

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIFTH SEMESTER EXAMINATION, MARCH 2021

THIRD YEAR [BATCH 2018-21]

ZOOLOGY (HONOURS)

PAPER : VI

Date : 16/03/2021

Time : 11 am – 1 pm

Full Marks : 50

Answer all the Questions

Group - A

1. a) Define trophic hormone with an example. (2)
b) What do you mean by the second messenger system in hormone action? Name two hormones which use cGMP as second messenger. (1+1)
c) Why adrenal medullary hormones are also known as catecholamines? (1)
2. a) What is a G-protein? (2)
b) Mention two functions (each) of oxytocin and vasopressin. (2)
c) State the significance of ryanodine receptor in hormone actions. (1)
3. a) Differentiate between hormone and pheromone. (2)
b) State the types and significance of hormonal cross-talk. (2)
c) Draw the relationship between insulin and GLUT. (1)
4. a) Briefly mention the steps of action of growth hormone (GH). (2)
b) How could you justify hypophyseal hormonal feed-back with hypothalamic releasing factors (RF)? (2)
c) Define kairomone with example. (1)
5. a) State three unique features of steroid hormones. What is the significance of StAR in steroidogenesis? (1+1)
b) Mention the importance of TPO in thyroxin biosynthesis. What is pendrin? (1+1)
c) Why glucagon is considered as hyper-glycemic hormone? (1)

Group - B

6. a) Mg^{2+} salts and ATP are the key factors in oxidising luciferin' – justify. (2.5)
b) Describe how the electrocytes generate electric filed in Stargazers. (2.5)
7. a) Elaborate the significance of bioluminescence especially in insects. (5)
8. a) State the major features of a biological clock. (3)
b) Define Circadian Rhythm. (1)
c) Name three neuronal pathways of SCN controlling Circadian Rhythm. (1)

Group - C

9. a) Explain how the orchestrated balance of the pituitary hormones (LH & FSH) and the ovarian hormones (estrogen & Progesterone) coordinates the menstrual cycle physiology. (5)

Group - D

10. a) What are MIT and DIT? (2)
- b) State the Role of PNMT in the biosynthesis of adrenal medullary hormones. (3)

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