4. What is polyspermy? Highlight on the mechanism of its prevention. [2+12=14]

5. What do you mean by gastrulation? Give a comparative account of the process of gastrulation in amphibians and mammals. [2+12=14]

OR

6. Write notes on the following: [2x7=14]
   (a) Development of gonads
   (b) Twins

7. Describe the roles of segmentation and homeotic genes in regulating drosophila segmentation and identity. [14]

OR

8. Write notes on the following: [2x7=14]
   (a) Dorsoventral polarity
   (b) Pattern formation in *Dictyostellium*

9. What is apoptosis? Describe the role of apoptosis in development. Add a note on the mechanisms of apoptosis involving specific pathway. [2+5+7=14]

OR

10. Write notes on the following: [2x7=14]
    (a) Ageing and senescence
    (b) Insulin pathway control of ageing

★★★

PG (CBCS) EVEN SEMESTER EXAMINATION, 2023

LIFE SCIENCE & BIOINFORMATICS

4th Semester

Course No. : LSCC - 403(Z)

(Developmental Biology)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer all questions)

1. What is commitment? Describe the modes of cell type specifications and their characteristics. [2+12=14]

OR

2. Write notes on the following: [2x7=14]
   (a) Cytoplasmic determinants
   (b) Cell potency

3. Write notes on the following: [2x7=14]
   (a) Differences between male and female gametogenesis with respect to meiotic cell division
   (b) Sperm attraction at a distance

OR