

(6 pages)

S.No. 7094

P 22 ZOCC 1 B

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023

Zoology— Core Choice course

ENDOCRINOLOGY

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

I. (A) Multiple choice questions: (5 × 1 = 5)

1. JH is secreted by

- (a) Corpora cardiaca (b) Pituitary
(c) Corpora allata (d) Prothoracic gland

2. Phospholipase A2 catalyzes the conversion of diacylglycerol to

- (a) Serotonin (b) Arachidonic acid
(c) Citric acid (d) Glycerol

3. Cholesterol to pregnenolone conversion that is the rate-limiting step in steroid synthesis occurs in

- (a) Mitochondria
(b) Cytoplasm
(c) Endoplasmic reticulum
(d) Nucleus

4. One of the following binds to plasma membrane receptor

- (a) Progesterone (b) Glucocorticoid
(c) Calcitriol (d) Catecholamine

5. Pituitary gigantism is an example for

- (a) Growth hormone excess
(b) Androgen excess
(c) Insulin deficiency
(d) Growth hormone deficiency

(B) Fill in the blanks :

(5 × 1 = 5)

6. In crustaceans ecdysone is secreted by _____
7. _____ produces TSH that regulates thyroid hormone production.
8. Amino acid tyrosine gives rise to _____ hormone.
9. Molecules that bind to receptors but are less biologically active than the native hormones are _____
10. Combined hormonal contraceptives inhibit the release of _____

II. Descriptive type questions:

(5 × 2 = 10)

11. What is the role of androgenic gland?
12. Describe the importance of oxytocin.
13. Explain the structure of testosterone.
14. What is the role of cytochrome P450 in hormone metabolism?
15. Enumerate any two disadvantages of progesterone therapy.

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b)

16. (a) Comment on the different types of metamorphosis in insects and role of ecdysone in it.

Or

- (b) With suitable examples explain the mechanism of hormone action.

17. (a) Describe the hormonal action of pancreas and their significance.

Or

- (b) Write an account on the hormonal action during menopause and their effects.

18. (a) Describe the post-transcriptional regulation of hormone biosynthesis using suitable examples.

Or

- (b) Give a brief account on the phylogenetic analysis of growth hormones using suitable examples.

19. (a) What are the types of hormonal receptors? Give an account on the mechanism of receptor action and signal attenuation.

Or

- (b) What are antagonists? Explain their mechanism of action, types and applications.
20. (a) What is the role of insulin? Explain the principle, steps involved and application of genetic engineering for commercial production of insulin.

Or

- (b) Discuss the principle, relevance and application of thyroid stimulating hormone assays and their limitations.

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

21. What is a pheromone? Explain the types and their role in insect reproduction and control.
22. Give an account on the endocrine functions of parathyroid and its associated abnormalities.
23. Explain with suitable diagrams the mechanism of biosynthesis of water soluble hormones from amino acid tryptophan and histidine.

24. Write an essay on the role of hormones in animal behaviour.

25. Discuss with suitable examples the importance of hormonal contraceptives in regulating fertility in humans.
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