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PBM-003-0011010 Seat No. _____

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

November / December - 2018

BT - 101 : Introduction to Biotechnology any Cell Biology

Faculty Code : 003

Subject Code : 0011010

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory.

(2) The right side figure indicates total marks of the question.

(3) Draw the figure wherever necessary.

1 (a) Objective type questions. **4**

(1) The term "biotechnology" was coined by _____.

(2) _____ enzyme is used to cut DNA molecule in rDNA technology.

(3) Bread making requires _____ organism for fermentation.

(4) For BT-Cotton, the insect resistant gene was isolated from _____ bacteria.

(b) Answer in brief : (any **one** out of two) **2**

(1) Define Biotechnology and give one application in medicine field.

(2) Discuss any two applications of biotechnology in the field of environment.

(c) Answer in detail : (any **one** out of two) **3**

(1) Agricultural applications of biotechnology.

(2) Current status and future of biotechnology in developing world.

(d) Write a note on : (any **one** out of two) **5**

(1) rDNA technology.

(2) Ethical and social concerns associated with biotechnology.

2 (a) Objective type questions. **4**

(1) Cells that exhibit variety of shapes are known as _____.

(2) Electron microscope was invented by _____.

(3) _____ was the first person to see cells with a microscope.

(4) Protein coat of virus is called _____.

(b) Answer in brief : (any **one** out of two) **2**

(1) Draw a labelled diagram of plant cell.

(2) Enlist different bacterial cell shape with one example of each.

(c) Answer in detail : (any **one** out of two) **3**

(1) Briefly describe Miller's experiment.

(2) Describe fluorescence microscopy in brief.

(d) Write a note on : (any **one** out of two) **5**

(1) Describe cell theory in detail.

(2) Electron microscopy.

3 (a) Objective type questions. **4**

(1) Cell wall of gram positive bacteria contains peptidoglycan and _____.

(2) _____ makes proteins for the cell.

(3) The membraneous infoldings of the inner membrane of mitochondria are known as _____.

(4) _____ organelle is also known as 'Traffic Police' of the cell.

(b) Answer in brief : (any **one** out of two) **2**

(1) Explain the organelle of the cell also known as 'Suicide Bag'.

(2) Enlist the functions of golgi bodies.

(c) Answer in detail : (any **one** out of two) **3**

(1) Power house of cell.

(2) Give the difference between Gram positive and Gram negative bacteria.

(d) Write a note on : (any **one** out of two) **5**

(1) Short note : Ribosomes.

(2) Explain Fluid Mosaic model in detail.

4 (a) Objective type questions. **4**

(1) In _____ chromosome, the centromere is located at the terminal end.

(2) Lampbrush chromosomes were discovered by _____.

(3) Nucleus was first discovered by _____

(4) Replication of the gennome occurs in the _____ phase of the cell cycle.

(b) Answer in brief : (any **one** out of two) **2**

(1) Explain DNA packaging in prokaryotes.

(2) Draw the labelled diagram of metaphase chromosome.

(c) Answer in detail : (any **one** out of two) **3**

(1) Short note : Cell cycle

(2) Short note : Mitosis.

(d) Write a note on (any **one** out of two) **5**

(1) Explain meiosis in detail.

(2) Write a detailed note on regulation of cell cycle.

5 (a) Objective type questions. **4**

(1) The existence of cytoskeleton was first postulated by _____.

(2) Malignant tumors derived from connective tissue is known as _____.

(3) In humans, the stem cells from which all blood cells arise, are found in the _____.

(4) The type of signalling through hormones is called _____.

(b) Answer in brief : (any **one** out of two) **2**

(1) Define Cancer and enlist categories of cancer.

(2) Explain amoeboid movement.

(c) Answer in detail : (any **one** out of two) **3**

(1) Short note : Cytoplasmic streaming.

(2) What are stem cells ? Give their types.

(d) Write a note on : (any **one** out of two) **5**

(1) Cell-Cell interaction.

(2) Short note : Cytoskeleton.