

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

**SUMMER - 2019**

**SUBJECT:- DEVELOPMENTAL BIOLOGY**

Day: Friday

Date: 12/04/2019

**S-2019-1382**

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 **SAME** answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

**SECTION - 01**

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

- a) Write in brief salient features of cleavage.
- b) What is bilateral cleavage?
- c) Explain the term embryology.
- d) Explain the term spiral cleavage.
- e) Explain in brief cleidoc egg.
- f) Define telolecithal and megalecithal egg.

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

- a) Explain process of spermatogenesis. Add note on its significance.
- b) Describe in brief 'M' phase of cell cycle.

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

- a) Describe the structure of human egg.
- b) Explain the steps of gastrulation in frog.

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

- a) Define fertilization and add a note on its significance
- b) What is gastrula? Discuss how three germinal layers are formed

**SECTION - 02**

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

- a) What is holoblastic cleavage?
- b) Write in brief about meroblastic cleavage.
- c) What is transgenic technology?
- d) Write properties of stem cells?
- e) What is pleuropotent cell?
- f) What are embryonic stem cells?

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) Describe in brief the structure of human uterus. Add note on its properties
- 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) What are progenitor cells? How they can differ from stem cells
- b) Explain in brief differential potentials of stem cells and add note on its properties.

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