

**BOARD OF INTERMEDIATE EDUCATION, KARACHI**  
**H.S.C. Annual Examinations 2021**

**(MODEL QUESTION PAPER)**

**ZOOLOGY PAPER-II**  
**(Science Pre-Medical Group)**

**Total Duration: 01 Hour 30 minutes**

**Time Allowed: 30 Minutes**

**SECTION "A" (M.C.Qs)**

**Marks: 22**

**NOTE: Attempt all multiple-choice questions. All carry equal marks.**

- 1. Which one the following is the functional unit of excretory organ in vertebrates**  
\* Protonephridia      \* Metanephridia      \* Malphigian tubule      \* Nephron
- 2. Kidney stones or Calculi are 70% composed of**  
\* Calcium      \* Calcium phosphate      \* Magnesium phosphate      \* Sodium oxalate
- 3. The locomotion in snail takes place with the help of**  
\* Muscular foot      \* Muscular arm      \* Tentacle      \* Jet propulsion
- 4. Smooth muscle are found in**  
\* Heart      \* Skeleton      \* Hollow structure      \* Nerve
- 5. Which one of the following is the locomotory organs of Class Mastigophora**  
\* Flagella      \* Ciliate      \* Pseudopodia      \* Parapodia
- 6. Knee-jerk is an example of**  
\* Poly synaptic      \* Monosynaptic      \* Synaptic      \* Tetrasynaptic
- 7. The cavities which are present in the brain are called**  
\* Atrium      \* Sac      \* Ventricles      \* Auricle
- 8. Glucagons, ADH, Oxytocin belongs to which one of the following**  
\* Enzymes      \* Peptide hormones      \* Steroid hormones      \* Modified hormones
- 9. The part of brain involved in the long term memory is**  
\* Amygdala      \* Hippocampus      \* Hypothalamus      \* Thalamus
- 10. Somatotropin hormone is responsible for**  
\* Sperm production      \* Melanin production      \* Production of milk      \* Growth
- 11. The end of the fertility in human female is called**  
\* Menopause      \* Lactation      \* Ovulation      \* Gestation
- 12. The total number of polar bodies in oogenesis are**  
\* 4      \* 6      \* 9      \* 3
- 13. Ventral roots of spinal cord contains axons of**  
\* Motor neuron      \* Inter neuron      \* Sensory neuron      \* Neuroglial cells
- 14. The cells of pancreas which are responsible for the production of Insulin is**  
\* Beta cells      \* Gamma cells      \* Alpha cells      \* Dry cells
- 15. Which of the following is the correct order**  
\* morula-cleavage-  
blastula      \* blastula-gastrula-  
morula      \* cleavage-morula-  
blastula      \* neurula-morula-  
blastula
- 16. The non-coding sequence of gene are**  
\* Codon      \* Exon      \* Intron      \* Anti-codon
- 17. Which of the following can serve as a vector in rDNA technology**  
\* Plasmid      \* Bacteriophage      \* Algae      \* Mosquito
- 18. Unifactorial defects refers to**  
\* One gene      \* Many genes      \* Environmental factors      \* Genome
- 19. The non-renewable resource is**  
\* Wildlife      \* Forests      \* Water      \* Coal
- 20. The gas responsible for global warming is**

- |  |                      |                      |               |
|--|----------------------|----------------------|---------------|
| * Oxygen   | * Nitrogen           | * Carbon dioxide     | * Chlorine    |
| <b>21. Which one of the following is used as refrigerants and foaming agents</b> |                      |                      |               |
| * Oxygen   | * Nitrogen           | * Chlorofluro-Carbon | * Chlorine    |
| <b>22. Which one of the following is not vestigial organs found in man</b>       |                      |                      |               |
| * Coccyx   | * Vermiform appendix | * Eye lids           | * Ear muscles |

**Time: 01 hour**

**(14 marks)**

### **SECTION B**

**NOTE: Attempt any FOUR questions from Reasoning questions and THREE from Non-reasoning questions. All questions carry equal marks.**

**(a) Reasoning Questions :**

- i. Why hypothalamus is called thermostat of the body. **OR** Why do freshwater fishes excrete dilute urine and marine fishes excrete concentrated urine?
- ii. Why moderate form of fever is good for health. **OR** Why the cardiac muscles are striated and involuntary in nature.
- iii. What causes abnormal muscle contraction in sportsman? **OR** How hydrostatic skeleton facilitates locomotion in soft bodied animals?
- iv. What are the causes of eutrophication? **OR** Why nervous coordination is quick as compared to the chemical coordination?
- v. Why parthenogenesis is considered as semi-sexual in nature. **OR** Why identical twins are similar but fraternal twins are not.
- vi. How hermaphroditic condition is advantageous for the parasitic mode of life? **OR** How DNA fingerprinting helps in solving criminal cases?

**(b) Non-Reasoning Questions:**

- i. Explain the role of brain in regulating fever. **OR** Write any four functions of liver.
- ii. Define Joints. Name different types of joints. **OR** Differentiate between Cortical and Juxta-medullary nephron.
- iii. Explain three types of neuron on the basis of function. **OR** Different between Parasympathetic and Sympathetic nervous system.
- iv. Write four objections on Lamarck's Theory. **OR** Write a short note on principal of competitive exclusion.
- v. Define Regeneration and Aging. **OR** Discuss briefly Artificial selection and its role.
- vi. Differentiate between renewable and non-renewable resources. **OR** Describe Gene sequencing.

### **SECTION C**

#### **DESCRIPTIVE QUESTIONS**

**NOTE: Attempt any ONE question. All questions carry equal marks. Attempt all parts of a question. Draw labelled diagram where necessary.** (9 marks)

- Q3.** (a) Define Thermoregulation and explain thermoregulation in mammals in detail. (5)  
 (b) Discuss the homeostatic function of liver. (4)
- Q4.** (a) Define muscles and describe in detail structure of skeletal muscles. (5)  
 (b) Describe the mechanism of contraction of skeletal muscles. (4)
- Q5.** (a) Define Ovarian cycle. Describe the phases of menstrual cycle in detail with the help of a labeled diagram. **OR** Describe in detail Central nervous system in man (Diagram is not required). (5)  
 (b) Explain the process of Spermatogenesis or Oogenesis. (4)

**Q6.** (a) What is Biotechnology. Explain the four steps of Recombinant DNA technology.

(5)

(b) Write a note on DNA finger printing.

(4)

