

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

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

SECOND YEAR (BATCH 2018-21)

Zoology (General)

Paper : III

Date : 19/12/2019

Time : 11 am – 1 pm

Full Marks : 50

[Use a separate Answer Book for each Group]

Group – A

1. **Answer any five questions:**

[5×2]

- Distinguish between saturated and unsaturated fatty acids.
- What are neurotransmitters? Give an example.
- Name two hormones secreted from posterior pituitary gland. Mention one function of each.
- What are acromegaly and acromicria?
- What are diabetes insipidus and diabetes mellitus?
- Write one important function of LH and FSH.
- Differentiate between osmoregulators and osmoconformers.
- What are eicosanoids?

2. **Answer any two questions:**

[2×2½]

- Name two insect hormones and mention their sources.
- State the functions of oxytocin.
- Write the composition of vertebrate blood.
- What is Hypothalamic-Hypophyseal pathway?
- State the role of calcium in synaptic transmission.

3. **Answer any two questions:**

[2×5]

- What are homopolysaccharide and heteropolysaccharide? Give example. Name one basic and one acidic amino acid. What is cholesterol? [2+1+1+1]
- Depict the process of osmoregulation in fresh water teleost.
What is TMAO? Mention its role in the osmoregulation process in fish. [2½+(1+1½)]
- Illustrate the process of synaptic transmission with a suitable diagram. [3+2]
- Name four gluconeogenic enzymes. Mention their roles in neoglucogenesis. [1+4]
- Describe the molecular mechanism of muscle contraction with a suitable diagram. [3+2]

Group – B

4. **Answer any five questions:**

[5×2]

- Write down significance of the red data book.
- Distinguish between habitat and niche.
- What do you mean by royal jelly?

- iv) Give the mathematical expression of species diversity index.
- v) What is a keystone species? Give example.
- vi) Cite an example of a scheduled-I Bird and Scheduled-I Amphibian from India.
- vii) Distinguish between potential mortality and realised mortality.
- viii) Define Net Primary Productivity and Gross Primary Productivity.

5. **Answer any two questions:**

[2×2½]

- a) Write down differences between the national park and wildlife sanctuary.
- b) Distinguish between 'k-strategy' and 'r-strategy'.
- c) Explain the 'Competitive Exclusion principle' by describing Gause's experiment.
- d) State the difference between 'S' shaped and 'J' shaped growth curves.
- e) Draw a 'Y'-shaped energy flow model and illustrate briefly its components to show the flow of energy.

6. **Answer any two questions:**

[2×5]

- a) What is 'CITES'? What are the main objectives of biosphere reserve?
Mention two mammals for each 'critically endangered' and 'endangered' category respectively. [1+2+2]
- b) Define biodiversity. Describe the causes behind the loss of biodiversity. [2+3]
- c) Write a short note on EIA. [5]
- d) What is acid rain?
Name two greenhouse gases.
What are the effects of ozone hole? [2+1+2]
- e) Differentiate between food chain and food web. Give a brief account of the causes and consequences of noise pollution. [2+3]

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