

# **B.Sc. 6<sup>th</sup> Semester (Honours) Examination, 2022 (CBCS)**

## **Subject: Zoology**

### **Paper: CC - 13**

#### **(Developmental Biology)**

**Full Marks: 40**

**Time: 2 Hrs.**

*The figures in the right hand margin indicate full marks.*

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

#### **Group - A**

- 1.** Answer any *five* questions of the following:  $2 \times 5 = 10$
- a)** What do you mean by competence?
  - b)** State the importance of cell junction.
  - c)** How is the pattern of cleavage formed?
  - d)** What is meroistic oogenesis?
  - e)** Is vitamin-A teratogenic? – Justify your answer.
  - f)** What happens during mid-blastula transition?
  - g)** How does ZIFT differ from GIFT?
  - h)** What happens in ovarian hyperstimulation syndrome?

#### **Group - B**

- 2.** Answer any *two* questions of the following:  $5 \times 2 = 10$
- a)** What are cytoplasmic bridges? Mark out the process of spermiogenesis with suitable diagrams.  $1+4$
  - b)** What is regeneration blastema? Shortly describe the proliferation of blastema cells in the time regeneration of amphibian limb.  $1+4$
  - c)** What is *in vitro* fertilization? Describe the different stages of *in vitro* fertilization.  $1+4$
  - d)** Describe any one therapeutic application of embryonic stem (ES) cells.  $5$

### **Group - C**

3. Answer any **two** questions of the following:  $10 \times 2 = 20$
- a) Delineate the development of eye in vertebrate with diagrams. Mention the major inductive events during eye development. 7+3
  - b) Define placenta. With examples and sketches classify the placenta in mammals in relation to intimacy between foetal and maternal tissue. Add a brief note on the salient functions of placenta. 1+6+3
  - c) Draw and label the extraembryonic membranes in birds. Mention their functions. 6+4
  - d) Give a brief account of slow block to polyspermy in mammal with a suitable diagram. 5+5
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