

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

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

SECOND YEAR [BATCH 2019-22]

ZOOLOGY (HONOURS)

PAPER : V [CC5]

Date : 12/03/2021

Time : 11 am – 1 pm

Full Marks : 50

Answer all the questions:

Group-A

1. a) What is net reproductive rate? (1)
b) How does exponential growth differ from a logistic one? (2)
c) A population with an initial size $[N(0)]$ of 100 is growing at a rate (λ) of 1.02. What will be its size $[N(t)]$ after 20 years? (2)
2. a) Distinguish between fundamental and realised niche. (1)
b) What is character displacement? (1)
c) Does it have any relationship with resource partitioning? (1)
d) Describe the phenomenon with a suitable example. (2)
3. a) What are the outcomes of competition? (1)
b) Explain with suitable graphical models how a predator interacts with its prey to give rise coupled oscillations in their abundances. (4)
4. a) What is meant by a threatened species? (1)
b) Give a brief account of the causes of wildlife decline in India. (4)
5. a) Mention briefly the effects of global warming. (2)
b) How can acid rains be controlled? (2)
c) State how El-Nino affects India. (1)

Group-B

6. a) How can the Leibig's law be implied to the modern agricultural practices? (2)
b) What is Primary Productivity? (1)
c) State how different factors regulate the rate of productivity. (2)
7. a) What special features does the Y-shaped model of energy flow bear? (2)
b) "Universal Model of is a holistic way to illustrate the flow of energy in different trophic levels" – justify. (3)

Group-C

8. a) Mention three salient features of a xenobiotic substance. (1)
- b) How does liver play crucial role in the metabolism of xenobiotic elements? (1)
- c) Differentiate between acute toxicity and chronic toxicity. (1)
- d) What do you mean by 'knock out' dose of a toxicant? (1)
- e) Why has Indian one-horned rhino been placed into the schedule I of Wildlife Protection Act, 1972? (1)

Group-D

9. a) What do you mean by α , β and γ diversities? (2)
- b) What are the criteria of a biodiversity hotspot? (1)
- c) Discuss briefly about the biodiversity hotspots in India. (2)
10. Write down short notes on JFM and Flagship species. (2.5+2.5)

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