



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 5th Semester Examination, 2023

DSE-P1-ZOOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

**The question paper contains GROUP-A and GROUP-B
The candidates are required to answer any *one* from *two* groups.
Candidates should mention it clearly on the Answer Book.**

GROUP-A

REPRODUCTIVE BIOLOGY

1. Answer any **five** questions from the following: 1×5 = 5
- (a) What is the function of relaxin hormone?
 - (b) Which hormone is called lactating hormone?
 - (c) What is corona radiata?
 - (d) _____ hormone is at the peak during ovulation. (Fill in the blank)
 - (e) Name the process by which spermatids are transformed into spermatozoa.
 - (f) Wolffian duct is also known as:
 - (A) mesonephric duct
 - (B) ejaculatory duct
 - (C) major sublingual duct
 - (D) cystic duct
 - (g) The first case of IVF-ET technique success was reported by _____ and _____.
(Fill in the blanks)
 - (h) _____ is an organelle that helps the sperm to penetrate the ovum.
(Fill in the blanks)
2. Answer any **three** questions from the following: 5×3 = 15
- (a) Write a brief note on the role of FSH in oogenesis.
 - (b) Write a note on sperm capacitation in mammals.
 - (c) Draw and describe the histological architecture of seminiferous tubule.
 - (d) Describe the formation and function of corpus luteum.
 - (e) Discuss in brief the development of male gonads.

3. Answer any **two** questions from the following: 10×2 = 20
- (a) Discuss on the causes, diagnosis and management of infertility in males. 3+3+4
- (b) Write the two-cell theory for oestrogen production. Add notes on 6+2+2
- (i) sperm banks and
- (ii) frozen embryos.
- (c) What are androgens? Write the chemical structure of testosterone. List the physiological functions of testosterone. 2+2+6
- (d) Describe the process of collection of egg, *in vitro* fertilization and transfer of embryo to recipient mother in the development of a test tube baby. 3+4+3

GROUP-B

ENDOCRINOLOGY

1. Answer any **five** questions from the following: 1×5 = 5
- (a) Define tropic hormone with example.
- (b) Name the cell types that secrete insulin and glucagon.
- (c) Mention the location and function of magnocellular neurons.
- (d) What are catecholamines?
- (e) Melatonin regulates sleep and wakefulness. (True/False)
- (f) State the function of corpus luteum.
- (g) What is the proteinaceous material in the colloid of thyroid follicles?
- (h) Expand the term ELISA.
2. Answer any **three** questions from the following: 5×3 = 15
- (a) What is feedback mechanism? Explain positive feedback control of hormone. 1+4
- (b) Write a short note on Graves' disease and its management.
- (c) Distinguish between hyper- and hypo-thyroidism. 3+2
- (d) Elucidate the hormonal control of spermatogenesis. What is cryptorchidism? 4+1
- (e) Explain briefly the mode of action of steroid hormones.
3. Answer any **two** questions from the following: 10×2 = 20
- (a) Classify hormone on the basis of chemical nature and mode of action. State two important difference between hormones and enzymes. 8+2
- (b) Describe the structure of parathyroid gland. Elucidate the role of hormones in calcium homeostasis. 3+7
- (c) What are the differences between oestrous and menstrual cycle? Elucidate the ovarian and uterine changes during different phases of menstrual cycle. 2+8
- (d) Describe the histological architecture of adenohypophysis. Name the hormones secreted from the pituitary gland and state their functions. 4+2+4

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