

B.Sc. Semester - 1 (CBCS) Examination
Oct/Nov. -2019 (OLD COURSE)
BIO-TECHNOLOGY (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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1. A. Answer the following (Any one out of Two): **[07x1]**

- 1) Explain any three applications of Biotechnology in medicine.
- 2) Write a note on: Cloning vectors and their use.

1. B. Attempt any One (Out of Two): **[04x1]**

- 1) Write a brief note: Mechanism of Bt toxin.
- 2) Write a short note on: Ethical issues in Biotechnology.

1. C. Attempt any Three (Out of Five): **[01x3]**

- 1) Who discovered the technique known as fermentation?
- 2) What is use of Restriction endonuclease in genetic engineering?
- 3) **True/ False:** Golden rice has Beta-Carotene gene for Vitamin A production.
- 4) Define: Gene therapy.
- 5) Write any one application of Biotechnology in agriculture.

2. A. Answer the following (Any one out of Two): **[07x1]**

- 1) Write a detailed note on: Structure of Animal cell.
- 2) Write differences between Prokaryotic and Eukaryotic Cell.

2. B. Attempt any One (Out of Two): **[04x1]**

- 1) Write a short note on diversity of cell size and shape.
- 2) Write a short note on structure of Virus.

2. C. Attempt any Three (Out of Five): **[01x3]**

- 1) **True/ False:** Viruses cannot be studied with electron microscopy.
- 2) Fungal cell wall is made up of _____.
- 3) The monomeric units of Capsid are known as _____.
- 4) **True/False:** In electron microscope, beam of electron is passed through specimen to produce an image.
- 5) Give examples of two microscopy techniques used in study of cell.

3. A. Answer the following (Any one out of Two): **[07x1]**

- 1) Write a detailed note on: Structure and function of Nucleus.
- 2) Describe fluid mosaic model of plasma membrane in detail.

3. B. Attempt any One (Out of Two): **[04x1]**

- 1) Explain the structure of Mitochondria in brief.
- 2) Briefly explain structure and function of Endoplasmic reticulum.

3. C. Attempt any Three (Out of Five): **[01x3]**

- 1) **True/False:** Plant has chitinous cell wall.
- 2) The organelle possessing hydrolytic enzymes is known as _____.
- 3) Which organelle is involved in lipid synthesis?

- 4) Photosynthesis takes place in which organelle of plant cell?
- 5) Write one function of Ribosome.

4. A. Answer the following (Any one out of Two): [07x1]

- 1) Write a detailed note on: Structure and functions of Nucleus.
- 2) Explain various phases of Mitosis in detail.

4. B. Attempt any One (Out of Two): [04x1]

- 1) Write a short note on: Cell cycle.
- 2) Briefly explain: Structure of Chromosome.

4. C. Attempt any Three (Out of Five): [01x3]

- 1) **True/False:** Actin participate in formation of Spindle fibers.
- 2) Cytokinesis is division of _____.
- 3) Name the four phases of Cell cycle.
- 4) **True/False:** Sexual reproduction occurs through Meiosis.
- 5) Name any one protein involved in regulation of Cell cycle.

5. A. Answer the following (Any one out of Two): [07x1]

- 1) Define Cytoskeleton. Explain structure of cytoskeleton in detail.
- 2) Explain any two methods for cell locomotion in detail.

5. B. Attempt any One (Out of Two): [04x1]

- 1) Define Cancer. What are various types of Cancer?
- 2) Briefly explain: Tight junctions.

5. C. Attempt any Three (Out of Five): [01x3]

- 1) What is function of Microtubules?
- 2) Cell-cell interaction in plant occurs with the help of _____.
- 3) Name any one cell showing Amoeboid locomotion.
- 4) **True/False:** Stem cells can be obtained from umbilical cord.
- 5) Give names of different types of Stem cells.
