

B.Sc. ZOOLOGY
THIRD SEMESTER (REPEAT)
PHYSIOLOGY: CONTROLLING AND COORDINATING
SYSTEM
BSZ-302

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1×20=20

1. Pituitary hormone triggering the male testes to produce sperm and follicular development on a monthly basis in females, is:
 - a. Prolactin
 - b. Growth Hormone
 - c. Follicle-Stimulating Hormone
 - d. Luteinizing Hormone
2. Difference between endocrine and exocrine glands is that:
 - a. Endocrine glands release hormones, exocrine glands release waste
 - b. Endocrine glands are interconnected, exocrine glands are totally independent
 - c. Endocrine glands are formed by epithelial tissue, exocrine glands are connective tissues primarily
 - d. Endocrine glands are ductless, exocrine glands release secretions into ducts or at the surface of the body
3. Which of the following is not an endocrine gland?
 - a. Adrenal
 - b. Pituitary
 - c. Lacrima
 - d. Thyroid
4. Iodine is essential for the synthesis of which hormone?
 - a. Adrenaline
 - b. Insulin
 - c. Thyroxine
 - d. Testosterone
5. Blood pressure in human body is controlled by:
 - a. Adrenal gland
 - b. Thyroid gland
 - c. Thymus gland
 - d. Corpus luteum
6. Which of these is not a function of testosterone?
 - a. Development of male reproductive tissues
 - b. Development of follicles
 - c. Growth of body hair
 - d. All of the above
7. Most hormones of the endocrine system are regulated by a:
 - a. Negative feedback mechanism
 - b. Positive feedback mechanism
 - c. Hormone-receptor complex
 - d. Hormone-gene complex
8. Which of the following hormones are responsible for the "fight-or-flight" response?
 - a. Epinephrine and nor epinephrine
 - b. Insulin and glucagon
 - c. Estrogen and progesterone
 - d. Thyroxin and melatonin
9. Name the gland which releases Neurohormone.
 - a. Pancreas
 - b. Pituitary
 - c. Thyroid
 - d. Hypothalamus

10. Statement A: The cell bodies of supraoptic and paraventricular nuclei are large compared to those of other hypothalamic neurons; hence, they are called magnocellular neurons.
Statement B: AVP and oxytocin are synthesized as parts of larger precursor proteins (prohormones) in the cell bodies of these neurons.
- Statement A is correct but statement B is incorrect
 - Statement A is incorrect but statement B is correct
 - Both statement A and B are correct
 - Both statement A and B are incorrect
11. Estrogen is produced by thecells of the developing follicle.
- Corona radiata
 - Antrum
 - Granulosa cells
 - Zona Pellucida
12. Which of the following hormone is not involved in ovulation?
- GnRH
 - FSH
 - LH
 - Progesterone
13. Testosterone is secreted by:
- Sertoli cells
 - Leydig cells
 - Spermatogenic cells
 - None of the above
14. Corpus luteum secretes.....
- LH
 - Progesterone
 - LH & Progesterone
 - FSH
15. The primary receptor for the different steroid hormones are found mainly in the:
- Cytoplasm
 - Surface of the plasma membrane
 - Nucleus
 - Both (a) and (c)
16. Which of the following adrenal hormone is essential for fluid and electrolyte balance?
- Aldosterone
 - Cortisol
 - ADH
 - Oxytocin
17. The deficiency of glucocorticoids causes:
- Cushings syndrome
 - Hyperglycemia
 - Diabetes insipidus
 - Addison's disease
18. Insulin containsamino acid.
- 21
 - 25
 - 11
 - 51
19. What is the role of insulin in liver?
- Increases glycogen synthesis
 - Increases triacylglycerol synthesis
 - Increases protein synthesis
 - All of the above
20. Deficiency of which hormone may cause osteoporosis in females?
- Progesterone
 - Estrogen
 - Prolactin
 - FSH

(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. Describe in details the different follicular stages of ovary with diagrams. Write any three functions of testosterone. | 7+3=10 |
| 2. Describe the anatomical structure of thyroid gland with a cross sectional view diagram. | 2+8=10 |
| 3. Explain the synthesis and function of T ₃ and T ₄ hormones. | 5+5=10 |
| 4. Describe the anatomical structure of thyroid gland with a cross sectional view diagram. | 2+8=10 |
| 5. Explain hormonal feedback mechanism with emphasis on positive and negative regulation. | 5+5=10 |
| 6. What is the role of adrenal glucocorticoids in carbohydrate and protein metabolism? What is adrenal insufficiency? | 7+3=10 |
| 7. What are second messengers? Describe the role of Cyclic AMP second messenger system. | 2+8=10 |
| 8. Explain with a well labeled diagram the histological structure of the pancreatic islets and name the hormones secreted by each of the cell types in the islets. Write three functions each of insulin and glucagon. | 5+5=10 |

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