

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIFTH SEMESTER EXAMINATION, DECEMBER 2019

THIRD YEAR (BATCH 2017-20)

ZOOLOGY (Honours)

Paper : VI

Date : 16/12/2019

Time : 11 am – 1 pm

Full Marks : 50

1. Answer any five questions:

[5×2]

- What is transducin?
- Enumerate the various means of cellular desensitization.
- What are Herring bodies and pituicytes?
- What are antidiuretics?
- What do you mean by catecholamines?
- Differentiate Calcitonin and parathormone.
- What is heat phase of estrous cycle?
- Explain the effect of synomones with suitable example.

2. Answer any four questions:

[4×10]

- Compare hormones and neurotransmitter.
What is the significance of second messengers in cell signalling?
How various genomic responses are mediated without second messengers?
Explain the molecular mechanism of steroid hormone mediated target cell response through a flow chart and a suitable diagram. [2+3+3+2]
- Draw and describe the ultrastructure of corticotrophs.
What are PVN and SON?
Name the site and state the regulation of TRH secretion.
Differentiate between dye and stain. [3+2+(1+2)+2]
- What functions are performed by an electric organ in *Tropedo*? Mention the steps of oxidation of Luciferin in fireflies. "Bioluminescence helps insects alluring mates and deluding predators" — justify. [2½+4+3½]
- 'Gut-brain axis includes several endocrine systems of human body' – name them.
Explain the survival strategy of *Helicobacter pylori*.
'Enteric nervous system has a distinct link with nature and function of gut microbiome'—elaborate.
Name two diseases which are thought to have strong association with gut microbiota. [2+4+2+2]
- Describe the different steps of insulin biosynthesis with suitable diagram.
'Vitamin D₃ plays a critical role in calcium metabolism' — explain.
What is role NIS symporter? [5+3+2]
- Discuss the hormonal regulation of menstrual cycle.
What is MIT and DIT? Mention its role in thyroid hormone biosynthesis.
Why PNMT is crucial in biosynthesis of catecholamines? [4+3+3]

g) Comment on the antidiuretic effects of arginine-vasopressin on the regulation of urine volume.

What is POMC?

Name the cells in which POMC is found.

What are eicosanoids?

Name the site and state the regulation of CRH secretion.

[3+1+1+2+3]

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