

Reg. No

Name

18P235

M Sc DEGREE END SEMESTER EXAMINATION - APRIL 2018
SEMESTER 2 : ZOOLOGY
COURSE : 16P2ZOOT07 ; DEVELOPMENTAL BIOLOGY
(Common for Regular - 2017 Admission & Supplementary - 2016 Admission)

Time : Three Hours

Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. Explain the term capacitation.
2. What is mid – blastula transition?
3. Brief the significance of zona pellucida
4. Elaborate the importance of implanataion.
5. What is embryonic induction?
6. Define paracrine factors
7. How Nieuwkoop center important in embryonic development?
8. What is meant by Bicoid gradient?
9. Define Metamorphosis.
10. Blastemma in regeneration
11. Comment on alcohol use during pregnancy and malformations.
12. Differentiate embryonic stem cells and adult stem cells

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Comment on the significance of blastula stage.
14. Discuss the significance of capacitation in fertilization.
15. Briefly explain the germ cell determination in insects.
16. Comment on the mechanism to prevent polyspermy in fertilization.
17. Provide experimental evidence for the existence of Spemann's organizer in an early vertebrate embryo.
18. Elaborate the role of dorsal lip of blastopore in vertebrate development.
19. Explain the working of morphagen gradients in the development of a fly.
20. Comment on the advantages of *C. elegance* as a model organism.
21. Explain different types of insect metamorphosis with examples.
22. Explain lens regeneration in Amphibia.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. How Spemann reached in the conclusion that an organizer is working in the early development of a vertebrate?
24. Hormonal control of metamorphosis in Amphibia

26. What are stem cells? Explain applications of stem cell research. Comment on the ethical issues related to stem cell research.

(12 x 2 = 24)