce anenzyme called: A)DNA polymeraseB)DNA ligseC)Reverse Transcriptase D)Adenosine DeaminaseE)Adenosine Transaminase	D	U	E
59.	Small amount of amniotic fluid is withdrawn from the amniotic sac for diagnostic purposes: A)Amniography B)Amnio-rhesus C)Amniocentesis D)Polymerase Chain Reaction E) Western Blot Analysis	C	K/R	M
60.	The first illness likely to be treated by gene therapy is: A)Sudden Infant Death Syndrome B)Auto Immunodeficiency Disease C)Acquired Immunodeficiency Syndrome D)Combined Immunodeficiency disease	D	K/R	E
61.	Cystic Fibrosis” is a disease of: A) Heart B)Liver C)Kidneys D)Lung E)Brain	D	K	E
62.	Small changes through successive generations promote the origin of new organs or characters, which are transmitted to its offspring in the next generation”. This is called: A)Survival of the fittest B)inheritance of two traits C)Theory of Natural Sciection D) Theory of origin of species E)Inheritance of acquired characters	E	U	M

63.	Lamarck's theory based on following points except: A) Effects of environment B) Use and disuse of organs C) Natural Selection D) Inheritance of acquired characters E) Evolution of Giraffe to support evolution theory	C	U	E
64.	Theory of Natural Selection" was proposed by: A) Charles Darwin B) Lamarck C) T. H. Morgan D) Gregor Johann Mendel E) Weismann	A	K/R	M
65.	Darwin's theory based on following points except: A) Struggle for existence B) Over production C) Inheritance of acquired characters D) Survival of the fittest E) Variations and heredity	C	K/R	E
66.	Struggle between the individuals of same species having similar needs is: A) Inter specific struggle B) Sub-specific struggle C) Intra specific struggle D) Environmental struggle E) Occupational struggle	C	K	E
67.	Smooth muscles are A) Voluntary in nature B) involuntary in nature C) binucleated D) striated	B	U	M
68.	The joints of elbow and knee are A) hinge joints B) pivot joints C) ball and socket joints D) fixed joints.	A	U	E
69.	The joints connecting the bones of the skull A) hinge joints B) fixed joints C) movable joints D) ball and socket joints.	B	K/R	M
70.	Arthritis of joints is called A) rheumatic arthritis B) osteoarthritis c) juvenile arthritis d) psoriatic arthritis.	B	K/R	E
71.	Bowed legs are seen in A) Rickets B) microcephaly C) cleft palate D) osteoporosis	A	K	E
72.	Lower jaw is supported by a single bone called A) Fibia B) Dentary C) mandible D) maxilla	B	U	M
73.	Carpal bones articulate with A) Tarsals B) Meta tarsals C) meta carpals D) phalanges	C	U	E
74.	Meninges are A) One connective tissue covers B) Two connective tissue covers c) three connective tissue covers D) four connective tissue covers	C	K/R	M
75.	Struggle among the members of different species is: A) Inter specific struggle B) Sub-specific struggle C) Intra specific struggle D) Environmental struggle E) Pre-specific struggle	A	K/R	E
76.	Spinal cord is differentiated into two areas A) White and black matter B) White and grey matter C) Grey and black matter D) Black and Red matter	B	K	E
77.	Fight or flight response is regulated by A) Sympathetic nervous system B) Parasympathetic nervous system C) central nervous system D) somatic nervous system	A	U	M
78.	Posterior pituitary is also called A) adenohypophysis B) neurohypophysis c) islets of Langerhans D) hypothalamus	B	U	E
79.	Beta cells of pancreas secrete A) Insulin B) glucagon c) parathyroid hormone d) T3	A	K/R	M
80.	PTH (parathyroid hormone) A) Decreases reabsorption of calcium in kidneys B) increases reabsorption of calcium in kidneys C) stops demineralization D) is released in response to high level of calcium in blood	B	K/R	E
81.	Melatonin is released in night by A) Parathyroid gland B) pineal gland c) hypothalamus D) adrenal gland.	B	K	E
82.	The male gonads secrete A) Androgens B) estrogen c) thyroid hormone d) melatonin	A	U	M
83.	The principle of competitive exclusion is given by a) G.F. Gause b) Singer and Nicholson c) Lamarck d) Darwin	A	U	E
84.	The former populations which are in a threat of elimination are called A) Healthy species B) Extinct species c) endangered species d) fossil fuels	C	K/R	M
85.	Recombinant technology has opened the door for evolution by	A	K/R	E



	A) Artificial selection B) hypothesis. C) experiments d) natural selection			
<b>86.</b>	The cycle which ensures that the egg is available for fertilization A) Menstrual cycle B) oestrous cycle c) spermatogenesis d) ovarian cycle	<b>B</b>	<b>K</b>	<b>E</b>
<b>87.</b>	Menstruation is the A) Stopping of bleeding B) Onset of bleeding C) Formation of uterine wall D) Relasing of egg	<b>B</b>	<b>U</b>	<b>M</b>
<b>88.</b>	Low fsh and high estrogen level initiate the secretion of a) LH b) androgens c) melatonin d) msh	<b>A</b>	<b>U</b>	<b>E</b>
<b>89.</b>	The ovulated egg enters oviduct where A) Fertilization always occurs b) fertilization may occur c) zygote is implanted d) egg is discarded	<b>B</b>	<b>K</b>	<b>E</b>
<b>90.</b>	Germinal Continuity Theory” was proposed by: A)Hutton B)Linark C)Weismann D)Darwin E)T.H.Morgan	<b>C</b>	<b>U</b>	<b>M</b>
<b>91.</b>	Jet propulsion is seen in A) Jelly fish B) Amphibians C) Snail D) Cockroach	<b>A</b>	<b>U</b>	<b>E</b>
<b>92.</b>	Water vascular system is seen in A) Earthworm b) snail c) starfish d) cockroach	<b>C</b>	<b>K/R</b>	<b>M</b>
<b>93.</b>	The distal convulated tubule finally opens into a) Collecting ducts b) Glomerulus c) Ureter d) Urethra	<b>A</b>	<b>K/R</b>	<b>E</b>