

6/H-63 (viii) (Syllabus-2015)

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(May/June)

ZOOLOGY

(Honours)

**(Developmental Biology, Environmental Biology
and Biotechnology)**

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. Write in brief on any three of the following :

4×3=12

- (a) Radial unequal holoblastic cleavage**
- (b) Factors causing birth defects**
- (c) Phosphorous cycle**
- (d) Acid rains**
- (e) Southern blotting**

(2)

2. (a) What are morphogenetic movements? Briefly explain the role played by these movements on morphogenesis. $1+2=3$
- (b) With the help of illustrations, describe any four types of morphogenetic movements. $2 \times 4 = 8$
3. With the help of diagrams, explain the different types of placenta on the basis of distribution of villi and the involvement of embryonic tissue. $5\frac{1}{2} + 5\frac{1}{2} = 11$
4. (a) What is a biogeochemical cycle? Explain with the help of a flow diagram the nitrogen cycle. $1+4+1=6$
- (b) Explain *in situ* conservation of wildlife in relation to Sanctuaries and National Parks. How does a Sanctuary differ from a National Park? $4+1=5$
5. (a) Explain, with the help of examples, the Liebig's law of the minimum. What are its limitations? $3+1=4$
- (b) What are the sources and effects of radioactive pollution? What measures can be taken to control it? $5+2=7$
6. What are cloning vectors? Using common examples of vectors, explain with the help of diagrams the characteristics of a plasmid vector and a cosmid vector. $1+5+5=11$

(3)

7. (a) Briefly explain the types of restriction enzymes. Explain how restriction enzymes are used in genetic engineering. $3+3=6$
- (b) What are the causes, effects and remedies of ozone depletion? $2+2+1=5$
8. Write short notes on any *two* of the following : $5\frac{1}{2} \times 2 = 11$
- (a) Aging theories
- (b) cDNA library
- (c) Biological indicators

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