U.G. 6th Semester Examination - 2025

ZOOLOGY

[HONOURS]

Course Code : ZOOL-H-CC-T-13

[Developmental Biology]

Full Marks : 40 Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **five** of the following: 2×5=10

   a) What is Homotypic and Heterotypic Induction?

   b) Distinguish between holoblastic and meroblastic cleavage.

   c) What is spermiogenesis?

   d) What are Cell Replacement Therapies (CRT)?

   e) What are organizers? Give an example.

   f) Differentiate between Totipotent and Pluripotent cell.

   g) What do you mean by Hypothalamus - Pituitary - Gonadal Axis in spermatogenesis?

   h) What is amniocentesis? Mention its signifiance.

2. Answer any **two** of the following: 5×2=10

a) Define Oogenesis. How many polar bodies are formed during oogenesis in human? How many female gamete/(s) are produced from one primary oocyte? Write the function of corpus luteum. 1+1+1+2

b) Explain the development of Allantois in birds with a suitable diagram.

c) Write a note on stem cells and their roles in developmental biology. 3+2

d) What is Heteromorphic regeneration? Write two types of regeneration with example. 1+2+2

3. Answer any **two** of the following: 10×2=20

a) What do you mean by Teratogenesis? Write down one biological, one physical and one chemical/pharmacological teratogens and their effects on embryonic development. 1+3+3+3

b) What do you mean by Embryonic Induction? Name the types of Embryonic Induction. Discuss on experimental evidence to Induction. Discuss the process of morphallaxis with reference to *Hydra*. 2+2+3+3

c) What is placenta? Explain the types of placenta based on distribution of villi/Chorion with suitable example. Differentiate between Deciduate and Non-deciduate placenta by giving suitable examples of each types. 1+4+5

d) Write short notes on (any **two**): 5+5

i) Blocks to polyspermy.

ii) *In vitro* fertilization.

iii) Epimorphosis.
