

M.Sc. ZOOLOGY
First Semester
ANIMAL PHYSIOLOGY & ENDOCRINOLOGY
(MSZ – 103)

Duration: 3Hrs.

Full Marks: 70

PART A (Objective)=20
PART-B (Descriptive)=50

PART-B (Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any *five* of the following questions:

1. Describe the mechanism of digestion. Write about the role of digestive enzymes and gastrointestinal hormones in digestion. (5+2+3=10)
2. Name the different blood groups and write an account on blood clotting mechanism. How is cardiac cycle regulated in mammals? (2+5+3=10)
3. What are aldosterones? Mention the function of mineralocorticoid and glucocorticoid hormones. (2+8=10)
4. a) Draw a labeled diagram of the ultra structure of a neuron and state its functions.
b) With the help of diagrams explain induction of neural impulse through an axon. (5+5=10)
5. Describe the ultra structure of nephron with the help of labeled diagram and write its function in the human body. Write the mechanism of urine formation. (5+5=10)
6. What are the different types of muscles? Explain muscle fatigue and rigor mortis. Write briefly on molecular mechanism and regulation of muscle contraction. (2+3+5=10)

7. Write an essay on thermoregulation citing few examples. State the differences between aestivation and hibernation. Describe osmoregulation in aquatic animal groups. (3+4+3=10)
8. Write an account on biosynthesis and metabolic functions of thyroid hormones. Describe feedback system of hormones with the help of examples. (5+5=10)

6. Which one of the following is not needed in blood clotting?
a) Vitamin K b) Ca^{++}
c) Prothrombin d) Erythrocytes
7. The sound which is caused by the closure of atrioventricular valves during ventricular contraction, is
a) Lub b) Dup
c) Sip d) None of these
8. The cardiac pacemaker is-
a) SA node b) AV node
c) Bundle of His d) all of the above
9. Glomerulus is the part of-
a) Bowman's capsule b) renal corpuscle
c) renal tubule d) JGA
10. Following substances are actively reabsorbed by the renal tubules except-
a) sodium b) bicarbonate
c) uric acid d) urea
11. Match the various phases of secretion and activation during the process of digestion of foods in GI tract.

List I Phases of secretion	List II Activations
(i) Cephalic phase in gastric secretion	(a) Acidic and lipid chyme in duodenum.
(ii) Gastric phase in gastric secretion	(b) Distension of stomach.
(iii) Intestinal phase in gastric secretion	(c) Tactile sensation in mouth.
(iv) Pancreatic ductular secretion	(d) Secretin in the blood.

Select the correct match from the following,

- | | | | | |
|-----|-----|-----|-----|-----|
| | (a) | (b) | (c) | (d) |
| (A) | iii | ii | i | iv |
| (B) | iii | i | ii | iv |
| (C) | i | ii | iii | iv |
| (D) | iv | i | ii | iii |

12. All are the mixed nerve except-
a) oculomotor b) glossopharyngeal
c) vagus d) hypoglossal

- 13.....is the time needed by a stimulus of two threshold stimuli to excite the nerve.
- a) Chronaxie
 - b) Rheobase
 - c) excitability
 - d) Polarization
14. Secretin activates the pancreatic ductular cells in humans
- a) To reabsorb HCO_3^- from the pancreatic juice.
 - b) To secrete HCO_3^- in the pancreatic juice.
 - c) To secrete Na^+ and Cl^- in the pancreatic juice.
 - d) To reabsorb Na^+ and Cl^- from the pancreatic juice.
15. The hormone that stimulates the distribution of melanophores in skin of vertebrates is-
- a) Oxytocin
 - b) Parathormone
 - c) Melanocyte Stimulating Hormone (MSH)
 - d) Calcitonin
16. Enlargement of the bones of the hands, feet and jaw bones due to hyper-secretion of Growth hormone in adult human is called
- a) Acromegaly
 - b) Cushing syndrome
 - c) Polydactyly
 - d) Addison disease
17. Addison's disease is caused due to deficiency of-
- a) Glucocorticoids
 - b) Mineralocorticoids
 - c) Both a & b
 - d) Insulin
18. Which of the following hormones is a modified amino acid?
- a) Estrogen
 - b) Epinephrine
 - c) Progesterone
 - d) Prostaglandin
19. Which one of the following pairs correctly matches a hormone with a disease resulting from its deficiency?
- a) Parathyroid hormone ----- diabetes mellitus
 - b) Leuteinizing hormone ----- failure of ovulation
 - c) Insulin ----- diabetes insipidus
 - d) Thyroxine ----- tetany
20. The receptors for thyroxin hormone is located at
- a) Cell surface
 - b) Nucleus
 - c) Cytoplasm
 - d) None of the above
