P230

Reg. No: ……. Name : ……

M SC DEGREE END SEMESTER EXAMINATION MAY - 2015

M SC ZOOLOGY SEMESTER 2

COURSE: P2ZOOT07 - DEVELOPMENTAL BIOLOGY

Time: 3 Hours Max. Marks: 75

PART A

(Answer any **8** questions. Each carries **2** marks)

1. Write notes on cell determination and cell differentiation
2. What is genomic equivalence?
3. What do you mean by metaplasia?
4. What are Leydig cells? .Mention their functions
5. Comment on gap genes
6. What is meant by midblastula transition?
7. What is syncytial blastoderm ?
8. Briefly describe Bicoid gradient
9. Explain how polyspermy is prevented in animals.
10. What is capacitation?
11. What are teratogens? .Give examples
12. Write note on Dosage compensation (8 x 2 = 16)

PART B

(Answer any **7** questions. Each carries **5** marks)

13. Explain the molecular basis of mesoderm induction
14. Mention the major causes of human infertility
15. Explain the phenotype of torso gene mutant Drosophila and its implication
16. Describe the role of thyroid gland in amphibian metamorphosis
17. What is parthenogenesis? Explain different types
18. Explain morphogen gradient in development of fly
19. Describe the various physic-chemical and synthetic changes of fertilization

20. What are stem cells? Explain their application in therapeutic field
21. Describe the process of oogenesis
22. Briefly explain the technique of mammalian cloning (5 x 7 = 35)

PART C

(Answer any **2** questions. Each carries **12** marks)

23. Write an essay on various types of morphogenetic movements during gastrulation
24. Explain cleavage and axis formation in *Caenorhabditis elegans*
25. Write an essay on paracrine factors involved in signal transduction
26. Explain the process of regenerations in animals (12 x 2 = 24)