

Total No. of Printed Pages—3

6 SEM TDC ZOOH (CBCS) C 13

2025

(May)

ZOOLOGY

(Core)

Paper : C-13

(Developmental Biology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

1. Fill in the blanks : 1×5=5

(a) When yolk is concentrated in vegetal half then it is called _____ type of egg.

(b) In _____ type of blastula, blastocoel is filled with yolk.

(c) Mammals in which true placenta is present are called _____.

(2)

(d) ____ is the fetal membrane to store the waste products during embryonic development.

(e) ____ hormone promotes larva-to-larva molt in insect metamorphosis.

2. Write short notes on (any two) : $4 \times 2 = 8$

(a) Epimorphosis

(b) Egg membranes

(c) Embryonic induction

(d) Amniocentesis

3. Distinguish between (any two) : $3 \times 2 = 6$

(a) Artificial and natural marking in fate map of gastrulation

(b) External and internal fertilization

(c) Cleavage and blastula

(d) Oogenesis and spermatogenesis

4. What is implantation? Discuss different stages of implantation in human embryo. $1 + 7 = 8$

Or

Discuss briefly the placenta on the basis of structural organization. What are the different types of cells in the placenta? $6 + 2 = 8$

(3)

5. Define aging. Explain any three theories of aging. $2 + 6 = 8$

Or

Define metamorphosis. Discuss the changes occur during amphibian metamorphosis. Write briefly about hormonal control of amphibian metamorphosis. $1 + 4 + 3 = 8$

6. What is cleavage? Discuss briefly the patterns of cleavage with examples. $2 + 7 = 9$

Or

Discuss early development of frog up to gastrulation with proper diagrams. 9

7. Define teratogenesis. Discuss different teratogens and their effects on embryonic development. $1 + 8 = 9$

Or

What is in vitro fertilization? Write various stages of in vitro fertilization. Mention the merits and demerits of in vitro fertilization. $1 + 4 + 4 = 9$

Total No. of Printed Pages—3

6 SEM TDC ZOOH (CBCS) C 14

2025

(May)

ZOOLOGY

(Core)

Paper : C-14

(Evolutionary Biology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

1. Fill in the blanks : 1×5=5

- (a) According to chemical evolution, _____ are the first pre-cells that gradually transformed into living cells.
- (b) The use and disuse theory of evolution was proposed by _____.
- (c) _____ fossil is formed when minerals fill the cavity left behind by a decayed organism.

(2)

- (d) The gradual change in the characters of a species across a geographical area forms a ____.
- (e) ____ is the movement of alleles from one population to another due to interbreeding between members of two population.
2. Differentiate between the following (any two) : $3 \times 2 = 6$
- (a) Darwinism and Neo-Darwinism
- (b) Hominid characteristics and Primate characteristics
- (c) Allopatric and Sympatric speciation
- (d) Microevolution and Macroevolution
3. Write short notes on the following (any three) : $4 \times 3 = 12$
- (a) Causes of mass extinction
- (b) Neutral theory of molecular evolution
- (c) Multiple sequence alignment (MSA)
- (d) Background extinction
- (e) Sexual selection
4. Describe briefly about the evolution of primates to humans. 6
- Or
- Discuss about the molecular analysis of human origin.

(3)

5. Describe the process of chemical origin of life. What is biogeny? $5+3=8$
- Or
- Differentiate between chemogeny and biogeny. Write a note on the evolution of eukaryotes. $2+6=8$
6. Describe different types of heritable variations and explain their roles in evolution. 8
- Or
- Define palaeontology. Explain the evidences from fossil records in favour of organic evolution citing suitable examples. $1+7=8$
7. What are the factors that disrupt the Hardy-Weinberg equilibrium? Write a note on Kin selection. $5+3=8$
- Or
- Define genetic drift. Explain the role of migration and mutation in changing allele frequencies. $1+7=8$
