

Roll No.

E-534**M. Sc. (Second Semester) (ATKT)****EXAMINATION, May-June, 2021**

ZOOLOGY

Paper Second

(General Physiology and Endocrinology)*Time : Three Hours] [Maximum Marks : 80***Note :** Attempt all Sections as directed.**Section—A**

1 each

(Objective/Multiple Choice Questions)**Note :** Attempt all questions.

Choose the correct answer :

1. Wharton's duct is associated with :

- (a) Brunner's Gland
- (b) Sublingual Salivary Gland
- (c) Parotid Salivary Gland
- (d) Sub-maxillary Salivary Gland

2. Brush border columnar epithelium is the lining of :

- (a) Oesophagous
- (b) Small intestine
- (c) Stomach
- (d) Proximal convoluted tubules

3. Ileum is characterised by the presence of :

- (a) Peyer's patches and villi
- (b) Brunner's gland and villi
- (c) Brunner's gland and Peyer's patches
- (d) Brunner's gland and Taenia coli

4. Carbon dioxide is carried in the blood mainly as :

- (a) Sodium bicarbonate
- (b) Potassium bicarbonate
- (c) Dissolved gas in plasma
- (d) Carbamino-haemoglobin

5. To which part of Hb, CO₂ binds ?

- (a) Haem
- (b) Iron of haem group
- (c) Carboxy group of globin
- (d) Amino group of globin

P. T. O.

6. What is Sarcomere ?
- (a) Part between two 'H' lines
 - (b) Part between two 'A' lines
 - (c) Part between two 'Z' lines
 - (d) Part between two 'I' band
7. Each tropomyosin is associated with subunit(s) of actin subunits.
- (a) 1
 - (b) 2
 - (c) 3
 - (d) 7
8. The myelin sheath is derived from the :
- (a) Nerve cells
 - (b) Schwann cells
 - (c) Neuroglial cells
 - (d) Microglia
9. This neurotransmitter is not a biogenic amine :
- (a) Dopamine
 - (b) Norepinephrine
 - (c) Serotonin
 - (d) Neuropeptides

10. Polysynaptic membranes are found in :
- (a) Dendrites
 - (b) Myelin sheath
 - (c) Axon
 - (d) Neuron cell bodies
11. Which of the following auditory bones is attached to the oval window ?
- (a) Malleus
 - (b) Incus
 - (c) Stapes
 - (d) None of the above
12. Bowman's glands are found in :
- (a) External auditory canal
 - (b) Olfactory epithelium
 - (c) Juxtamedullary
 - (d) Cortical nephron
13. The retinal part of photopigment is a derivative of :
- (a) Vitamin A
 - (b) Vitamin B₁₂
 - (c) Vitamin C
 - (d) Vitamin K

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14. The inner segment of a photoreceptors contains :

- (a) Cell nucleus
- (b) Mitochondria
- (c) Golgi complex
- (d) All of the above

15. Which is not a function of the hypothalamus ?

- (a) Secrete FSH
- (b) Control temperature
- (c) Affect heat rate
- (d) Affect water balance

16. Calcium level in the blood is regulated by the :

- (a) Parathyroid
- (b) Thyroid
- (c) Posterior pituitary
- (d) Both (a) and (b)

17. The endocrine gland responsible for the body's circadian rhythm is the :

- (a) Pineal gland
- (b) Parathyroid gland
- (c) Thymus gland
- (d) All of the above

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18. Which of the following is protein hormone ?

- (a) TSH
- (b) Insulin
- (c) Oxytocin
- (d) ADH

19. The hormones secreted during reproductive cycle are regulated by :

- (a) Negative feedback system
- (b) Positive feedback system
- (c) Sympathetic system
- (d) Parasympathetic system

20. Select the main cause of menopause :

- (a) Increase in the level of Oestrogen
- (b) Increase in the level of Progesterone
- (c) Reduction in the level of Oestrogen
- (d) Reduction in the level of Progesterone

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt all questions in **1-2** sentences.

1. What is Glisson's capsule ?
2. What is the shape of O₂-dissociation curve for haemoglobin ?
3. Draw a well labelled diagram of Cardiac muscle.

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4. What is GABA ?
5. Write the name of the audio receptor region in cochlea.
6. What do you mean by endothermic animals ?
7. What is T₃ hormone ? Explain its main functions.
8. What are the functions of Luteinizing Hormones (L. H.).
Write any *two* functions.

Section—C

3 each

(Short Answer Type Questions)

Note : Attempt all questions in **75** words.

1. Describe the structure of mammalian pancreas and its functions.
2. What are the respiratory pigments ? Write their composition, types and functions.
3. Explain the cross-bridge formation in muscle contraction.
4. Explain the synaptic transmission.
5. What are chemoreceptor organs ? Give their structure and functions.
6. Explain the Torpor.
7. Briefly describe the biosynthesis of Testosterone hormone.
8. Which hormones are secreted from Adrenal medulla and give their function.

Section—D

5 each

(Long Answer Type Questions)

Note : Attempt all questions in about **500** words each.

1. What is Hamburger Phenomenon ? Explain its mechanism and its significant role during respiration.

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Or

Give detailed accounts of role of gastro-intestinal hormones in digestion and how to control digestion.

2. Explain the transmission of Nerve impulse, characters, steps and affecting factors.

Or

Describe the muscle fibre type, structure, function and regulation.

3. Describe the mechanism of vision, organ structure, biochemical changes and neural control.

Or

Give detailed accounts on thermoregulation and cold tolerance, their types and significance.

4. Describe the structure and function of Pineal gland.

Or

Explain in detail how hormones regulate reproduction.

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