

U.G. 6th Semester Examination - 2021

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
- How fast block prevents polyspermy?
 - What are cleavage plane and cleavage furrow?
 - Distinguish between haemo-chorial and haemo-endothelial placenta.
 - Compare microlecithal and macrolecithal eggs.
 - Mention the role of polar bodies in mammalian oogenesis.
 - Why frog blastula is called amphiblastula?
 - What are competence and morphogen gradients?
 - Mention the role of epididymis in sperm maturation.
2. Answer any **two** questions : 5×2=10
- What is sperm capacitation? Why and where does it occur? 1+4

- Compare reparative and restorative regeneration. How epimorphosis differs from morphallaxis? 1+4
 - Draw and describe the structure of a mammalian sperm.
 - How optic vesicle induces lens formation in amphibians?
3. Answer any **two** questions : 10×2=20
- How the enzymes of cortical granules help to prevent polyspermy in Sea urchins? What is meiotic prophase arrest and how is it reinitiated in mammals? 4+(2+4)
 - What are the functions of amnion and chorion in birds? Describe the events of apposition and adhesion during implantation in human. How laminin and plasmin interacts in desidual cell transformation? 4+4+2
 - Write briefly about any four teratogenic agents. What's are the steps of IVF? Mention two properties of ESCs. What is the significance of these stem cells? 4+3+1+2
 - Classify placenta depending on the distribution of villi on chorion. Write short note on "fate map". What is the fate of mesoderm? 5+3+2