

**B.Sc. 6th Semester (Honours) Examination, 2023 (CBCS)**

**Subject : Zoology**

**Course : CC-XIII**

**(Developmental Biology)**

**Time: 2 Hours**

**Full Marks: 40**

*The figures in the margin indicate full marks.*

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

**Group – A**

1. Answer *any five* questions of the following: 2×5=10
- (a) What is follicular atresia?
  - (b) Where does the allantois derive from?
  - (c) What do you mean by placental barrier?
  - (d) State the source and function of 'uterine milk'.
  - (e) What is epimorphic regeneration?
  - (f) Write the significance of sertoli-sertoli junctional complex.
  - (g) Mention basic steps involved in the process of '*in-vitro*' fertilization.
  - (h) During which stage of foetal development are teratogens most harmful?

**Group – B**

2. Answer *any two* of the following questions: 5×2=10
- (a) Give a brief account of different types of eggs in accordance to distribution of yolk with examples for each. 5
  - (b) What is blastodisc? Represent the formation of primitive streak in chick with proper diagram. 1+4
  - (c) What is the relationship between organizer and competence? Discuss briefly the role of organizer in embryonic development with suitable example. 2+3
  - (d) What is amniocentesis? Does it help to detect genders? Mention the limitations of amniocentesis. 2+1+2

**Group – C**

3. Answer *any two* of the following questions: 10×2=20
- (a) Discuss briefly primary neurulation and secondary neurulation during the development of brain in vertebrates with proper diagram. State the role of N-cadherin in brain development. 8+2

- (b) Distinguish between A-type and B-type spermatogonia. Describe the process of spermatogenesis with diagrams. Add a brief note on the role of hormones in regulation of spermatogenesis. 2+6+2
- (c) Define stem cell. Differentiate between embryonic and adult stem cells. Explain the possibilities of stem cell therapy in treatment of diseases. Add a brief note on stem cell potency. 1+2+4+3
- (d) Write notes on: 2½×4=10
- (i) Acrosomal reaction
  - (ii) Chorio-allantoic placenta
  - (iii) Fertilization cone
  - (iv) Capacitation
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