

B.Sc. 6th Semester (Honours) Examination, 2023 (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: $2 \times 5 = 10$**

- (a) State two enteric neuropeptides and the cells releasing them.
- (b) State the causes and symptoms of acromegaly.
- (c) What is the underlying cause of Addison's disease? What are its symptoms?
- (d) What is the significance of the ovarian cycle?
- (e) What are the sources of relaxin hormone and state its function?
- (f) Name four hormones that promote a sense of well-being in our minds.
- (g) Mention the secretions of parvocellular neurosecretory cells.
- (h) Name two commonly used radioisotopes used in RIA.

Group-B**2. Answer any two questions of the following: $2 \times 5 = 10$**

- (a) Discuss the structure and position of pineal gland. Add a note on transport of thyroid hormone. $3+2$
- (b) What are positive and negative feedback mechanisms? Explain citing suitable examples. 5
- (c) Elucidate the signalling mechanism in case of peptide hormone receptors. 5
- (d) Discuss the neuronal regulation of let down of milk. Mention the functions of the hormone secreted by the beta cells of the pancreas. $3+2$

Group-C

3. Answer *any two* questions of the following: $10 \times 2 = 20$
- (a) Name the different hypothalamic nuclei. What are their functions? Give an illustrated account of the hypophyseal portal system. $3+3+4$
 - (b) Classify hormones based on their chemical structure. State two characteristics with example of each class. Mention the physiological effects of high level of parathyroid hormone in human $6+2+2$
 - (c) Define homeostasis. Describe the hormonal mechanism for regulation of blood pressure. Write the full form of ELISA. $2+7+1$
 - (d) Write short notes on:
 - (i) Adrenomedullary hormones
 - (ii) Spermatogenesis

B.Sc. 6th Semester (Honours) Examination, 2023 (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: $2 \times 5 = 10$
- What are teratogens? Give an example.
 - Name two steroid and two glycoprotein hormones.
 - What is 'cumulus oophorus'?
 - How is Graves disease different from simple goitre?
 - Write down the general composition of birth control pill.
 - What is 'pap smear test'?
 - Name the hormones secreted by 'zona fasciculata' and 'zona reticularis'.
 - What would happen-
 - if two sperms fertilize the same egg cell?
 - if two sperms fertilize two egg cells?

Group-B

- 2.** Answer any two questions of the following: $5 \times 2 = 10$
- Which accessory structures contribute to the composition of semen? What are the functions of each structure? 2+3
 - Give a schematic representation of control of male reproductive function by hormones from the hypothalamus, anterior lobe of the pituitary gland, and the testes. 5
 - Mention the name of precursor for all steroid hormones in human. What event in the uterine cycle occurs when the levels of oestrogens and progesterone decrease? 1+4
 - Define menopause. What are the physiological and hormonal changes that accompany this event? 1+4

Group-C

3. Answer *any two* questions of the following:

$10 \times 2 = 20$

(a) Describe the process of fertilization with reference to:

(i) acrosome reaction

5+5

(ii) block to polyspermy

(b) Explain with labelled diagram, the mechanism of action of an amino acid derived hormone.

7+3

(c) Write short notes on:

(i) *in vitro* fertilization

2½+2½

(ii) functions of LH and FSH in males and females

(d) What is parturition? Give a brief description of hormonal regulation of parturition.

2+8