

**2024/TDC (CBCS)/EVEN/SEM/
ZOOHCC-601T/022**

TDC (CBCS) Even Semester Exam., 2024

ZOOLOGY

(6th Semester)

Course No. : ZOOHCC-601T

(Developmental Biology)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

UNIT—1

1. Answer any two of the following : 2×2=4

(a) Define embryology. Who is regarded as the founder of the science of embryology?

(b) State the biogenetic law.

(c) What is Spemann's organizer?

(2)

2. Answer any one of the following : 6

(a) Discuss the different phases of development of an organism in the light of embryology.

(b) Write short notes on any two of the following : 3×2=6

(i) Germplasm theory

(ii) Preformation theory

(iii) Epigenetic theory

UNIT—2

3. Answer any two of the following : 2×2=4

(a) What is oogenesis? Name the different stages of oogenesis.

(b) Define cleavage. Define determinate cleavage.

(c) Define external and internal fertilizations.

4. Answer any one of the following : 6

(a) Discuss the process of gastrulation in frog with proper illustration. Add a note on the significance of gastrulation. 4+2=6

(3)

(b) Write short notes on any two of the following : 3×2=6

(i) Fertilizing-antifertilizing reactions

(ii) Construction of fate maps by artificial marking

(iii) Types of egg on the basis of distribution of yolk

UNIT—3

5. Answer any two of the following : 2×2=4

(a) What are fate maps?

(b) Define 'implantation' in embryology.

(c) What are the functions of yolk sac and amnion?

6. Answer any one of the following : 6

(a) What type of placenta is found in human? Discuss the histological types of placenta found in mammal with proper illustration. 1+5=6

(b) Name the extra-embryonic membranes found in birds. Write the functions of each of the extra-embryonic membranes in birds. Add a note on the importance of extra-embryonic membranes. 2+2+2=6

(4)

UNIT—4

7. Answer any *two* of the following : $2 \times 2 = 4$

- (a) What is metamorphosis? In which group of animals metamorphosis generally occurs?
- (b) Define regeneration. Name the basic type of regeneration in animals.
- (c) Define the process of ageing.

8. Answer any *one* of the following :

6

- (a) Discuss the hormonal control of metamorphosis in amphibians.
- (b) Write short notes on the following : $3 \times 2 = 6$
 - (i) Epimorphosis with example
 - (ii) Theories of ageing

UNIT—5

9. Answer any *two* of the following : $2 \times 2 = 4$

- (a) Define amniocentosis.
- (b) Mention the importance of embryonic stem cell (ESC) in Biology.
- (c) Define zygote intrafallopian transfer (ZIFT).

(5)

10. Answer any *one* of the following : 6

- (a) What is teratogenesis? Discuss the genetic basis of teratogenesis in animals. $1+5=6$
- (b) What do you understand by in vitro fertilization (IVF)? Discuss the major steps involved in the in vitro fertilization. $1+5=6$
