

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2005 – 2006 & thereafter)**

**SUBJECT CODE: ZL/MC/DB64**

**B. Sc. DEGREE EXAMINATION APRIL 2010**  
**BRANCH VI.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**SIXTH SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : DEVELOPMENTAL BIOLOGY**

**TIME : 3 HOURS** **MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS :** **(10 X 3 = 30)**

1. Enumerate the functions of egg membranes.
2. Comment on the different types of regeneration.
3. Draw a neat labeled diagram of blastocyst.
4. List down the inductors involved in the development of brain.
5. Define parthenogenesis. Name the vertebrate which reproduces exclusively by parthenogenesis.
6. Bring out the significance of primitive streak
7. What are the hormones controlling menstrual cycle?
8. State the theory of germplasm.
9. Differentiate polarity from symmetry
10. Which ART might be of help in the following cases?
  - a. A woman with blocked fallopian tubes
  - b. A young girl must undergo abdominal radiation to treat ovarian cancer, but wishes to have a child in the future.
  - c. A woman who is born without a uterus, but produces healthy oocytes.

**SECTION – B****ANSWER ANY FIVE QUESTIONS :****(5 X 6 = 30)**

11. Explain why the spermatids though being haploid are not capable of functioning as male gametes?
12. Describe the placenta of man. Add a note on its functions.
13. Explain how the lens placode differentiates into the refracting body.
14. Discuss the pattern of cleavage followed by macrolecithal and highly telolecithal eggs.
15. Give a detailed account of the physico – chemical aspects of fertilization.
16. Bring out the significance of nucleo cytoplasmic interactions.
17. What is a fate map? How is it constructed?

**SECTION – C****ANSWER ANY TWO QUESTIONS :****(2 X 20 = 40)**

18. Discuss the role of hormones on insect metamorphosis
19. Compare the process of gastrulation in frog and chick
20. Trace the origin and development of heart in vertebrates
21. Explain the basic steps in an IVF treatment cycle. Add a note the ethical issues introduced by ART.

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