SANJEEV AGRAWAL GLOBAL EDUCATIONAL UNIVERSITY, BHOPAL
Mid Semester Test -II
Autumn 2024-25 (Jan 2025)
Name of Program-PhD
Course Name - DSE- Zoology
Course Code – ZL22P104

Max. Duration: 1.5 hrs

Max. Marks: 30

SECTION - A

1. Objective Type Questions (ALL QUESTIONS ARE COMPULSORY) (5X1 = 05)

a) Which of the following provides evidence for the molecular basis of evolution?
- i. Fossil records
- ii. Comparative anatomy
- ii. DNA, RNA, and protein sequence
- iv. Biogeography

b) Amphioxus is considered a model organism for studying vertebrate evolution because it:
- i.) Developed vertebral column
- ii.) Lacks a notochord
- iii.) Shares key developmental features
- iv.) Is a modern-day vertebrate

c) The hypothalamus controls the pituitary gland through:

- i) Direct electrical impulses
- ii) The release of hormones that regulate pituitary functions
- iii) Neural impulses that trigger hormone release from the adrenal glands
- iv) Direct control of gonadal function

d) The pineal gland primarily secretes which hormone that regulates circadian rhythms?

- i) Melatonin
- ii) Thyroxine
- iii) Insulin
- iv) Cortisol

e) Which of the following hormones is primarily involved in regulating calcium and phosphate balance in vertebrates?

- i) Insulin
- ii) Parathyroid hormone (PTH)
- iii) Estrogen
- iv) Progesterone

SECTION – B

2. Short Answer Type Questions (Attempt **any THREE**) (3X5 =15)

- a) Describe the structure and function of the hypothalamus?
- b) Explain the role of parathyroid hormone (PTH), calcitonin?
- c) Discuss the relationship between the pineal gland, thyroid gland?
- d) Explain how hormones regulate the metabolism of carbohydrates?
- e) Explain how hormones regulate the metabolism of proteins?

SECTION – C

3. Long Answer Type Questions (Attempt **any ONE**) (1X10 =10)

- a) Describe how trace elements like Fe, Cu, Mg, Zn, and Se contribute to metabolic processes?
- b) What is its significance in controlling various physiological processes in the body??