

SEAT No. _____

(60)

SARDAR PATEL UNIVERSITY
M. Sc. -Integrated Biotechnology – Fourth Semester Examination
Wednesday, 19th April, 2017
Time: 02:00 pm to 05:00 pm

PS04CIGB04: DEVELOPMENTAL BIOLOGY

Note: (i) Figures to the right indicate marks.
(ii) Draw neat and labeled diagram, wherever necessary.

Total Marks - 70
[08]

Q-1 Choose the correct option and answer.

- (1) Which one of the following is advanced?
 - a. Tap root system b. Fibrous root system c. Prop root system d. None of these
- (2) Name of the telome which ends with sporangia is called _____.
 - a. Sterile telome b. Fertile telome c. Telome truss d. All of these
- (3) Microsporangium in Angiosperm produces _____.
 - a. Ovules b. Pollen grains c. Megaspores d. All of these
- (4) Formation of fruit without fertilization is called _____.
 - a. Parthenocarpy b. Apomixis c. Polyembryony d. All of these
- (5) Number of polar bodies formed at the end of Oogenesis in mammals is _____.
 - a. One b. Two c. Three d. Four
- (6) The structure responsible for the formation of tail in sperm is _____.
 - a. Mitochondria b. Ribosome c. Centrioles d. None of these
- (7) Outward movement of cells during gastrulation is called _____.
 - a. Epiboly b. Blastulation c. Emboly d. Invagination
- (8) Rapid mitotic cell division after zygote formation is called _____.
 - a. Fission b. Budding c. Parthenogenesis d. Cleavage.

Q-2 Answer the following. (Any seven)

[14]

- (1) Write the characters of dicot plants.
- (2) Justify 'compound leaf is advanced than simple leaf'.
- (3) Write a note on telome truss.
- (4) What is double fertilization? Give example.
- (5) Define apomixis. Write the importance.
- (6) Draw and label the structure of sperm.
- (7) Give a note on Oogenesis in insects.
- (8) Define the terms morula and blastula.
- (9) Draw and label: Blastula stage in frog.

- Q-3** (A) With neat and labeled diagram, explain the life cycle of Angiosperms showing alternation of generation. [6]
- (B) Write note on evolution of Angiosperm leaf through Telome theory and add a note on the evolutionary processes. [6]
- OR**
- (B) Enlist various methods to overcome sexual incompatibility? Write any four in detail. [6]
- Q-4** (A) What are haploids? Write a note on haploid production in plants and its importance. [6]
- (B) Define endosperm. Write a note on its types and importance [6]
- OR**
- (B) Describe the structure and development of anther and male gametophyte. [6]
- Q-5** (A) Give a detail account on the types of eggs. [6]
- (B) Define gametogenesis. Explain Oogenesis with suitable diagram in mammals. [6]
- OR**
- (B) Write an essay on artificial parthenogenesis. Add a note on its significance. [6]
- Q-6** (A) Write a note on the types of cleavage with diagram. [6]
- (B) Write an essay on morphogenetic movements in animal development. [6]
- OR**
- (B) Enlist various genetical disorders during development and explain **any two** in detail. [6]
