

**B.Sc. ZOOLOGY
FOURTH SEMESTER
ANIMAL PHYSIOLOGY
BSZ-401**

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1 × 20 = 20

1. What is the term for the volume of blood ejected by the ventricles during systole?
 - a. Stroke volume
 - b. End-diastolic volume
 - c. Cardiac output
 - d. Ejection fraction
2. Which part of the heart's conduction system is responsible for initiating the heartbeat?
 - a. SA node
 - b. AV node
 - c. Bundle of His
 - d. Purkinje fibers
3. What is the role of the sodium-potassium pump in neuronal function?
 - a. Maintaining the resting membrane potential
 - b. Facilitating neurotransmitter release
 - c. Initiating action potentials
 - d. Regulating synaptic transmission
4. Which ion plays a key role in triggering the release of neurotransmitters into the synaptic cleft?
 - a. Sodium (Na⁺)
 - b. Potassium (K⁺)
 - c. Calcium (Ca²⁺)
 - d. Chloride (Cl⁻)
5. Which component of blood is involved in the formation of a blood clot?
 - a. Fibrinogen
 - b. Albumin
 - c. Hemoglobin
 - d. Globulins
6. Which type of neuron is responsible for transmitting signals from the central nervous system to muscles or glands?
 - a. Sensory neuron
 - b. Motor neuron
 - c. Interneuron
 - d. Efferent neuron
7. The closure of which valves is responsible for the first heart sound (Lub) heard during the cardiac cycle?
 - a. Atrioventricular valves
 - b. Pulmonary valves
 - c. Semilunar valves
 - d. Tricuspid valves
8. What phase of the cardiac cycle is characterized by ventricular filling with blood?
 - a. Isovolumetric contraction
 - b. Rapid ejection
 - c. Ventricular diastole
 - d. Ventricular systole
9. Which type of leukocyte releases histamine and other inflammatory mediators during allergic reactions and parasitic infections?
 - a. Neutrophil
 - b. Eosinophil
 - c. Basophil
 - d. Lymphocyte

10. Which vitamin is essential for the synthesis of clotting factors II, VII, IX, and X in the liver?
- | | |
|--------------|----------------|
| a. Vitamin A | b. Vitamin B12 |
| c. Vitamin D | d. Vitamin K |
11. Among the four chambers, which one of these is the true stomach of a ruminant?
- | | |
|-----------|--------------|
| a. Rumen | b. Reticulum |
| c. Omasum | d. Abomasum |
12. Statement A: The alimentary canal begins with an anterior opening-the anus.
Statement B: The alimentary canal ends with a posterior opening-the mouth.
- | | |
|---|---|
| a. Both the statements are true | b. Both the statements are false |
| c. Statement A is true but Statement B is false | d. Statement B is true but Statement A is false |
13. Which of the following types of teeth are absent in the primary dentition of a human being?
- | | |
|-------------|--------------|
| a. Canines | b. Premolars |
| c. Incisors | d. Molars |
14. Vermiform appendix arises from which part of the large intestine?
- | | |
|---------------------|------------------|
| a. Transverse colon | b. Sigmoid colon |
| c. Caecum | d. Rectum |
15. Which of the following enzymes activate trypsinogen?
- | | |
|-----------------|-----------------|
| a. Chymotrypsin | b. Enterokinase |
| c. Lipase | d. Bile |
16. Human lungs are made up of.....
- | | |
|-----------------------------------|-----------------------------------|
| a. 2 right lobes and 3 left lobes | b. 2 right lobes and 3 left lobes |
| c. 3 right lobes and 2 left lobes | d. 3 right lobes and 3 left lobes |
17. Decrease in thoracic volume is marked by.....
- | | |
|--|-------------------------|
| a. Diaphragm relaxed | b. Diaphragm contracted |
| c. Sternum moving towards ventral and anterior direction | d. Ribs moving out |
18. What is the shape of Haemoglobin-oxygen dissociation curve?
- | | |
|---------------|-------------|
| a. Straight | b. Constant |
| c. Hyperbolic | d. Sigmoid |
19. What is the function of ADH?
- | | |
|----------------------------------|-------------------------------|
| a. Controls sugar level in blood | b. Increases water absorption |
| c. Decreases water absorption | d. Synthesis of salt |
20. Podocytes are found in.....
- | | |
|-----------------------------------|-----------------------------------|
| a. Cortex of nephron | b. Outer wall of Bowman's capsule |
| c. Inner wall of Bowman's capsule | d. Wall of glomerular capillaries |

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

- | | |
|--|--------|
| 1. Write a note on the mechanism of breathing. Write the various modes of transportation of carbon dioxide in the blood. | 5+5=10 |
| 2. Explain the mechanism of digestion and absorption of Carbohydrate from food with illustrative diagrams. | 10 |
| 3. Explain with proper illustration the mechanism of urine formation in mammal. | 10 |
| 4. Write short notes on: (<i>any two</i>) | 2×5=10 |
| a) Chloride Shift | |
| b) Exchange of gases | |
| c) Types of Teeth | |
| 5. Describe in brief the composition of blood. Explain the intrinsic and extrinsic pathways of blood clotting mechanism. | 5+5=10 |
| 6. Describe the various events of cardiac cycle with proper diagram. What does the T wave in the electrocardiogram signify? | 8+2=10 |
| 7. Explain the generation of action potential across a non myelinated nerve fibre, including the role of ion channels and the sodium-potassium pump. What are neurotransmitters? | 8+2=10 |
| 8. Write short notes on: (<i>any two</i>) | 2×5=10 |
| a) Synapse | |
| b) Electroconducting system of heart | |
| c) Classification of neurons | |

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