

B.Sc. 6th 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: 2×5=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 meristic 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: 5×2=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: 10×2=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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