

**S. Y. B. Sc. (Biotechnology) SEM – IV (CBCS - 2015 COURSE) :
WINTER - 2018**

SUBJECT: DEVELOPMENTAL BIOLOGY

Day: Thursday
Date: 01/11/2018

W-2018-1180

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

N.B.:

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

SECTION - I

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) Explain the term cleavage
- b) What is significance of blastulation?
- c) Sketch and label blastocyst in mammals
- d) What is coeloblastula?
- e) What is significance of yolk during gastrulation?
- f) Explain in brief cleidoic egg

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) Explain the stages of meiosis –II
- b) Describe the structure of mature spermatozoa

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Describe in detail the process of amphimixis with their significance
- b) What is invagination? Describe movements of the cell and physiology of invagination

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Describe the cleavage pattern on the basis of quantity and distribution of yolk
- b) What is gastrula? Discuss how three germinal layers are formed

SECTION - II

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is chorion?
- b) Explain the term cleavage
- c) What are stem cells?
- d) Enlist diseases that stem cells are used to cure
- e) What is pluripotent cell?
- f) What is regulative specification?

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) What is blastula? Describe the blastula of frog
- b) What is differentiation? How different factors are affected in differentiation

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) What is implantation? Discuss the implantation process in human with its importance
- b) Explain adult stem cells and a note on their application

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Explain the process of oogenesis with its significance
- b) Explain in brief embryonic and adult stem cells
