HDR-003-0011010 Seat No. _____

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

November / December – 2017

BT-101 : Introduction to Biotechnology & Cell Biology

(New Course)

Faculty Code : 003
Subject Code : 0011010

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

Instructions : (1) All Questions are Compulsory.
(2) Figures to the right side indicates marks.
(3) Draw the figure wherever necessary.
(4) Write answers of all questions in main answer sheet.

1 (a) Objective questions : **4**

(1) r stands for _____ in rDNA Technology.

(2) Who discovered DNA double helix structure?

(3) Give any two examples of Recombinant Agricultural product.

(4) Edward Jenner discovered _____.

(b) Answer in brief : (any **one**) **2**

(1) What are vectors?

(2) What is GMO?

(c) Answer in detail : (any **one**) **3**

(1) Write about Ethical and social impact of Biotechnology.

(2) Applications of Biotechnology in the field of agriculture.

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

(1) Give details of Applications of Biotechnology in the field of Medicine

(2) Explain rDNA technique briefly.

2 (a) Objective questions : **4**

(1) Vibrio spp. is _____ shaped.

(2) For spherical shape bacteria scientific term is _____.

(3) Name any two dye used in biological experiments.

(4) What is capsid?

(b) Answer in brief : (any **one**) **2**

(1) Draw labeled diagram of animal cell.

(2) Enlist applications of light microscopy.

(c) Answer in detail : (any **one**) **3**

(1) Describe miller's experiment.

(2) Explain cell theory in detail.

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

(1) Differentiate prokaryotic and eukaryotic cell

(2) Write a short note on "Endosymbiotic theory"

3 (a) Objective questions : **4**

(1) Peroxisomes contain mainly _____ enzyme.

(2) Space between cell wall and plasma membrane is known as _____ .

(3) Full forms of RER and SER?

(4) _____ is known as suicidal bags.

(b) Answer in brief : (any **one**) **2**

(1) Write composition of peptidoglycan.

(2) Which subunits of ribosomes are present in prokaryote and eukaryote?

(c) Answer in detail : (any **one**) **3**

(1) Draw ultrastructure of chloroplast.

(2) Explain exocytosis.

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

(1) Write details of structure and function of Mitochondria.

(2) Explain biochemical functions of glyoxisomes and peroxisomes.

4 (a) Objective questions : **4**

(1) The structure of cell that attracts chromosomes to the poles are _____ and _____

(2) Telophase is followed by _____ in mitosis.

(3) In S phase, S stands for _____ .

(4) H_1 is a type of _____ .

(b) Answer in brief : (any **one**) **2**

(1) Define nucleosome.

(2) What is chaisma?

(c) Answer in detail : (any **one**) **3**

(1) How cell cycle is regulated?

(2) Draw detail process of Mitosis.

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

(1) Write a note on Meiosis I.

(2) Explain the structure and function of nucleus.

5 (a) Objective questions : **4**

(1) Cancer causing agents are known as _____.

(2) _____ and _____ structure can help unicellular cells for locomotion.

(3) Blood cells are formed from _____ stem cells.

(4) Movement and expansion of cancerous cells is known as _____.

(b) Answer in brief : (any **one**) **2**

(1) Explain paracrine signaling.

(2) Explain cytoplasmic streaming.

(c) Answer in detail : (any **one**) **3**

(1) Enlist functions of cytoskeleton.

(2) Write a note on oncogenes.

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

(1) Give brief account on significance of stem cells

(2) Write a note on cell-cell interaction.