

REV-01
MSZ/106/111

2023/12

M.Sc. ZOOLOGY
FIRST SEMESTER
ANIMAL PHYSIOLOGY AND ENDOCRINOLOGY
MSZ-102

**SET
C**

[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 x 20 = 20

1. Which one of the following enzymes converts milk to curd inside the stomach?
 - a. Pepsin
 - b. Renin
 - c. Mucin
 - d. Ptyalin
2. What are the substances produced by bacteria present in the large intestine to fulfill our body's requirements?
 - a. Vitamins
 - b. Proteins
 - c. Starch
 - d. Lipids
3. Which one of the following is the effect of temperature extreme (hot/cold)?
 - a. Enzymatic reactions hampered
 - b. Sweating
 - c. Shivering
 - d. Pilorelaxation
4. As a result of Bohr effect, oxygen dissociation curve moves:
 - a. Right
 - b. Left
 - c. Up
 - d. Down
5. Which one of the following is not the effect of complete acclimatization?
 - a. Formation of new protein
 - b. Refolding of damaged proteins
 - c. Pulmonary ventilation improved
 - d. Increases the risk of heart injury
6. Which of these arteries lead to afferent arteriole?
 - a. Arcuate artery
 - b. Lobar artery
 - c. Interlobular artery
 - d. Segmental artery
7. The enzyme renin is produced by:
 - a. Renal pyramid
 - b. Major calyx
 - c. Distal tubule
 - d. Juxtaglomerular apparatus
8. If glomerular hydrostatic pressure is 55mmHg, blood colloid osmotic pressure is 30mmHg and capsular hydrostatic pressure is 10mmHg, then what is the net outward pressure?
 - a. 10 mmHg
 - b. 15 mmHg
 - c. 20 mmHg
 - d. 25 mmHg
9. Which is the correct sequence of cells of the myelocyte series as they appear during genesis of white blood cells?
 - a. Myeloblast, promyelocyte, megakaryocyte
 - b. Megakaryocyte, myeloblast, promyelocyte
 - c. Myeloblast, megakaryocyte, promyelocyte
 - d. Promyelocyte, Megakaryocyte, myeloblast

10. Which of these blood cells play role in controlling asthma?
 - a. Basophil
 - b. Eosinophil
 - c. Both a & b
 - d. None
11. Sustained contraction of muscle due to repeated stimuli is called:
 - a. Twitch
 - b. Summation
 - c. Fatigue
 - d. Tetanus
12. Bands of nerves at posterior terminal of spinal cord is:
 - a. Cauda equina
 - b. Foramen magnum
 - c. Corpus callosum
 - d. Basal ganglia
13. Number of cranial nerves in mammals is:
 - a. 10 pairs
 - b. 12 pairs
 - c. 31 pairs
 - d. None
14. Select the correct components of limbic system of brain.
 - a. Amygdala, hippocampus, hypothalamus
 - b. Hypothalamus, hypophysis, pons
 - c. Thalamus, tectum, vermis
 - d. Hypophysis, medulla oblongata, brain stem
15. Electric potential of a nerve cell membrane in resting state is:
 - a. -60mV
 - b. -70mV
 - c. -80mV
 - d. -90mV
16. Binding of iodine with thyroglobulin molecule is called:
 - a. Iodide trapping
 - b. Thyroid peroxidation
 - c. Organification
 - d. None of these
17. The function of C chain of Insulin is:
 - a. Enzyme activation
 - b. Carbohydrate metabolism
 - c. Protein synthesis
 - d. All of these
18. Progesterone is produced by:
 - a. Corpus luteum
 - b. Adrenal gland
 - c. Placenta
 - d. All of these
19. The enzyme which converts androgen to estrogen is called:
 - a. Carboxylase
 - b. Aromatase
 - c. Hydrolase
 - d. None
20. The small 'bump' formed by Graafian follicle on the surface of ovary is called:
 - a. Cortex
 - b. Medulla
 - c. Stigma
 - d. Antrum

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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. Write how the neurons are classified. Explain the ultrastructure of a neuron. | 4+6=10 |
| 2. Name the various contractile proteins present in muscle. Explain the molecular mechanism of contraction of skeletal muscle. | 2+8=10 |
| 3. What is thermal stress? Discuss the neural and hormonal regulations of thermal stress. | 2+8=10 |
| 4. What is glycogenolysis and gluconeogenesis? Mention the activities of insulin and glucagon. Name the hormones involved in digestion of food. | 4+4+2=10 |
| 5. What is hemostasis and what are the events involved? Explain the process of blood coagulation. | 4+6=10 |
| 6. Write down the organs and functions of urinary system. Discuss the formation of urine in nephron. | 5+5=10 |
| 7. Describe the structure of testis. Draw a schematic diagram of testicular hormone biosynthesis. What are the main functions of testicular hormones? | 4+3+3=10 |
| 8. Write short notes on <i>any two</i> : | 2×5=10 |
| a) Biosynthesis of estrogen and its functions. | |
| b) Biosynthesis of insulin and structure of insulin receptor. | |
| c) Types of hormone receptors. | |
| d) Secretion and functions of posterior pituitary hormone. | |

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