

**PART-I**  
**ZOOLOGY HONOURS**  
**PAPER II UNIT I**  
**FULL MARKS-50**  
**TIME-2HRS**

*Answer question **no.1** and **any four** from the rest*

1. Answer any **five** questions 2x5
- a) Distinguish between invagination and epiboly.
  - b) State the role of sertoli cells in spermatogenesis.
  - c) Differentiate between meroblastic and holoblastic cleavage.
  - d) What is primitive streak?
  - e) What is Gray Crescent?
  - f) What is GIFT?
  - g) What is Koller's sickle?
2. What is acrosome reaction? Distinguish between cytotrophoblast and syncytiotrophoblast. Give an account of growth phase of oogenesis. 3+2+5
3. What is sperm capacitation? Describe spermiogenesis with the help of proper diagram. State the characteristics of embryonic stem cells. 2+6+2
4. Describe the process of development of eye in chick embryo with diagram. What is heteroplastic transplantation? 6+4
5. Distinguish between fast block and slow block to polyspermy. What is polarity of egg? What is the significance of yolk in cleavage? 4+2+4
6. What is a totipotent cell? Describe the egg membranes in chick with proper diagram. State the composition of yolk. 2+6+2
7. Describe the structural components of a human placenta with diagram. What is resact? State it's function. 6+2+2
8. What is fate map? Draw and describe the fate map of chick blastula. Discuss the function of dorsal lip of blastopore. 2+5+3
9. Write short notes on **any two** : 5x2
- a. Cryopreservation
  - b. Types of placenta
  - c. Fertilization in sea urchin
  - d. IVF

-----X-----

