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: 2×5=10

(a) State two enteric neurohormones 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 neurosecretary cells.

(h) Name two commonly used radioisotopes used in RIA.

Group–B

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

(i) Adrenomedullary hormones

(ii) Spermatogenesis

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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: 2×5=10

(a) What are teratogens? Give an example.

(b) Name two steroid and two glycoprotein hormones.

(c) What is 'cumulus oophorus'?

(d) How is Graves disease different from simple goitre?

(e) Write down the general composition of birth control pill.

(f) What is 'pap smear test'?

(g) Name the hormones secreted by 'zona fasciculata' and 'zona reticularis'.

(h) What would happen–

(i) if two sperms fertilize the same egg cell?

(ii) if two sperms fertilize two egg cells?

Group–B

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

(a) Which accessory structures contribute to the composition of semen? What are the functions of each structure? 2+3

(b) 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

(c) 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

(d) 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: 10×2=20

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

(i) acrosome reaction

(ii) block to polyspermy 5+5

(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

(ii) functions of LH and FSH in males and females 2½+2½

(d) What is parturition? Give a brief description of hormonal regulation of parturition. 2+8

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