Reg. No ....   Name ....

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

Time : Three Hours   Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. Brief on the mechanism of gastrulation.
2. Differentiate between spermatogenesis and spermiogenesis?
3. What are the biochemical processes involved in capacitation?
4. Smad pathway
5. Notch signaling
6. Brief note on polarity proteins.
7. Define eutely with example.
8. Write on the role of Corpora Allata in insects.
9. Comment on the significance of regeneration in animals.
10. Mention a few pathogens involved in foetal malformations
11. Define infertility.
12. Elaborate therapeutic cloning.

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Narrate the changes occurring in a fertilized egg until implantation.
14. Briefly explain the germ cell determination in insects.
15. Comment on the mechanism to prevent polyspermy in fertilization.
16. Define paracrine factors. Describe any three paracrine factors important in embryonic development.
17. Provide experimental evidence for the conditional & autonomous development in vertebrates
18. Discuss the role of P – granules in the development of *C. elegance*.
19. How imaginal discs important in insect metamorphosis?
20. Explain lens regeneration in Amphibia.
21. Explain the process of IVF.
22. Write on different types of embryonic stem cells.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. Explain the significance of mid- blastula transition. Add notes on molecular basis of gastrulation.

24. How Spemann reached in the conclusion that an organizer is working in the early development of a vertebrate?

25. Discuss the development and axis formation in *C. elegance.* Add notes on cytoplasmic factors in the development.

26. Define Infertility. Discuss the causes of infertility in Human beings.

(12 x 2 = 24)

Sacred Heart College (Autonomous) Thevara