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( CBCS )

( 4th Semester )

**ZOOLOGY**

FOURTH PAPER

**( 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. The first hormone discovered is

- (a) insulin ( )
- (b) secretin ( )
- (c) androgen ( )
- (d) calcitonin ( )

- 2.** Prostaglandins belong to
- (a) steroid hormones ( )
  - (b) peptide hormones ( )
  - (c) amino acid derivatives ( )
  - (d) fatty acid derivatives ( )
- 3.** The hormone-binding domain in the insulin receptor is located in
- (a)  $\alpha$ -subunit ( )
  - (b)  $\beta$ -subunit ( )
  - (c)  $\gamma$ -subunit ( )
  - (d)  $\alpha$  and  $\beta$ -subunit ( )
- 4.** The enzyme responsible for break down of glycogen into glucose is
- (a) glycogen synthase ( )
  - (b) glycogen phosphorylase ( )
  - (c) glucose synthase ( )
  - (d) glucose phosphorylase ( )
- 5.** The normal calcium concentration level in the blood is around
- (a) 2–5 mg/dL of blood ( )
  - (b) 8–10 mg/dL of blood ( )
  - (c) 12–15 mg/dL of blood ( )
  - (d) 20–25 mg/dL of blood ( )
- 6.** A temporary sleep disorder that occurs when the body's internal clock is out of sync with cues from a new time zone is called
- (a) sleep apnea ( )
  - (b) narcolepsy ( )
  - (c) jet lag ( )
  - (d) parasomnia ( )

**7.** In oogenesis, the primary oocytes are arrested in

- (a) prophase I ( )
- (b) metaphase I ( )
- (c) prophase II ( )
- (d) metaphase II ( )

**8.** Pheromones that initiate immediate behavioural responses in target organisms upon reception are

- (a) primer pheromones ( )
- (b) signal pheromones ( )
- (c) releaser pheromones ( )
- (d) trailer pheromones ( )

**9.** Among the primates, estrous cycle is observed in

- (a) orangutans and gorillas ( )
- (b) chimpanzees and gorillas ( )
- (c) tarsiers, gorillas and baboons ( )
- (d) lemurs, lorises and tarsiers ( )

**10.** Uncontrollable anger or violent behavior resulting from the use of anabolic steroids is termed as

- (a) bolic ire
- (b) strop
- (c) roid rage
- (d) rampage

( SECTION : B—SHORT ANSWER )

( Marks : 15 )

Write notes on the following in 5 to 8 sentences each :

3×5=15

UNIT—I

1. Functions of ovarian hormones

**OR**

2. Classification of hormones

UNIT—II

3. Functions of adenylyl cyclase

**OR**

4. Steroid receptors

UNIT—III

5. Circadian rhythm

**OR**

6. Calcium homeostasis

UNIT—IV

7. Spermiogenesis

**OR**

8. Pheromones

UNIT—V

9. Hormones of estrous cycle

**OR**

10. Combined oral contraceptives

( SECTION : C—DESCRIPTIVE )

( Marks : 50 )

Answer the following questions : 10×5=50

UNIT—I

1. Discuss briefly the structure and functions of the adrenal gland. 10

**OR**

2. Write short notes on the following : 5+5=10

(a) Cretinism

(b) Dwarfism

UNIT—II

3. Describe the mechanism of action of insulin. 10

**OR**

4. Describe the mechanism of action of steroid hormones. 10

UNIT—III

5. Discuss briefly the hormonal regulation of glucose homeostasis in vertebrates. 10

**OR**

6. What is parturition? Discuss the different stages during parturition. 10

UNIT—IV

7. Give a detailed account of the process and hormonal regulation of oogenesis in vertebrates. 10

**OR**

8. Describe the process of spermatogenesis. Add a note on its hormonal regulation. 7+3=10

UNIT—V

9. Discuss the different phases of the menstrual cycle and their hormonal regulations. 10

**OR**

10. Discuss briefly the nature, uses and effects of anabolic steroids. 10

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