



MDD-4269 Seat No. _____

B. Sc. (Sem. I) Examination

November / December - 2018

Biotechnology : CCC - 1 CBT - 1 - I

(Introduction to Biotechnology & Cell Biology)

Time : 3 Hours]

[Total Marks : 70

1 Attempt all questions : 1×15=15

(1) Which of the following is a feature found in both prokaryotic and eukaryotic cells ?

- (A) Extensive array of intermediate filaments
- (B) Multiple linear chromosomes in each cell
- (C) Ribosome's that accomplish protein synthesis
- (D) Mitotic spindles that partition chromosomes into the daughter cells.

(2) A single-celled organism named Euglena. The specimen was viewed in

- (A) Light microscope
- (B) Fluorescence
- (C) Transmission electron microscope
- (D) Scanning electron

(3) What makes parts of the endoplasmic reticulum rough ? The presence of

- (A) Budding vesicles
- (B) Proteins in the membrane
- (C) Ribosomes
- (D) Glycosylations

(4) The proteins that make up the electron transport chain in animals are located

- (A) On the outer mitochondria membrane
- (B) On the inner mitochondria membrane
- (C) In the mitochondria matrix
- (D) In the cytoplasm

(5) The stage of mitosis when chromosomes condense to form rod-shaped structures visible under the microscope is called :

- (A) Interphase
- (B) Prophase
- (C) Metaphase
- (D) Anaphase

(6) The cell theory is one of the unifying themes of biology. Which of the following statements would be part of the cell theory ?

- (A) All life is made of cells
- (B) Cells are the smallest units of life.
- (C) Cells come from preexisting cells
- (D) All of the above

(7) You are told that the cells on a microscope slide are plant, animal, or bacterial. You look at them through a microscope and see cell walls and membrane-bound organelles. You conclude that the cells

- (A) are plant cells
- (B) could be either plant or bacterial
- (C) are animal cells
- (D) could be plant animal, or bacterial

- (8) Cells without a membrane-bound nucleus and membrane systems in the cytoplasm are _____ cells.
- (A) Prokaryotic
(B) Eukaryotic
(C) Fungal
(D) Protest
- (9) The cytoskeleton is a system of _____ in _____ cells.
- (A) Proteins - prokaryotic
(B) Proteins - eukaryotic
(C) DNA - prokaryotic
(D) DNA - eukaryotic
- (10) Bacterial slide can be observed under 40x objective lens (False/True ?)
- (11) Unlike animal cells, plant cells have _____ and _____. <https://www.hnguonline.com>
- (A) Chloroplaste.....cell walls.....mitochondria
(B) Centrioles.....cells walls.....glycocalyx
(C) Chloroplasts.....cells walls.....vacuoles
(D) Centrioles.....chloroplasts.....vacuoles
- (12) The transgenic plant flavr savr tomato carries an artificial gene for
- (A) Delay ripening process
(B) Longer shell life
(C) Added flavours
(D) All of these
- (18) Hirudin is obtained from the transgenic plant
- (A) Brassica napus
(B) Hibiscus rosasinesis
(C) Raphanus sativus
(D) Vinca rosea

- (14) Bt Cotton is _____
- (A) Cloned plant
(B) Transgenic plant
(C) Hybrid Plant
(D) Mutated plant
- (15) In forensic science which of the following is used ?
- (A) Bacterial cloning
(B) DNA foot printing
(C) DNA fingerprinting
(D) DNA cloning

- 2 Attempt any five questions : 3×5=15
- (2.1) Explain the application of Plant Biotechnology.
(2.2) What is cell ? Explain Pinocytosis and Phagocytosis.
(2.3) Give the difference between Prokaryotic cell and Eukaryotic Cell.
(2.4) Explain types of Microscopy.
(2.5) Write a note on Prophase and Metaphase in somatic cell.
(2.6) Write a note on Nucleus.
- 3 Attempt any four questions : 5×4=20
- (3.1) Describe Medical biotechnology with examples.
(3.2) Explain Mitochondria with labelled diagram
(3.3) Explain objective and magnification.
(3.4) Describe cell membrane with diagram.
(3.5) Describe chromosome types with diagram.
- 4 Attempt any two questions : 10×2=20
- (4.1) Explain GERL system in cell
(4.2) Describe Prephase I of Meiosis
(4.3) Explain scope and application in biotechnology and examples.