

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI - 600 086
(For candidates admitted during the academic year 2025 – 2026)

B. Sc. DEGREE EXAMINATION, APRIL 2026
BRANCH V.I.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY
SECOND SEMESTER

COURSE : CORE
PAPER : DEVELOPMENTAL BIOLOGY
SUBJECT CODE : 25ZL/MC/DB23
TIME : 3 HOURS

MAX. MARKS: 100

Q. No.	SECTION A	CO	KL
	Answer all questions (5 x 2 = 10 marks)		
1.	Recall the theory of Preformation.	CO1	K1
2.	List any two methods of construction of fate maps.	CO1	K1
3.	Define cell commitment.	CO1	K1
4.	List any two applications of regeneration.	CO1	K1
5.	What is induced ovulation?	CO1	K1
Q. No.	SECTION B	CO	KL
	Answer all questions (5 x 3 = 15 marks)		
6.	Give an example for the following types of eggs: a. Cleidoic egg b. Telolecithal egg c. Macrolecithal egg	CO2	K2
7.	Distinguish between Holoblastic and Meroblastic cleavage with examples.	CO2	K2
8.	Highlight any three major steps in the organogenesis of the heart in frog.	CO2	K2
9.	Differentiate totipotency from pluripotency.	CO2	K2
10.	How does GIFT differ from ZIFT? Discuss briefly.	CO2	K2
Q. No.	SECTION C	CO	KL
	Answer any two questions (2 x 10 = 20 marks)		
11.	Describe the development of the brain in frog.	CO3	K3
12.	Highlight the impact of teratogenic agents on embryonic development.	CO3	K3
13.	Illustrate and explain the different types of morphogenetic movements in chordate embryos.	CO3	K3
Q. No.	SECTION D	CO	KL
	Answer any two questions (2 x 20 = 40 marks)		
14.	Explain in detail the physicochemical aspects of the process of fertilisation.	CO4	K4
15.	Give a detailed account on the different types and functions of Placenta.	CO4	K4
16.	Compare and contrast metamorphosis in insects and amphibians.	CO4	K4
Q. No.	SECTION E	CO	KL
	Answer any three questions (3 x 5 = 15 marks)		
17.	Discuss the various ethical issues associated with Stem cell research.	CO5	K5
18.	Highlight the major differences between mosaic and regulative modes of embryonic development.	CO5	K5
19.	Assess the role of endoderm in the development of the digestive tract of the frog.	CO5	K5
20.	Examine the various causes of infertility in humans.	CO5	K5
