

**S. Y. B. SC. (BIOTECHNOLOGY) SEM – IV (CBCS - 2015
COURSE) : WINTER - 2017
SUBJECT : DEVELOPMENTAL BIOLOGY**

Day : Monday
Date 30/10/2017

W-2017-0945

Time : 02.00 PM TO 05.00 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 differentiation?
 - b) Define holoblastic cleavage.
 - c) Define oogenesis.
 - d) What are stem cells?
 - e) Define ageing.
 - f) What is transgenic technology?
- Q.2** Attempt the following questions: **(10)**
- a) Differentiate between mitosis and meiosis.
 - b) Describe any two types of eggs.
- Q.3** Attempt the following questions: **(10)**
- a) Describe the structure of blastula in frog.
 - b) Describe in detail the process of amphimixis.
- Q.4** Write short notes on any **TWO** of the following: **(10)**
- a) Describe cloning in mammals.
 - b) Define embryonic stem cells and add a note on their application.
 - c) Explain the role of genes in patterning and development.

SECTION – II

- Q.5** Attempt any **TWO** of the following: **(10)**
- a) Explain the process of spermatogenesis.
 - b) Differentiate between gastrula of frog and gastrula of chick.
 - c) Define fertilization and add a note on its significance.
- Q.6** Attempt the following questions: **(10)**
- a) Describe different types of fetal membranes in chick.
 - b) Differentiate between apoptosis and necrosis.
- Q.7** Attempt the following questions; **(10)**
- a) Describe the structure of frog egg.
 - b) Sketch and label different phases of prophase-I of meiosis I.
- Q.8** Attempt the following questions: **(10)**
- a) Explain teratogenesis in animals.
 - b) Describe the concepts of competence and determination.
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