2023

(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) Concept of organizer in developmental biology

(b) Teratogenesis

(c) Biome

(d) Acid rain

(e) Genomic library

2. What is gastrulation? Describe the process of gastrulation in chick embryo up to the formation of the three germinal layers with the help of suitable illustrations. 1+8+2=11

3. Describe with the help of a labelled diagram, the different types of foetal membranes found in mammals. Add a note on the functions of each. 7+2+2=11

4. *(a)* What is ecological succession? Describe the various stages of ecological succession in a hydrosere or hydrarch succession. 2+6=8

   (b) Describe in brief Shelford's law of tolerance. 3

5. *(a)* What is pollution? Write briefly about radioactive pollution. 2+4=6

   (b) What is ozone depletion and what are its impacts on the environment? 5

6. What are cloning vectors? What are the important features necessary for the function of a cloning vector? Describe the different types of cloning vectors with the help of suitable diagrams and examples. 2+4+5=11

(Continued)

7. *(a)* Describe the nitrogen cycle with the help of a diagram. 7

   (b) Write a short note on the concept of ageing. 4

8. Write short notes on any *two* of the following : 5½×2=11

   (a) Organogenesis of the vertebrate eye

   (b) Liebig's law of minimum

   (c) Polymerase Chain Reaction (PCR)

   (d) Applications of recombinant DNA technology

★★★