

**U.G. 6th Semester Examination - 2025****ZOOLOGY****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : ZOOL-H-DSE-T-05****(Endocrinology)**

Full Marks : 40

Time :  $2\frac{1}{2}$  Hours*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any five of the following:  $2 \times 5 = 10$
- a) Write down the difference between paracrine and autocrine gland?
  - b) Why intake of tryptophan rich food make an individual feel sleepy?
  - c) State the role of the hypothalamo-hypophyseal portal system in homeostasis?
  - d) What is rete testis? Write its function.
  - e) Compare between follicular and parafollicular cell.
  - f) How does NO gas act as a signaling molecule?

*[Turn Over]*

- g) Comment on the role of LH and FSH on ovarian function.
- h) What are the limitations of radioimmunoassay?
2. Answer any two of the following:  $5 \times 2 = 10$
- a) Mention the difference between pinealocytes and astrocytes.
- b) How does cyclic AMP act as second messenger? State the differences between  $G_s$  and  $G_i$ . What is fight and flight response?  $2+2+1$
- c) State the importance of Leydig and Sertoli cell in spermatogenesis.  $2\frac{1}{2} + 2\frac{1}{2}$
- d) Write down the steps of bioassay of hormone using ELISA.
3. Answer any two of the following:  $10 \times 2 = 20$
- a) What are the neuroendocrine glands? Establish a relationship between neuroendocrine axes and feedback loops. Write the key functions regulated by these systems.  $2+4+4$
- b) Briefly describe the structure of endocrine pancreas. Mention the insulin biosynthesis pathway. State the function of pancreatic peptide. Distinguish between IDDM and NIDDM.  $3+3+2+2$

- c) Write the structure and functions of Graafian follicle. Mention the role of gonadal hormones in controlling menstrual cycle. Write its difference with estrous cycle.  $(2+1)+5+2$
- d) Describe hypothalamo-hypophysial-thyroid axis indicating short loop and long loop negative feedback. State the role of sodium iodide symporter (NIS) and TPO in biosynthesis of thyroid hormones. What are Graves' diseases and Hashimoto's thyroiditis?  $3+4+3$