

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

**2 0 1 7**

**( 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.

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- (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

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( Continued )

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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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