B-003-2011014 Seat No. _____

B. Sc. (Sem. I) Examination

March - 2021

BT-101 : Biotechnology

(Intro of Biotech. & Cell Bio.) (New Course)

Faculty Code : 003

Subject Code : 2011014

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

Instruction : Write any 5 questions out of 10 questions.

1 (A) Answer the following (One Mark Each) **4**

(1) Define: Biotechnology

(2) In 1953, Structure of DNA was discovered by _____

(3) In Bt cotton, Bt stands for _____

(4) Write examples of medical products produced using genetic engineering.

(B) Answer the following : **2**

What is r-DNA technology?

(C) Answer the following : **3**

Short note: Social & ethical aspects of biotechnology

(D) Answer the following : **5**

Explain: Application of biotechnology in Agriculture & Environment.

2 (A) Answer the following : (One Mark) **4**

(1) Full form: GMO.

(2) Human genome project was completed in _____ (year).

(3) Full form: NIH.

(4) The first genetically engineered product was _____ Hormone.

(B) Answer the following : **2**
What is host cell for r-DNA technique?

(C) Answer the following : **3**
Explain briefly about current status of biotechnology in world.

(D) Answer the following : **5**
Explain: r-DNA technology and its uses.

3 (A) Answer the following (One mark) **4**
(1) Cell theory was proposed by _____.
(2) Write examples of viruses.
(3) Write examples of prokaryotic organisms.
(4) COVID-19 is a virus without nucleus. True/False

(B) Answer the following (2 mark) **2**
Define: Light Microscopy.

(C) Answer the following (3 mark) **3**
Short note: Origin & evolution of life on earth

(D) Answer the following (5 mark) **5**
Explain in detail about diversity among cell size and shape on earth

4 (A) Answer the following (One mark) **4**
(1) Cell wall is present in plant cell but absent in bacteria. True/False
(2) What is cytology?
(3) Electron microscopy has two types, one is SEM and another is _____
(4) Write examples of fluorescent dye.

(B) Answer the following **2**
Draw well labelled diagram of prokaryotic cell.

(C) Answer the following **3**
Write: Light microscopy V/S Electron microscopy.

(D) Answer the following **5**
Explain: Structure and function of plant cell.

5 (A) Answer the following **4**
(1) Write function of Mitochondria.
(2) Write function of lysosome.
(3) Glyoxisome is not present in plant cell. True/False
(4) Cell wall is a protective layer but it is only present in plant cell. True/False.

(B) Answer the following 2
Write functions of Ribosomes.

(C) Answer the following 3
Draw well labelled diagram of Chloroplast.

(D) Answer the following 5
Explain: Mitochondria.

6 (A) Answer the following (One mark) 4
(1) Full Form: SER
(2) Golgy body is the extension of ER, and the function is _____.
(3) Rough ER having ribosome on surface. True/False
(4) Lytic enzymes are present in _____ organelles of cell.

(B) Answer the following 2
Write importance of plasma membrane

(C) Answer the following 3
Short note: ER

(D) Answer the following 5
Write in detail about Structure and function of Cell wall.

7 (A) Answer the following (One mark) 4
(1) How many pairs of chromosomes is present in human Cell wall ?
(2) Nucleus disappeared in ____ phase of mitosis.
(3) Cytokinesis is the process of breaking nucleus from one to two. True/False.
(4) Define mitosis.

(B) Answer the following 2
Write importance of cell division.

(C) Answer the following 3
Draw the figure of phase of mitosis.

(D) Answer the following 5
Explain different phases of meiosis.

8 (A) Answer the following (one mark) 4
(1) DNA is genetic material but present in chromosomes. (True/False)
(2) In meiosis, Crossing over of chromosomes take place in _____ phase.
(3) Mitosis is important for increasing cell numbers. True/False.
(4) What is cell division ?

(B) Answer the following **2**
Draw metaphase of mitosis.

(C) Answer the following **3**
Short note: Structure of chromosomes.

(D) Answer the following **5**
Explain in detail about meiosis.

9 (A) Answer the following **4**
(1) Malignant tumour present at only one side of body. True/False
(2) Micro filaments, Microtubles and IF are protein in nature. True/False
(3) Define : Cyclosis
(4) What are stem cells ?

(B) Answer the following **2**
What is Amoeboid locomotion ?

(C) Answer the following **3**
Write an overview of Cancer and its types.

(D) Answer the following 05
Explain: Cell-Cell interactions.

10 (A) Answer the following **4**
(1) Flagella is locomotory organelle but it also sensitive to chemical. True/False
(2) What is cilia ?
(3) Gap junctions are composed of _____ Protein.
(4) Microfilaments are made of actin and myosin. True/False

(B) Answer the following **2**
Define: Desmosome

(C) Answer the following **3**
Short note : Microtubles and IF.

(D) Answer the following **5**
Explain: Structure and function of flagella.
