

M. Sc DEGREE END SEMESTER EXAMINATION - JULY 2021**SEMESTER 2 : ZOOLOGY****COURSE : 16P2ZOOT07 : DEVELOPMENTAL BIOLOGY***(For Regular - 2020 Admission and Supplementary - 2019/2018/2017/2016 Admissions)*

Time : Three Hours

Max. Marks: 75

PART A**Answer any 8 (2 marks each)**

1. Elaborate the importance of implanataion.
2. Brief on the biochemical changes occurring in acrosome reaction.
3. Mention the unique features of mammalian cleavage.
4. Comment on Goosecoid proein
5. Define BMPs
6. Explain Homeotic selector genes
7. Explain Nanos gradient
8. Describe Holometabolus metamorphosis.
9. Significance of blastemma formation in regeneration.
10. Mention the role of Vitamin A as a teratogen.
11. What is ZIFT?
12. Write on Transgenic stem cells.

(2 x 8 = 16)**PART B****Answer any 7 (5 marks each)**

13. Discuss the significance of capacitation in fertilization.
14. Brief on germ cell determination and germ cell migration in mammals.
15. Describe the biochemical processes involved in egg activation.
16. Specify the significance of transplantation experiments in the vertebrate development.
17. What is Nieuwkoop centre? Analyze the molecular mechanism of NC and organizer
18. Evaluate the advantages of *C. elegance* as a model organism.
19. Describe the process of morpholatic regeneration in hydra.
20. Briefly describe compensatory regeneration in mammalian liver.
21. Describe various types of female infertility in humans.
22. Write on different types of stem cells.

(5 x 7 = 35)**PART C****Answer any 2 (12 marks each)**

23. Explain the biochemical mechanisms to inhibit polyspermy. Add note on egg activation.
24. Reflect on paracrine inducer molecules associated with early embryonic development in vertebrates.
25. Elucidate the significance of *C.elegans* in developepmental studies?
26. Write on the history and prospects of Cloning experiment. Critically comment on the ethical issues associated with cloning.

(12 x 2 = 24)