PG Even Semester (CBCS) Exam., May—2017

LIFE SCIENCE AND BIOINFORMATICS

(4th Semester)

Course No. : LS–403 (Z) (C)

(Developmental Biology)

Full Marks : 75
Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Write short notes on the following : 7½+7½=15

(a) Spermatogenesis

(b) Acrosomal reaction

OR

2. Describe the sequence of events that occur in the process of fertilization. 15

3. What is cleavage? With suitable diagrams, describe the various types of cleavage. Write a note on the different types of eggs with reference to their yolk. 15

OR

4. Explain the process of formation of ectoderm, mesoderm and endoderm. 15

5. Give a detailed note on the genetic regulation of anterior and posterior polarity during early development of *Drosophila*. 15

OR

6. Write notes on the following : 7½+7½=15

(a) Hox genes

(b) Segmentation identity in *Drosophila*

7. Write a detailed note on the sex determination in *Drosophila*. 15

OR

8. What is regeneration? With suitable examples, explain the different types of regeneration. 7½+7½=15

9. Write notes on the following : 7½+7½=15

(a) Application of stem cells for human welfare

(b) Hematopoietic stem cells

OR

10. Define a stem cell. How do embryonic stem cells differentiate? Give a schematic diagram. 15

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