Total number of printed pages–7

63/1 (SEM–6) DSE4/ZOOHE6046

2024

ZOOLOGY

Paper : ZOOHE6046

(Endocrinology)

Full Marks : 60

Pass Marks : 24

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer from the following ***(any five)*** : 1×5=5

   (a) BMR (basal metabolic rate) is controlled by which of the following glands ?

   (i) Pancreas

   (ii) Parathyroid

   (iii) Thyroid

   (iv) Ovary

Contd.

(b) Which endocrine gland is responsible for secretion of melatonin ?

(i) Pancreas

(ii) Adrenal gland

(iii) Pineal gland

(iv) Parathyroid gland

(c) What is the role of adrenal gland in the body ?

(i) Regulation of calcium level

(ii) Regulation of metabolism

(iii) Production of eggs in female

(iv) Regulation of temperature

(d) What is the role of hormone receptors in hormone action ?

(i) Storage of hormones

(ii) Regulation of hormone production

(iii) Sensing and response to hormones

(iv) Circulation of hormones

(e) Disorder of which gland can lead to hormonal imbalances and growth issues ?

(i) Adrenal gland

(ii) Thyroid gland

(iii) Ovary

(iv) Pancreas

(f) How do hormones exert their actions at the cellular level ?

(i) By direct injection into cells

(ii) By binding to hormone receptors on the cell membrane

(iii) By diffusing through the cell wall

(iv) By interacting with the cell organelles

(g) What is the main function of parathyroid gland in the body ?

(i) Regulation of blood sugar levels

(ii) Regulation of blood calcium levels

(iii) Production of adrenaline

(iv) Regulation of body temperature

(h) Which cell is responsible for the production of testosterone in male ?

(i) Follicular cells

(ii) Acinar cells

(iii) Sertoli cells

(iv) Leydig's cells

(i) How are hormone actions regulated at the molecular level ?

(i) By hormonal concentration in blood

(ii) By feedback mechanism

(iii) By transcriptional and translational control

(iv) By direct interaction with DNA

(j) The hypothalamic nuclei responsible for controlling the release of hormones from the pituitary gland are termed :

(i) Supraoptic nuclei

(ii) Arcuate nuclei

(iii) Paraventricular Nuclei

(iv) Suprachiasmatic nuclei

2. Answer the following questions : ***(any five)*** 2×5=10

(a) Write the significance of studying endocrine disorder in human health.

(b) How hormones are transported in the body ?

(c) What is the role of neurohormones in the endocrine system ?

(d) Explore the disorders associated with the pituitary gland.

(e) Write the role of thyroid gland in maintaining homeostasis.

(f) What component of the body controls hormone action at the molecular level and how ?

(g) What are group-II hormones ? Write *at least two* names.

3. Answer ***any five*** of the following questions : 5×5=25

(a) Explain the classification of hormones in endocrinology.

(b) Discuss the feedback mechanisms involved in the regulation of neuroendocrine glands.

(c) What are molecular mediators ? Write its importance in endocrinology.

(d) What are neurohormones ? How do they differ from regular hormones ?

(e) If a person has hyperthyroidism, predict how this condition might affect his metabolism and overall growth ?

(f) Discuss how hormones are regulated through feedback mechanisms.

(g) Differentiate between acidophilic and basophilic cells of adenohypophysis.

(h) Explain the characteristics of hormones.

(i) Analyse the genetic control of hormone action.

4. Answer ***any two*** of the following questions : 10×2=20

(a) Explain the molecular mechanisms involved in hormone action at the cellular level including genetic control of hormone actions.

(b) Describe the structure and functions of the hypothalamo-hypophysial axis covering its role in regulating various hormonal secretions.

(c) Describe the function and regulation of the thyroid gland.

(d) Describe the structure of the pineal gland and its secretions highlighting their functions in biological rhythms and reproduction.
