

4/EH-63 (iv) (Syllabus-2015)

2017

(April)

ZOOLOGY

(Elective / Honours)

FOURTH PAPER

(**Developmental Biology, Ecology and
Economic Zoology**)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer Question No. **1** and *any four* from the rest

1. Answer any *three* of the following : $4 \times 3 = 12$

(a) "For normal development, introduction of the male pronucleus is not always essential." Explain the statement.

(b) Explain the phase/process in embryogenesis which transforms a unicellular fertilized egg into a compact mass of blastomeres called morula and ultimately a blastula.

(c) Write a short note on water pollution and its effects.

(2)

- (d) Explain non-renewable and renewal resources with suitable examples.
- (e) Give an account of caste system in honeybees.
2. What is fertilization? Describe briefly the events occurring in the process of fertilization. What is its significance? $2+6+3=11$
3. What is spermatogenesis? Explain the process of spermatogenesis with suitable labelled diagrams. $2+6+3=11$
4. (a) What do you understand by the terms food chain and food web? Explain with suitable examples. 4
- (b) Discuss trophic relationship and energy transfer in an ecosystem. $4+3=7$
5. What are intraspecific and interspecific relationships? Give an account of interspecific interactions with special reference to animals. $4+7=11$
6. (a) Describe the process of composite fish culture. 5
- (b) Briefly describe the steps involved in induced breeding by hypophysation technique. 6

(3)

7. What are ecological pyramids? Describe the various types of ecological pyramids with illustrations. $2+9=11$
8. Write short notes on any two of the following : $5\frac{1}{2}\times 2=11$
- (a) Metamorphosis in frog
- (b) Integrated pest management
- (c) Economic importance of sericulture
- (d) Ecological niche

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Answer Question No. **1** and *any four* from the rest

1. Answer any *three* of the following questions :

4×3=12

(a) What are the different types of eggs based on yolk?

(b) Write a short note on induced breeding.

(c) Write a note on water pollution.

- (d) Differentiate between a niche and a biome.
- (e) Write a note on the economic importance of apiculture.
2. What is metamorphosis? Give an account of metamorphosis in amphibians. $2+9=11$
3. What precisely is meant by activation of (a) egg and (b) sperm? Discuss egg activation during fertilization. $4+7=11$
4. What are abiotic ecological factors? Write a note on the role of light as an important ecological factor. $3+8=11$
5. What is food chain? What are the components of a food chain? Write an account on the basic types of food chains with suitable examples. $1+2+8=11$
6. What are the intraspecific and interspecific associations? Write a note on the different types of interspecific associations citing suitable examples. $2+9=11$
7. Give a detailed account of Integrated Pest Management. 11

8. Write short notes on any two of the following : $5\frac{1}{2}\times 2=11$
- (a) Types of placenta
- (b) Product of sericulture and its economic importance
- (c) Food web
- (d) Fate map of frog embryo
