

(10)

SARDAR PATEL UNIVERSITY
M. Sc. Integrated Biotechnology – Second Semester Examination
Thursday, 30th April 2015
Time: 10:30 am to 01:30 pm

PS02CIGB05: CELL BIOLOGY

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

Total Marks - 70

Q-1 Fill in the blanks by choosing appropriate option.

[08]

- (1) The Study of the structure and function of a cell is known as _____.
a. Histology b. Cytology c. Physiology d. All of these.
- (2) Cell theory was proposed by _____.
a. Beadle and Tatum c. Robert Hooke
b. Schleiden and Schwann d. Leeuwenhoek
- (3) Thylakoids are present in _____.
a. Mitochondria b. Ribosome c. Chloroplast d. Peroxisome
- (4) Which one of the following cell organelle involved in 'Protein Synthesis'.
a. Mitochondria b. Ribosome c. Chloroplast d. Peroxisome
- (5) Protein present in microtubules is _____.
a. Tubulin b. Dentin c. Vimentin d. None of these.
- (6) Nucleus without nuclear membrane is called _____.
a. Nucleolus b. Nucleoplasm c. Protoplasm d. Nucleiod
- (7) Number of daughter cells produced as result of mitosis _____.
a. Two b. Four c. Eight d. Sixteen
- (8) Crossing over occurs in _____.
a. Meiosis b. Mitosis c. Both mitosis & meiosis d. None of these

Q-2 Answer the following. (Any seven)

[14]

- (1) Differentiate plant cell and animal cell.
- (2) Write a note on PPLO with diagram.
- (3) Enlist the different branches of biology in relation to cell biology.
- (4) Write the chemical composition and functions of cell wall.
- (5) Give a note on peroxisomes.
- (6) Write a note on centrioles and basal bodies.
- (7) Enlist the functions of nucleus.
- (8) Write the difference between mitosis and meiosis.
- (9) Write the significance of meiosis.

Q-3 (A) Draw and label the structure of Animal cell. Add a note on its salient features. [6]

(B) Write an essay on plasma membrane models with diagram. [6]

OR

(B) Explain the structure of Bacterial cell with suitable diagram. [6]

Q-4 (A) With diagram explain the structure and functions of Mitochondria. [6]

(B) Write a detailed note on Ribosome. [6]

OR

(B) Draw and explain the structure, types and functions of Golgi complex. [6]

Q-5 (A) Give an explanatory note on the ultra structure of Nucleus. [6]

(B) Write a note on the structure, chemical composition and functions of microtubules. [6]

OR

(B) Give a brief note on microfilaments and intermediate filaments. [6]

Q-6 (A) Draw cell cycle and add a note on the events of interphase of cell cycle. [6]

(B) Write a note on prophase-I of meiosis-I and how it differs from prophase-I of mitosis. [6]

OR

(B) Define mitosis. Explain the stages of mitosis with diagram. [6]
