STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2019 – 2020 & thereafter)

SUBJECT CODE: 19ZL/MC/DB23

B. Sc. DEGREE EXAMINATION APRIL 2022
BRANCH VI.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : DEVELOPMENTAL BIOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

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

1. Mention the different types of metamorphosis with examples.
2. What is autoradiography?
3. List any three functions of placenta.
4. Draw a neat, labelled diagram of Graafian Follicle.
5. Differentiate between blastula and gastrula.
6. Comment on holoblastic unequal cleavage.
7. Define cell differentiation and list its various types.
8. What are glial cells? Mention their functions.
9. Expand: (a) ICSI (b) ZIFT c)TET
10. Define altruistic surrogacy. List any two ethical issues associated with it.

SECTION – B

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

11. Comment on

    (a) Theory of Preformation (b) Theory of Recapitulation (c) Theory of Pangenesis

12. Illustrate and explain Spermiogenesis.
13. Explain Spemann – Mangold experiment highlighting the effect of organizer in the process of embryonic development.
14. Trace the development of brain in frog.
15. Describe the process of *in vitro* fertilization and add a note on the ethical issues.
16. Discuss the nuclear transfer experiments.
17. Construct a timeline and explain the process of regeneration of salamander limb with suitable diagrams.

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SECTION – C

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

18. Define metamorphosis and mention its types. Give a detailed account on amphibian metamorphosis along with hormonal control.
19. Give an account on the physico – chemical aspects of fertilization. Add a note on any three theories.
20. Summarise the general morphogenetic movements in chordate embryos and explain the process of gastrulation in frog.
21. Describe the development and structure of eye in frog.

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