

2024

ZOOLOGY — HONOURS

Paper : DSE-B-1 and DSE-B-2

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Paper : DSE-B-1

(Endocrinology)

Full Marks : 50

Answer *question no. 1* and *any four* questions from the rest.

1. Answer *any five* questions : 2×5
- (a) Distinguish between Type-I and Type-II diabetes mellitus.
 - (b) Mention the role of melanotrophin in teleost fish.
 - (c) What is hypothalamo-hypophyseal portal system?
 - (d) Distinguish between estrous cycle and menstrual cycle.
 - (e) Describe the functions of prolactin hormone in birds.
 - (f) Compare autocrine and paracrine secretion.
 - (g) State two important functions of oxytocin.
 - (h) Write the symptoms of Graves' disease.
2. (a) Discuss the mechanism of hormone action using cAMP as the second messenger with an example.
(b) Describe the histological features of adrenal cortex of mammals with diagram. (5+1)+(3+1)
3. (a) Describe the role of parathyroid hormone and vitamin D₃ in calcium homeostasis.
(b) Explain the role of insulin in glucose metabolism.
(c) What are the Type-I hormone receptors? (2½+2½)+3+2
4. (a) Classify hormones based on chemical structures.
(b) Mention two types of hypothalamic nuclei and name the hormones secreted from them. 6+(2+2)
5. (a) Define LH surge. Mention the significance of LH surge.
(b) Describe the endocrine control of hypothalamo-hypophyseal-gonadal axis in males. (2+3)+5

Please Turn Over

(0668+0669)

6. (a) Describe in brief the hormonal regulation of ovarian follicular phase with proper diagrams.
(b) Distinguish between basophils and acidophils in anterior pituitary. Give one example of each.
(c) State two advantages of RIA over ELISA. 5+3+2
7. (a) Describe the histological structure and functions of testis.
(b) State the principle of RIA and ELISA. (5+2)+(1½+1½)
8. Write short notes on : 2½×4
(a) Parafollicular cells
(b) Types of hormone receptors
(c) Utility of RIA in biomedical research
(d) Role of TSH.

Paper : DSE-B-2
(Reproductive Biology)

Full Marks : 50

Answer *question no. 1* and *any four* questions from the rest.

1. Answer *any five* questions :

2×5

- (a) What is cryptorchidism?
- (b) What is AMH? What is its function?
- (c) State two functions of oxytocin.
- (d) What is IUCD and what is its function?
- (e) Name two gestational hormones.
- (f) What is ABP? What is its function?
- (g) What is superovulation?
- (h) What is capacitation?

2. (a) Write down the steps of biosynthesis of Estradiol from cholesterol with necessary enzymes.

(b) What is PCOS?

(c) State three roles of testosterone in puberty.

5+2+3

3. (a) What is parturition? How do different hormones influence or help in parturition?

(b) What is fate of corpus luteum when there is no fertilization? What is the difference between corpus luteum and corpus albicans?

(1+4)+(2+3)

4. (a) What is 'Milk let down'? Which hormone is responsible for this?

(b) What is the composition of semen?

(c) What is frozen embryo?

(d) Write the function of relaxin.

(2+1)+3+2+2

5. (a) Draw and describe the ultrastructure of a sperm.

(b) What is polyspermy? How is it avoided?

(3+2)+(2+3)

6. (a) What is infertility? What are the causes of female infertility?

(b) Write the steps of IVF with stress on embryo selection.

(c) What is lactation?

(2+2)+4+2

Please Turn Over

(0668+0669)

7. (a) What are the different contraceptive methods in male?
(b) Elaborate the role of prostaglandins.
(c) What are cryoprotectants?
(d) What is IUI?

3+3+2+2

8. Write short notes on (*any two*):

5×2

- (a) Cryopreservation
(b) Placentation
(c) Accessory Reproductive Organs
(d) Hypothalamo-hypophyseal-gonadal axis.
-