

[A-74]

No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY

M. Sc. -Integrated Biotechnology – Fourth Semester Examination

Tuesday, 28th April, 2015

Time: 02:30 pm to 05:30 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 advanced?
a. Tap root b. Fibrous root c. Prop root d. Stilt root.
- (2) Name of the telome which ends with a sporangia is _____.
a. Sterile telome b. Fertile telome c. Telome truss d. All of these
- (3) Megasporangium in Angiosperm produces _____.
a. Microspores b. pollen grains c. Megaspores d. All of these
- (4) Formation of fruits without fertilization is called _____.
a. Parthenocarp b. Apomixis c. Polyembryony d. All of these
- (5) Name the organelle provides energy to the sperm.
a. Endoplasmic reticulum b. Mitochondria c. Golgi bodies d. centrioles.
- (6) Number of egg cells formed at the end of Oogenesis is _____.
a. 01 b. 02 c. 03 d. 04
- (7) In centrolecithal eggs, the usual type of cleavage is _____.
a. Holoblastic b. Superficial c. Spiral d. Meroblastic
- (8) During embryonic development 16 to 32 cells embryo stage is known as _____.
a. Morula b. Blastula c. Periblastula d. Gastula

Q-2 Answer the following. (Any seven)

[14]

- (1) Write the characters of Monocot plants.
- (2) Justify 'Aquatic plants are advanced than Terrestrial plants'.
- (3) Write a note on fertile telome truss.
- (4) Define polyembryony? Enlist the types of polyembryony.
- (5) Give a note on apomixis.
- (6) What is fertilizin – antifertilizin reaction
- (7) Draw and label the structure of sperm.
- (8) Define parthenogenesis. Write the significance
- (9) Write a note on growth and differentiation.

Q-3 (A) Diagrammatically explain the life cycle of Angiosperms showing alternation of generation. [6]

(B) Write an essay on Telome theory and briefly explain the evolutionary processes. [6]

OR

(B) Define sexual incompatibility and its types? Write any four methods to overcome sexual incompatibility. [6]

Q-4 (A) Define endosperm. Give a detail account on types and development. [6]

(B) Write an essay on parthenocarpy and its types. [6]

OR

(B) What are haploids? Write a note on haploid production in plants. [6]

Q-5 (A) Write an essay on the different types of eggs according to the distribution of yolk. [6]

(B) Describe spermatogenesis with suitable diagrams. [6]

OR

(B) Explain the growth phase of Oogenesis in mammals. [6]

Q-6 (A) Give a note on the morphogenetic movements during Gastrulation. [6]

(B) What is cleavage? Explain the patterns of cleavage with suitable diagrams. [6]

OR

(B) What is infertility? Describe in-vitro fertilization (IVF) as an assisted reproductive technique. [6]
