

B.Sc. Semester - 1 (CBCS) Examination
Oct/Nov. -2019 (NEW 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) Describe applications of Biotechnology in Agriculture with suitable examples.
- 2) Write a detailed note on: Recombinant DNA technology.

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

- 1) Write a brief note: Bt cotton.
- 2) Write a short note on: Ethical and Social issues of Biotechnology.

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

- 1) Write any one scientific contribution of Louise Pasteur.
- 2) Define: Cloning vector.
- 3) **True/ False:** Human insulin can be produced in *E.coli* by recombinant DNA technology.
- 4) Genetically modified Rice having Beta Carotene gene is known as _____.
- 5) Write any one application of Biotechnology in environment.

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

- 1) Write a detailed account on: Ultrastructure of Prokaryotic cell
- 2) Describe in detail about origin and evolution of cell.

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

- 3) Write differences between Prokaryotic and Eukaryotic Cell.
- 4) Write a short note on diversity of cell size and shape.

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

- 1) **True/ False:** Gram staining is a differential staining technique.
- 2) Plant cell wall is made up of _____.
- 3) Define: Capsid
- 4) A microscope in which an image is produced by passing a beam of electrons through the specimen is known as _____.
- 5) Write names of any 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: Fluid mosaic model of Plasma membrane
- 2) Describe structure and functions of Chloroplast.

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

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

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

- 1) **True/False:** Fungi has cellulosic cell wall.
- 2) Which organelle possess hydrolytic enzymes?
- 3) Which organelle is known as site of Protein synthesis?
- 4) _____ organelle is also known as Powerhouse of cell.
- 5) Write any one function of Golgi body.

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 Meiosis in detail and give its biological importance.

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

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

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

- 1) Give any one function of Nuclear Pore.
- 2) Fully condensed chromosomes can be observed in _____ phase of Mitosis.
- 3) Cell cycle can be divided in which four phases?
- 4) **True/False:** Asexual reproduction occurs through Mitosis.
- 5) Name any one protein involved in regulation of Cell cycle.

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

- 1) Describe structure and function of Cytoskeleton in detail.
- 2) Enlist various methods of cell locomotion. Explain any two methods in detail.

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

- 1) Write a brief note on: Types of Cancer.
- 2) Briefly explain: Tight junction and its function

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

- 1) Which filament of cytoskeleton helps in placing cell organelles into place?
- 2) Plasmodesmata is present in _____ cell.
- 3) Name any one microbe having Cilia.
- 4) From where the Embryonic Stem cells can be obtained?
- 5) **True/ False:** Locomotion in WBC occurs with cilia.
