DCW-003-0011010 Seat No. _____

B. Sc. (Biotechnology) (Sem. I) (CBCS) (W.E.F. 2016) Examination

August - 2022

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

Faculty Code : 003

Subject Code : 0011010

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) **4**

(1) Write examples of vectors used in r-DNA technology.

(2) Who discovered first antibiotic?

(3) Define: Biotechnology.

(4) Write examples of biotechnology products.

[B] Answer the following : (2 mark) **2**

Define: Genetic engineering.

[C] Answer the following : (3 mark) **3**

Short note: History of biotechnology.

[D] Answer the following : (5 mark) **5**

Explain: Application of biotechnology in Medical and agriculture.

2 [A] Answer the following : (One mark) **4**

(1) Write contributions of Watson & Cricks in biotechnology.

(2) Enlist steps of r-DNA technology.

(3) Write examples of genetic engineered products in biotechnology.

(4) Full form: NIH.

[B] Answer the following : (2 mark) **2**

What is vaccine?

[C] Answer the following : (3 mark) **3**

Write about importance of biotechnology in the field of environment.

[D] Answer the following : (5 mark) **5**

Explain: Social and ethical aspect related to biotechnology.

3 [A] Answer the following : (One mark) **4**

(1) Who proposed cell theory?

(2) Full form : TEM.

(3) Full form : SEM.

(4) Chloroplast is the kitchen of animal cell. True/False

[B] Answer the following : (2 mark) **2**

Define: Microscopy.

[C] Answer the following : (3 mark) **3**

Short note: Cell theory.

[D] Answer the following : (5 mark) **5**

Explain in detail about ultra structure of bacterial cell.

4 [A] Answer the following : (One mark) **4**

(1) Cell wall is present in bacterial cell. True/False

(2) What is cell?

(3) Define: Eukaryotic organism.

(4) What is microscope?

[B] Answer the following : (2 mark) **2**

What is microscopy? Enlist different types of microscopy.

[C] Answer the following : (3 mark) **3**

Write difference between Light microscopy & Electron microscopy.

[D] Answer the following : (5 mark) **5**

Explain in detail about Diversity of cell shape and size.

5 [A] Answer the following : (One mark) **4**

(1) Write function of Chloroplast.

(2) Write function of ribosomes.

(3) Suicidal bag of cell is _____.

(4) Plasma membrane provide transport facility for cell. True/False

[B] Answer the following : (2 mark) **2**

Write functions of ER.

[C] Answer the following : (3 mark) **3**

Draw well labelled diagram of Mitochondria.

[D] Answer the following : (5 mark) **5**

Explain: Chloroplast.

6 [A] Answer the following : (One mark) **4**

(1) Full form: RER.

(2) Full form: ATP.

(3) Glyoxisome only found in plant and fungi. True/False

(4) Write function of peroxidase.

[B] Answer the following : (2 mark) **2**

Write importance of cell wall.

[C] Answer the following : (3 mark) **3**

Short note: Lysosome.

[D] Answer the following : (5 mark) **5**

Explain in detail about mitochondria.

7 [A] Answer the following : (One mark) **4**

(1) How many chromosomes is present in human cell?

(2) DNA is synthesised in _____ phase of cell cycle.

(3) Define mitosis.

(4) Define meiosis.

[B] Answer the following : (2 mark) **2**

What is cell cycle? Write its importance.

[C] Answer the following : (3 mark) **3**

Write about structure of chromosomes.

[D] Answer the following : (5 mark) **5**

Explain different phases of mitosis.

8 [A] Answer the following : (One mark) **4**

(1) Nucleus is the site for replication. True/False

(2) In metaphase of mitosis _____ chromosomes present on equatorial plane. (Half or All)

(3) Meiosis is important for gametes formation. True/ False

(4) Define: DNA.

[B] Answer the following : (2 mark) **2**

Draw telophase of mitosis cell division.

[C] Answer the following : (3 mark) **3**

Short note: Nucleus.

[D] Answer the following : (5 mark) **5**

Explain in detail about meiosis cell division.

9 [A] Answer the following (One mark) **4**

(1) Define Cancer.

(2) Micro filament is rich with actin. True/False

(3) Full form: ESCs.

(4) What is stem cells?

[B] Answer the following : (2 mark) **2**

Enlist types of cancer.

[C] Answer the following : (3 mark) **3**

Write about applications of stem cell.

[D] Answer the following : (5 mark) **5**

Explain: Cell-Cell interactions.

10 [A] Answer the following : (One mark) **4**

(1) Average diameter of intermediate filaments is about 10nm. True/False

(2) What is cell differentiation?

(3) Define: Cell-Cell interactions.

(4) What is cytoplasmic streaming?

[B] Answer the following : (2 mark) **2**

Write about amoeboid movement.

[C] Answer the following : (3 mark) **3**

Short note: Types of cancer.

[D] Answer the following : (5 mark) **5**

Explain Components of cytoskeleton.
