

**U.G. 6th Semester Examination - 2022**

**ZOOLOGY**

**[HONOURS]**

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

Full Marks : 40

Time : 2½ 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** questions: 2×5=10
  - a) What type of cleavage occurs in fishes and mammals?
  - b) Mention the role of protein factors in lens formation.
  - c) What is meant by morphogenetic movement?
  - d) How fate maps are prepared?
  - e) What problems arise due to polyspermy?
  - f) Name some infectious organisms that act as teratogens.
  - g) What stem cell based treatments exist?
  - h) Enumerate the functions of placenta.
  
2. Answer any **two** questions: 5×2=10
  - a) What are embryonic stem cells? How they differ from adult stem cells? What are the sources of ESCs? 1+2+2
  - b) Describe the phases of acrosome biogenesis in mammals with suitable diagrams.
  - c) How mesoderm is formed in triploblastic organisms? Which tissues, organs and organ systems are produced from this germ layer? 2+3
  - d) How optic vesicle and optic cups are formed in chick?
  
3. Answer any **two** questions: 10×2=20
  - a) Compare external and internal fertilization. How cortical granules are involved in blocking polyspermy? 5+5
  - b) Explain the following terms in relation to embryonic cleavage – cleavage furrow, morula, blastula, blastomeres and mosaic cleavage. Describe the roles of genes and factors in regeneration. 5+5
  - c) Describe the structure of placenta. What are the histological types of placenta? 5+5
  - d) What is IVF? Why IVF is done? Describe the steps involved in IVF. 1+4+5

[Turn over]