

BACHELOR OF SCIENCE (BIOTECHNOLOGY) (CBCS - 2015 COURSE)
S.Y.B.Sc. (Biotech) Sem-IV : WINTER :- 2021
SUBJECT: DEVELOPMENTAL BIOLOGY

Day : Saturday
Date 29-01-2022

W-13244-2021

Time : 10:00 AM-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 - 01

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

- a) Write in brief cleavage laws.
- b) Sketch and label blastocyst in mammals.
- c) What is coeloblastula?
- d) What are progenitor cells?
- e) What is significance of gastrulation?
- f) Explain in brief blastopore in frog.

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

- a) Explain the stages of meiosis –II.
- b) What is mitosis? Sketch and label different phases of mitosis.

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

- a) With labeled diagram describe the structure of frog egg.
- b) Explain the process of gastrulation in chick and add note on three germinal layers.

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

- a) Describe activation of sperm and ovum during process of fertilization.
- b) Discuss in brief development of embryo in frog and chick.

SECTION - 02

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

- a) Explain the term cleavage.
- b) Enlist planes of cleavages.
- c) What is transgenic animals?
- d) What are stem cells?
- e) What are totipotent cells?
- f) What is cancer?

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

- a) What is placenta? Explain various functions of placenta.
- b) Describe cell lineages in plants and animals.

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

- a) What is blastocyst? Explain the development of embryoblast and trophoblast cells during implantation.
- b) Explain in brief embryonic and adult stem cells.

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

- a) Explain the role of genes in patterning and development.
- b) Describe properties and functions of progenitor cells.
