

Roll No.

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M.Sc. (First Semester)
EXAMINATION, Dec. - Jan., 2021-22

ZOOLOGY

Paper Third

**(General and Comparative Endocrinology
of Vertebrates)**

Time: Three Hours]

[Maximum Marks : 80

Note: Attempt all sections as directed.

Section - A

(Objective/Multiple Choice Questions)

(1 mark each)

Note: Attempt all questions.

Choose the correct answer.

1. Who discovered secretin hormone?
 - (A) A.A. Berthold
 - (B) Adison
 - (C) Balis & Sterling
 - (D) Pende
2. Which chemical substance responsible for the inhibition of thyroid hormones
 - (A) Alcohol
 - (B) Thio-urea & Thiouresil
 - (C) Benzoic Acid
 - (D) Peroxidase enzyme

P.T.O.

3. Which of the following gland secretes peptide and steroid both types of hormones?
 - (A) Corpus luteum
 - (B) Placenta
 - (C) Hypothalamus
 - (D) Heart
4. Lucine zipper contain how many amino acycle residue?
 - (A) 20 - 30
 - (B) 30 - 40
 - (C) 40 - 50
 - (D) 50 - 60
5. In prepro structure of Insulin contain how many amino acycle residue?
 - (A) 86
 - (B) 109
 - (C) 51
 - (D) 30
6. Which hormone is responsible for the absorption of water from sperm, when they migrate from seniferous tubules to epidynus?
 - (A) Testosterone
 - (B) Di - hydroxytestosteron
 - (C) Epi- andosterone
 - (D) Estrogens
7. Pregnane contain how many carbon atoms?
 - (A) 18
 - (B) 19
 - (C) 21
 - (D) 20

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8. Estrogens contain how many carbon atoms?
 - (A) 18
 - (B) 19
 - (C) 20
 - (D) 21
9. Which one the precursore of cholesterol?
 - (A) Acetoacetyte Co A
 - (B) Mevalonic Acid
 - (C) Squalene
 - (D) Acetoacelate
10. The enzymes 3 β steroid dehydrogenase, 21 β hydroxylase, and 17 β hydroxylase are release from:
 - (A) Mitochondria
 - (B) Smooth endoplasmic reticulum
 - (C) Lysosome
 - (D) All above
11. The _____ cells of the pancreas secrete Insulin
 - (A) Chief cell
 - (B) F - cells
 - (C) α - cells
 - (D) β - cells
12. Which hormone work on Aquaporins protein?
 - (A) ADH
 - (B) FSH
 - (C) LH
 - (D) ACTH

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13. In which of the following combination is the name of the hormone, its chemical type and its tissue of origin.
 - (A) Adosteron \rightarrow Peptide \rightarrow Pancreas
 - (B) Glucagons \rightarrow Peptide \rightarrow Adrenal medula
 - (C) Vasopressin \rightarrow Peptide \rightarrow Memohypophysis
 - (D) ACTH \rightarrow Peptide \rightarrow Adrenal cortex
14. Melanocyte releasing inhibitory Hormone contain how many amino acycle residue?
 - (A) 03
 - (B) 05
 - (C) 07
 - (D) 09
15. Which hormone binds to intracellular receptors?
 - (A) Insulin
 - (B) Triodothysonine
 - (C) Thyroid Stimulating hormone
 - (D) FSH
16. The receptor for which of the following harmones is a transcription factor?
 - (A) Insulin
 - (B) Glucagone
 - (C) Epinephrine
 - (D) Estradiol
17. Epinephrine and nor - epinephrine function as both hormones and
 - (A) Fuel for cellular Respiration
 - (B) Ions to promote action potential
 - (C) Neurotransmitters
 - (D) Solutes to promote osmotic flow

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18. Which of the following hormones is a modified amino acid?
 - (A) Epinephrine
 - (B) Prostaglandin
 - (C) Estrogen
 - (D) Relaxin
19. The primary target organ of aldosterone action is
 - (A) Liver
 - (B) Pancreas
 - (C) Kidney
 - (D) Heart
20. The neuron of a person with diabetes mellitus do not produce sufficient
 - (A) ATP
 - (B) Fatty acid
 - (C) Enzyme
 - (D) Steroid

Section - B

(Very Short Answer Type Questions)

(2 marks each)

Note: Attempt all questions.

1. Write the name of hormone those release from Heart.
2. Give the structure of prolactin releasing inhibitory hormone.
3. Give the name of chemical substances those are responsible to block the activity of pancreatic α - cells, pancreatic B cells and pituitary adrenal function.
4. Write the name of opiate peptide hormone those secrete from neuroendocrine system. (any three)
5. Draw only diagramme which show's Hypothalamic-hypophyseal portal system.

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6. Describe the role of Ca^{++} for the activation of kinase enzyme.
7. Write name of protein those are responsible for steroid and Iodothyronine hormone (any three)
8. Who Isolated and identified the α - amino acid sequence of growth hormone?

Section - C

(Short Answer Type Questions)

(3 marks each)

Note: Attempt all questions.

1. Classify steroid hormones and cholesterol.
2. Describe Ablation (Chemical) in short.
3. Give the ray diagram of catecholamine hormone.
4. Synthesis of thyroid releasing hormone under the following steps-
 - (i) Organic synthesis
 - (ii) Acetic Acid Anhydrides Reaction
 - (iii) "C" Terminal amidation
5. Describe Helix - turn Helix and Zinc finger.
6. Describe Iodine metabolism in thyroid gland.
7. Describe the role of Deiodinase 1,2,3 in thyroid gland.
8. Describe the role of hormone those use in calcium metabolism.

Section - D

(Long Answer Type Questions)

(5 marks each)

Note: Attempt all questions:

1. Describe the experimental methods of hormone research.

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OR

Describe the methods for extracting, purifying and assaying antigenic hormone which present in crude tissue extract.

2. Explain Adenyl cyclase receptor complex.

OR

Describe catabolism of steroid hormones

3. Describe the physiological roles of Opioid peptide (Endorphin, Enkephalin and - Dynorphin)

OR

Describe the synthesis, Regulation of synthesis, Receptor, action and function of 1, 25 Dihydroxycholecalciferol hormones.

4. Describe the role of hormone in carbohydrate metabolism.

OR

Explain the role of hormone in growth & development.