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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 microsocpe

(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-shapped 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 _____.

(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

(13) 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 Prokayotic 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.