

(46)  
A-51

**SARDAR PATEL UNIVERSITY**  
**M. Sc. -Integrated Biotechnology – Fourth Semester Examination**  
**Tuesday, 5<sup>th</sup> April, 2016**  
**Time: 10:30 am to 01:30 pm**

**PS04CIGB04: DEVELOPMENTAL BIOLOGY**

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

**Total Marks - 70**

**Q-1 Choose the correct option and answer.**

**[08]**

- (1) Which one of the following is primitive?  
a. Tap root      b. Fibrous root      c. Prop root      d. Stilt root.
- (2) Name of the telome which ends without a 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 seeds without fertilization is called \_\_\_\_\_.  
a. Parthenocarpy      b. Apomixis      c. Polyembryony      d. All of these
- (5) Number of sperms formed at the end of Spermatogenesis is \_\_\_\_\_.  
a. One      b. Two      c. Three      d. Four
- (6) Acrosome is present in \_\_\_\_\_.  
a. Pollen      b. Sperm      c. Ovum      d. Egg
- (7) Inward movement of cells during gastrulation is called \_\_\_\_\_.  
a. Emboly      b. Blastrulation      c. Epiboly      d. Evagination
- (8) Development of an organism without fertilization is called \_\_\_\_\_.  
a. Fission      b. Budding      c. Parthenogenesis      d. Asexual reproduction

**Q-2 Answer the following. (Any seven)**

**[14]**

- (1) Write the characters of dicot plants.
- (2) Justify 'Gamopetalae is advanced than Polypetalae'.
- (3) Write a note on telome truss.
- (4) What is double fertilization?
- (5) Define parthenocarpy. Write the importance.
- (6) Describe vitelline membrane.
- (7) Give the diagrammatic representation of Oogenesis.
- (8) Write a note on emboly?
- (9) What is embryology? Enlist the branches of embryology.

- Q-3 (A) Explain the life cycle of Angiosperms showing alternation of generation with diagram. [6]
- (B) Write note on evolution of Angiosperm leaf through Telome theory and add a note on the evolutionary processes. [6]
- OR**
- (B) What is sexual incompatibility? Write the methods to overcome sexual incompatibility. [6]
- Q-4 (A) Write an essay on haploid production in plants and its importance. [6]
- (B) Give a note on endosperm and its types. [6]
- OR**
- (B) Describe the structure and development of megasporangium and female gametophyte. [6]
- Q-5 (A) Write an essay on parthenogenesis. Add a note on its significance. [6]
- (B) What is gametogenesis? Describe spermeogenesis with suitable diagram. [6]
- OR**
- (B) Briefly explain the types of egg membranes. [6]
- Q-6 (A) What is epiboly? Describe in detail with suitable diagram. [6]
- (B) Write an essay on cleavage with diagram. [6]
- OR**
- (B) What is teratogenesis? Write a note on any two teratogens. [6]

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