

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, AUGUST 2021

SECOND YEAR [BATCH 2019-22]

ZOOLOGY (HONOURS)

PAPER : IX [CC9]

Date : 09/08/2021

Time : 11 am – 1 pm

Full Marks : 50

Answer all the questions:

Group A

1. a) How do the bone macrophagic cells participate in osteo-remodeling?
b) “CCK is having a biphasic physiological action”-Justify.
c) What is hypothalamo-hypophyseal portal system? [2+2+1]
2. a) “Placenta is considered to be a temporary endocrine tissue”-Justify.
b) How does uncontrolled hyperglycaemia increase the risk of cancer?
c) What is ‘Bruce effect’? [2+2+1]
3. a) How does pheromone differ from hormones?
b) How does growth hormone exert its function?
c) What is ‘hormonal cross talking’? [2+2+1]
4. a) How is neurohypophysis related to parturition?
b) How does Ca^{++} play significant role as a second messenger?
c) Differentiate between kiromone and synomone. [2+2+1]
5. a) State the pathological features of ‘Addison’s Disease’ and ‘Cretinism’.
b) Add a note on GPCR.
c) What is Chromaffin tissue? [2+2+1]

Group B

6. a) Mention the steps of oxidation of D-Luciferin producing finally the ‘Biological Light’ in fireflies.
b) Enumerate the significance of blue-green luminescence found in the larvae of *Arachnocampa*. [4+1]
7. Elaborate with a diagram how the electrocytes generate electrical output in *Electrophorus*. [4+1]

Group C

8. a) In the perspective of ‘Gut Brain Axis’, how does the enteric nervous system influence gut microflora and *vice versa*?
b) “Ghrelin and leptin are two hormones that influence appetite and obesity management” – elaborate.

- c) “Development of ulcerative colitis is associated with unhealthy microbiome in the gut” – comment. [2+2+1]

Group D

9. How does the balance of four hormones Estrogen, Progesterone, LH and FSH control the menstrual cycle in females? [5]

Group E

- 10.a) What is catecholamine?
- b) Describe the biosynthesis of insulin. [1+4]

_____ × _____