

**S. Y. B. SC. (BIOTECHNOLOGY) SEM – IV (CBCS - 2015  
COURSE) : SUMMER - 2018  
SUBJECT : DEVELOPMENTAL BIOLOGY**

Day : **Thursday**  
Date : **12/04/2018**

**S-2018-1056**

Time : **10.00 am to 01.00 pm**  
Max. Marks : 60

**N.B.**

- 1) Q.1 and Q.5 are **COMPULSORY**. Answer any **TWO** questions from Section – I and Section – II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.
- 4) Draw neat and labeled diagrams wherever necessary.

**SECTION – I**

- Q.1** Attempt any **FIVE** of the following: **(10)**
- a) What is autonomous specification?
  - b) Define cleavage.
  - c) Define gametogenesis
  - d) What are progenitor cells?
  - e) What are transgenic animals?
  - f) Define cell lineages.
- Q.2** Attempt the following questions: **(10)**
- a) Explain the stages of prophase I of meiosis.
  - b) Describe the structure of telolecithal egg with suitable example.
- Q.3** Attempt the following questions: **(10)**
- a) Describe the structure of blastula in chick.
  - b) What is cortical reaction? Describe the formation of fertilization membrane.
- Q.4** Write short notes on any **TWO** of the following; **(10)**
- a) Define cancer. Describe teratogenesis in animals.
  - b) What are adult stem cells? Add a note on their applications.
  - c) Describe the role of genes in pattern formation.

**SECTION – II**

- Q.5** Attempt any **TWO** of the following: **(10)**
- a) Describe the cytoplasmic changes during formation of mature oocyte.
  - b) Describe the structure of gastrula in frog.
  - c) Explain activation of ovum during the process of fertilization.
- Q.6** Attempt the following questions: **(10)**
- a) What is placenta? Describe its functions during pregnancy.
  - b) Describe cell lineages in plants and animals.
- Q.7** Attempt the following questions; **(10)**
- a) Describe the structure of human egg.
  - b) What is mitosis? Sketch and label different phases of mitosis.
- Q.8** Attempt the following questions: **(10)**
- a) Describe the processes of apoptosis and ageing.
  - b) Explain the concepts of differentiation and dedifferentiation.
- \* \* \*