

M.Sc. ZOOLOGY
FIRST SEMESTER (SPECIAL REPEAT)
ANIMAL PHYSIOLOGY & ENDOCRINOLOGY
MSZ-103

SET
A

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. Mother-fetus Rh blood type incompatibility problem can occur if the mother is.....
and her fetus is.....
 - a. Rh positive, Rh positive
 - b. Rh negative, Rh positive
 - c. Rh negative, Rh negative
 - d. Rh positive, Rh negative
2. Macula densa cells are part of:
 - a. Glomerulus
 - b. Capillary network
 - c. Distal convoluted tubule
 - d. Proximal convoluted tubule
3. The P wave of the ECG represents:
 - a. Ventricular depolarization
 - b. Atrial depolarization
 - c. Ventricular repolarization
 - d. Atrial systole
4. If terminal sugar of oligosaccharide is D galactose on RBC, then the antigen is called:
 - a. A antigen
 - b. B antigen
 - c. D antigen
 - d. H antigen
5. If H antigen is absent then the blood group is called:
 - a. O blood group
 - b. A blood group
 - c. Golden blood group
 - d. Bombay blood group
6. The input from both eyes to reach the same area of the brain in amphibians happens due to:
 - a. Spinothalamic pathway
 - b. Somatic pathway
 - c. Ipsilateral pathway
 - d. Anterolateral pathway
7. Which gene is activated by thyroxine for T₄ to T₃ conversion?
 - a. TR α
 - b. TR β
 - c. TR γ
 - d. TR δ
8. Papilla of Vater is:
 - a. Outward duct of pancreas to duodenum
 - b. Outward duct of liver to duodenum
 - c. Outward duct of gall bladder to duodenum
 - d. Outward duct of stomach to duodenum
9. Which among these is the most important axis for human physiology?
 - a. Hypothalamogonadal axis
 - b. Hypothalamopituitary axis
 - c. Hypothalamoadrenal axis
 - d. Hypothalamothyroidal axis

10. Suppose you are caught up in a dense jungle surrounded by heavy forest cover full of wild animals and very less light conditions. Which among these actions/reflexes would not be affected from release of medullary hormones?
- | | |
|-----------------------------|-----------------------------|
| a. Increased metabolic rate | b. Lipogenesis in fat cells |
| c. Blood vessels shrinkage | d. Pupil dilation |
11. Gastrin is a:
- | | |
|---------------------|----------------------|
| a. Digestive enzyme | b. GI hormone |
| c. Neurotransmitter | d. None of the above |
12. Which one is correct for bile?
- | | |
|----------------------------|-----------------------|
| a. Secreted by liver | b. Alkaline in nature |
| c. Helps in emulsification | d. All of the above |
13. Which cations are essential for muscle contraction?
- | | |
|--------------------|---------------------|
| a. Na ⁺ | b. Ca ⁺ |
| c. K ⁺ | d. Mg ⁺⁺ |
14. The neurons are devoid of:
- | | |
|-----------------|-----------------|
| a. Centrosome | b. Nucleus |
| c. Mitochondria | d. Nissl bodies |
15. Which one of the following is not a neurotransmitter?
- | | |
|------------------|-------------------|
| a. Phosphorylase | b. Acetyl choline |
| c. Adrenalin | d. Noradrenaline |
16. The process of improvement of ability of an animal to withstand thermal stresses is called:
- | | |
|----------------|--------------------|
| a. Adaptation | b. Acclimatization |
| c. Aestivation | d. Vasodilation |
17. Which one of the following is not a process of heat exchange?
- | | |
|----------------|-----------------------|
| a. Conduction | b. Convection |
| c. Evaporation | d. Oxidative reaction |
18. For marine fish, which one of the following is an adaptive device to save their body from excess salt?
- | | |
|--|---|
| a. Release small amount of highly concentrated urine | b. Release large amount of dilute urine |
| c. Take salts through chlorine cells | d. Stop drinking sea water |
19. Receptors for water soluble hormones are situated at:
- | | |
|--------------------|--------------|
| a. Plasma Membrane | b. Cytoplasm |
| c. Nucleus | d. Gene |
20. From which of the following amino acids, Amine group of hormones are derived?
- | | |
|---------------|-------------|
| a. Tryptophan | b. Tyrosine |
| c. Threonine | d. Alanine |

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

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|--|----------|
| 1. What is respiration? Write about the transportation of carbon dioxide from body tissues to lung. | 2+8=10 |
| 2. Classify various types of muscles in vertebrates. Write briefly about the structure of contractile proteins in muscles. | 5+5=10 |
| 3. Mention in detail the steps involved in the production of thyroid hormones. | 10 |
| 4. Mention the major mechanical processes involved in the mechanism of digestion. Write how digested products of protein, carbohydrates and lipids are absorbed. | 2+8=10 |
| 5. Describe ABO and Rh blood group system in human. | 7+3=10 |
| 6. What are the hormones of adrenal cortex and medulla? Mention in detail the functions of each hormone with a diagrammatic representation of the adrenal gland. | 3+5+2=10 |
| 7. Write the mechanism of action of peptides and steroid hormones. | 5+5=10 |
| 8. What is meant by membrane potential? Explain the ionic basis of resting membrane potential and action potential. | 2+8=10 |

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