B.Sc. 6th Semester (Honours) Examination, 2025 (CBCS)

Subject : Zoology

Course : DSE-4

(Endocrinology)

Time: 2 Hours **Full Marks: 40**

The figures in the margin indicate full marks.

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

Group – A

1. Answer *any five* questions of the following: 2×5=10

   (a) Which hormone is known as 'hormone of motherhood' and why?

   (b) Differentiate between autocrine and paracrine signalling with example.

   (c) How does calcitonin regulate blood calcium level?

   (d) What are chromaffin cells? Which hormones do they secrete?

   (e) Distinguish between tropic and topic hormone.

   (f) Mention the chemical nature and function of TRH.

   (g) Comment on crinophagy.

   (h) Specify the functions of FSH in male and female.

Group – B

2. Answer *any two* of the following questions: 5×2=10

   (a) Mention the anatomical position of pineal gland. Specify the chemical nature and function of the hormone released from it. Name the biological rhythm regulated by the pineal gland. 1+3+1

   (b) Explain the etilogy and symptoms of Conn's syndrome. Comment on pheochromocytomma. 4+1

   (c) What is parturition? Elaborate the hormonal regulation of parturition. 1+4

   (d) Why is vasopressin named so? Elaborate four crucial functions of oxytocin. 1+4

Group – C

3. Answer *any two* of the following questions: 10×2=20

   (a) What is meant by hypothalamo-hypophyseal portal system? With the aid of labelled diagram explain the concept of hormonal feedback loops with reference to the said system. 1+9

   (b) Describe the histological architecture of thyroid gland. Draw the chemical structure of any one potent hormone secreted from it. Comment on colloid. 6+2+2

(c) What is ELISA? Mention different types of ELISA. Describe any one in detail with suitable diagram. What are the advantages and limitations of using ELISA for hormone assays? 1+1½+4½+3

(d) Why is cell signal transduction named so? Describe in detail the mechanism of action of any one steroid hormone with suitable diagram. 1+9

B.Sc. 6th Semester (Honours) Examination, 2025 (CBCS)

Subject : Zoology

Course : DSE-4 (OR)

(Reproductive Biology)

Time: 2 Hours **Full Marks: 40**

The figures in the margin indicate full marks.

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

Group – A

1. Answer *any five* questions of the following: 2×5=10

   (a) What do you understand by hypothalamo-hypophyseal-gonadal axis?

   (b) Which gland contributes in the lubricating nature of semen? What is Sertoli cell?

   (c) What is the role of the scrotum in the male reproductive system?

   (d) Mention the role of corpus luteum in pregnancy.

   (e) What is the role of Relaxin during parturition?

   (f) Write two essential causes of female infertility.

   (g) What is 'ectopic pregnancy'?

   (h) Mention the ducts (any four) present in the male reproductive system.

Group – B

2. Answer *any two* of the following questions: 5×2=10

   (a) State the adaptation of ovum to prevent polyspermy.

   (b) What is a 'frozen embryo'? Mention the various steps of IVF mentioning its advantages. 1+4

   (c) Briefly describe the laboratory tests that are performed to confirm pregnancy.

   (d) Mention the site of synthesis of Androgens. Mention the steps of androgen synthesis. 2+3

Group – C

3. Answer *any two* of the following questions: 10×2=20

   (a) Discuss the various modern contraceptive technologies available, their benefits and limitations. Explain how these technologies have impacted reproductive health and family planning. 3+3+2+2

   (b) Mention the role of following hormones on regulation of parturition:

   (i) hCG, (ii) Oestrogen, (iii) Progesterone 2+4+4

(c) What is the role of placenta in foeto-maternal relationship? What is Lactogenesis? Mention the hormonal role of Lactogenesis. 3+2+5

(d) Describe the histological structure of testis with a labelled diagram. State the function of Leydig cells. 5+3+2
