# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **ADVANCED ZOOLOGY AND BIOTECHNOLOGY**

THIRD SEMESTER – **APRIL 2022**

**UAZ 3503 – DEVELOPMENTAL BIOLOGY**

Date: 23-06-2022 Dept. No. Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

## PART A

**Answer all the questions** **(10×2=20 Marks)**

1. Differentiate between autonomous and conditional cell specification.
2. Explain any two types of cellular morphogenetic movements seen in developing embryos.
3. Describe the formation of eye lens in vertebrates.
4. Enlist the different types of stem cells.
5. What is superovulation? How is it induced in humans?
6. Define organizers and inducers.
7. Differentiate between equal and unequal holoblastic cleavage.
8. What are the bendings and curvatures seen in vertebrate brain development?
9. What is a regeneration blastema?
10. Explain the developmental abnormality arising due to Zika virus infection.

## PART B

**Answer any FOUR questions** **(4×10=40 Marks)**

11. Describe the process of gastrulation in frog.
12. Explain the developmental abnormalities arising due to various environmental agents.
13. Write notes on the development of heart in vertebrates.
14. Discuss the process of formation of yolk sac and amnion in chick embryo.
15. Give an account of cell specification during embryonic development.
16. Explain the role of stem cells in regenerative medicine giving suitable examples.

## PART C

**Answer any TWO questions** **(2×20=20 Marks)**

17. Write a detailed note on the process of gametogenesis.
18. Describe in detail the procedure for *in vitro* fertilization in humans.
19. Define the different types of regeneration with examples and give a detailed explanation of the process of limb regeneration in salamander.
20. Discuss in detail the process of fertilization of sea urchin eggs.

#########