

Reg. No .....

Name .....

19P2035

**MSc DEGREE END SEMESTER EXAMINATION - MARCH/APRIL 2019**

**SEMESTER 2 : ZOOLOGY**

**COURSE : 16P2ZOOT07 : DEVELOPMENTAL BIOLOGY**

*(For Regular – 2018 Admission and Supplementary – 2017/2016 Admissions)*

Time : Three Hours

Max. Marks: 75

**Section A**

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

1. Define fertilization.
2. Explain the term capacitation.
3. Elaborate the importance of implanataion.
4. Brief on the biochemical changes occurring in acrosome reaction.
5. Define justacrine factors
6. Explain Inductive cascade.
7. Briefly explain Mesoderm signaling.
8. What is meant by Bicoid gradient?
9. What is ecdysis?
10. Explain epimorphosis type regeneration.
11. Differentiate autophene and allophene.
12. Write on Transgenic stem cells.

**(2 x 8 = 16)**

**Section B**

**Answer any 7 (5 marks each)**

13. Write briefly on the structure of typical mammalian egg.
14. Explain the process of spermiogenesis.
15. Explain how species specificity is maintained in fertilization.
16. Comment on germ cell migration in mammals.
17. Discuss the role of egg cortex in development.
18. Explain with examples, the role of transcription factors in early development of vertebrates.
19. Explain the working of morphagen gradients in the development of a fly.
20. Discuss the role of P – granules in the development of *C. elegance*.

21. How imaginal discs important in insect metamorphosis?
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
25. Define Infertility. Discuss the causes of infertility in Human beings.
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)**