



MBE-003-1011014-N

Seat No. _____

B. Sc. (Sem. I) (CBCS) Examination

November / December – 2016

BT-101 : Introduction to Biotechnology & Cell Biology
(New Course)

Faculty Code : 003

Subject Code : 1011014-N

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions : (1) Objective types of questions are compulsory.
(2) Figures on the right indicates the marks of individual questions.

- 1 (a) Objective type questions : 4
- (1) Which scientist contributed in discovering the genetic codes as triplets ?
 - (2) Name few biotechnology companies in world.
 - (3) Vectors are used in _____ technology.
 - (4) Name some r-DNA products used for medicinal purpose.
- (b) Answer in brief (any 1) 2
- (1) Give definitions of Biotechnology
 - (2) Define r-DNA technology.
- (c) Answer in detail : (any 1) 3
- (1) Discuss current status and future of biotechnology in developing world.
 - (2) Give applications of biotechnology in agriculture.
- (d) Write a note on : (any 1) 5
- (1) Explain : Overview of r-DNA technology.
 - (2) Discuss ethical and social issues associated with biotechnology.

- 2 (a) Objective type questions : 4
- (1) _____ experiment was proof of spontaneous generation of organic molecules.
 - (2) Who discovered cells for the first time ?
 - (3) Give the repeating units in the structure of peptidoglycan.
 - (4) What is the refractive index of the glass lens used in microscope ?
- (b) Answer in brief : (any 1) 2
- (1) Define cell and give its basic characteristics.
 - (2) Describe diversity in cell size and shape
- (c) Answer in detail : (any 1) 3
- (1) Give ultra structure of virus.
 - (2) Give ultra structure of prokaryotic cell.
- (d) Write a note on : (any 1) 5
- (1) Give comparative review on the cell structure, chemical composition and organization of plant, animal and prokaryotic cell.
 - (2) Give overview of microscopic techniques.
- 3 (a) Objective type questions : 4
- (1) Who proposed the sandwich model of plasma membrane ?
 - (2) Give examples of plastids.
 - (3) In which cell organelle, the enzymes for oxidative phosphorylation and ATP synthesis are present ?
 - (4) The subunits of prokaryotic ribosomes are _____ and _____.
- (b) Answer in brief : (any 1) 2
- (1) Give the structural components of cell wall.
 - (2) Differentiate between the prokaryotic and eukaryotic ribosomal RNA contents.

- (c) Answer in detail : (any 1) 3
 (1) Explain the structure and function of Golgi bodies.
 (2) Describe the structure and function of : Lysosomes, Glyoxisomes and Peroxisomes
- (d) Write a note on : (any 1) 5
 (1) Explain : Mitochondria and its functions.
 (2) Explain : Chloroplast and its functions.
- 4 (a) Objective type questions : 4
 (1) Meiotic cell division occurs to form _____.
 (2) Which proteins are present in the structure of DNA ?
 (3) Give full forms of Cdk.
 (4) Give examples of giant chromosomes.
- (b) Answer in brief : (any 1) 2
 (1) Give diagrammatic representation of cell cycle.
 (2) Give types of chromosomes on the basis of position of centromere.
- (c) Answer in detail : (any 1) 3
 (1) Explain the difference between mitosis and meiosis in tabular form.
 (2) Explain ultrastructure of chromosomes.
- (d) Write a note on : (any one out of two)
 (1) Give ultrastructure of Nucleus and its functions.
 (2) Explain cell cycle regulation.
- 5 (a) Objective type questions : 4
 (1) Blood cells are formed from _____ stem cells.
 (2) The cancer in which the cancerous cells have the ability to invade surrounding tissues and organs is called _____.
 (3) Plasmodesmata have function in _____.
 (4) Name the skeletal filaments present in eukaryotic cell.

- (b) Answer in brief : (any 1) **2**
- (1) Explain cell locomotion by Falgella
 - (2) Define : stem cells.
- (c) Answer in detail : (any 1) **3**
- (1) Explain types of cell-cell interactions.
 - (2) Describe cytoskeleton and its functions.
- (d) Write a note on : (any 1) **5**
- (1) Give overview of cancer biology.
 - (2) Explain types of stem cells and its applications in biotechnology.
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