

2025

(NEP—2020)

(5th Semester)

ZOOLOGY (MAJOR3/MINOR)**(Endocrinology and Reproduction Biology)**

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks for the questions***(SECTION : A—OBJECTIVE)**

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Catecholamines are

- (a) peptide hormones () (b) steroid hormones ()
(c) amino acid derivatives () (d) fatty acid derivatives ()

2. The hormones that can stimulate other glands are called

- (a) metabolic hormones () (b) tropic hormones ()
(c) sex hormones () (d) stress hormones ()

3. The nuclear localization signal (NLS) of steroid receptors is primarily located in

- (a) DNA binding domain () (b) hinge region ()
(c) hormone binding domain () (d) variable domain ()

4. Goitre is due to

I. the deficiency of iodine

II. high level of TSH stimulating enlargement of thyroid gland

- (a) Only I is correct () (b) Only II is correct ()
(c) Both I and II are correct () (d) Both I and II are not correct ()

5. The conversion of ATP to cAMP is mediated by an enzyme

- (a) adenylyl cyclase () (b) catalase ()
(c) guanylyl cyclase () (d) phosphodiesterase ()

6. The internal biological clock, also known as the master clock, is located in

- (a) preoptic nucleus () (b) suprachiasmatic nucleus ()
(c) supraoptic nucleus () (d) ventromedial nucleus ()

7. The conversion of glucose to glycogen is facilitated by an enzyme called

- (a) glycogen synthase () (b) glucose phosphatase ()
(c) glycogen phosphorylase () (d) glycogen phosphatase ()

8. The neurohormone which helps insects shedding their old exoskeleton is

- (a) bursicon () (b) corazonin ()
(c) eclosion hormone () (d) octopamine ()

9. In estrous cycle, the phase where female is sexually receptive is

- (a) proestrus () (b) estrus ()
(c) metestrus () (d) diestrus ()

10. The progestin-only pill (POP) primarily prevents pregnancy by
- (a) blocking the effects of FSH and LH ()
 - (b) thickening cervical mucus and thinning the uterine lining ()
 - (c) causing permanent sterilization ()
 - (d) creating a chemical barrier to fertilization ()

(SECTION : B—SHORT ANSWERS)

(Marks : 25)

Write notes on any *five* of the following, taking at least *one* from each Unit : 5×5=25

UNIT—I

1. Hormones of pituitary gland
2. G-protein coupled receptors

UNIT—II

3. Cretinism
4. Side effects of anabolic steroids

UNIT—III

5. Circadian rhythm
6. Functions of calcitonin

UNIT—IV

7. Corpora allata and its functions
8. Combined oral contraceptives

(SECTION : C—DESCRIPTIVE)

(Marks : 40)

Answer *four* questions, taking *one* from each Unit :

10×4=40

UNIT—I

1. Discuss the classification of hormones. How are hormones transported in vertebrates? 5+5=10
2. Describe the structure of thyroid gland. Add a note on its hormones and their functions. 6+4=10

UNIT—II

3. Elucidate the mechanism of action of peptide hormones. 10
4. Discuss the types, causes and symptoms of diabetes mellitus. 10

UNIT—III

5. Explain clearly how glucose is hormonally regulated in vertebrates. 10
6. What is parturition? Discuss the different stages of parturition in mammals. 10

UNIT—IV

7. What are pheromones? Discuss the different types of pheromones and their roles in insects. 2+8=10
8. Discuss the different phases of menstrual cycle and their hormonal regulation. 10
