

M.Sc. ZOOLOGY
FIRST SEMESTER [SPECIAL REPEAT]
ANIMAL PHYSIOLOGY AND ENDOCRINOLOGY
MSZ-102

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1×20=20

1. The small 'bump' formed by Graafian follicle on the surface of ovary is called:
a. Cortex
b. Medulla
c. Stigma
d. Antrum
2. The enzyme which converts androgen to estrogen is called:
a. Carboxylase
b. Aromatase
c. Hydrolase
d. None
3. Progesterone is produced by:
a. Corpus luteum
b. Adrenal gland
c. Placenta
d. All of these
4. The function of C chain of Insulin is:
a. Enzyme activation
b. Carbohydrate metabolism
c. Protein synthesis
d. All of these
5. Binding of iodine with thyroglobulin molecule is called:
a. Iodide trapping
b. Thyroid peroxidation
c. Organification
d. None of these
6. Electric potential of a nerve cell membrane in resting state is:
a. -60mV
b. -70mV
c. -80mV
d. -90mV
7. 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
8. Number of cranial nerves in mammals is:
a. 10 pairs
b. 12 pairs
c. 31 pairs
d. None
9. Bands of nerves at posterior terminal of spinal cord is:
a. Cauda equina
b. Foramen magnum
c. Corpus callosum
d. Basal ganglia
10. Sustained contraction of muscle due to repeated stimuli is called:
a. Twitch
b. Summation
c. Fatigue
d. Tetanus

11. Which of these blood cells play role in controlling asthma?
 - a. Basophil
 - b. Eosinophil
 - c. Both a & b
 - d. None
12. 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
13. 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
14. The enzyme renin is produced by:
 - a. Renal pyramid
 - b. Major calyx
 - c. Distal tubule
 - d. Juxtaglomerular apparatus
15. Which of these arteries lead to afferent arteriole?
 - a. Arcuate artery
 - b. Lobar artery
 - c. Interlobular artery
 - d. Segmental artery
16. 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
17. As a result of Bohr effect, oxygen dissociation curve moves:
 - a. Right
 - b. Left
 - c. Up
 - d. Down
18. Which one of the following is the effect of temperature extreme (hot/cold)?
 - a. Enzymatic reactions hampered
 - b. Sweating
 - c. Shivering
 - d. Pilo-relaxation
19. 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
20. Which one of the following enzymes converts milk to curd inside the stomach?
 - a. Pepsin
 - b. Renin
 - c. Mucin
 - d. Ptyalin

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

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| 1. Write down the organs and functions of urinary system. Discuss the formation of urine in nephron. | 5+5=10 |
| 2. 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 |
| 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. Name the various contractile proteins present in muscle. Explain the molecular mechanism of contraction of skeletal muscle. | 2+8=10 |
| 7. Write how the neurons are classified. Explain the ultrastructure of a neuron. | 4+6=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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