

B.Sc. Semester - 1 (CBCS) Examination
Feb/Mar. -2021 (NEW COURSE)
BIO-TECHNOLOGY (CORE)

Time: 1:30 Hours**Marks: 42****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
-

- Q.1(A) **Answer the following (Any one out of Two):** (07)
1. Describe applications of Biotechnology in Medicine with suitable examples.
2. Write a detailed note on: Recombinant DNA technology
- Q.1(B) **Attempt any One (Out of Two):** (04)
1. Write a brief note: Bt cotton
2. Write a short note on: Ethical issues of Biotechnology
- Q.1(C) **Attempt any Three (Out of Five):** (03)
1. Fermentation technique was developed by _____.
2. Define: Gene therapy
3. **True/ False:** Human Insulin is produced in genetically engineered *E.coli*.
4. Genetically modified Rice having gene for Vitamin A is known as _____.
5. Write any one application of Biotechnology in environment.
- Q.2(A) **Answer the following (Any one out of Two):** (07)
1. Write a detailed account on: Ultrastructure of Virus
2. Describe in detail about evolution of cell.
- Q.2(B) **Attempt any One (Out of Two):** (04)
1. Differentiate between Prokaryotic and Eukaryotic Cell.
2. Write a short note on Cell theory.
- Q.2(C) **Attempt any Three (Out of Five):** (03)
1. Gram's staining is _____staining technique for Bacteria.
2. Cell wall of Plant is made up of a polysaccharide known as _____.
3. Define: Pili
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.
- Q.3(A) **Answer the following (Any one out of Two):** (07)
1. Write a detailed note on: Fluid mosaic model of Plasma membrane
2. Describe structure and functions of Mitochondria.
- Q.3(B) **Attempt any One (Out of Two):** (04)
1. Explain the structure and function of Golgi body in brief.
2. Briefly explain structure and function of Chloroplast.
- Q.3(C) **Attempt any Three (Out of Five): [01x3]** (03)
1. **True/False:** Fungi has chitin 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 Endoplasmic reticulum.
- Q.4(A) **Answer the following (Any one out of Two):** (07)
1. Write a detailed note on: Ultrastructure of Chromosomes.
2. Explain various phases of Mitosis in detail and give its importance.

- Q.4(B) **Attempt any One (Out of Two):** (04)
1. Write a short note on: Overview of Cell cycle
 2. Briefly explain ultrastructure of Nucleus.
- Q.4(C) **Attempt any Three (Out of Five):** (03)
1. Cell division that occurs during Gametogenesis is known as_____.
 2. Fully condensed chromosomes can be observed in which phase of Mitosis?
 3. In which phase of Cell cycle duplication of DNA occurs?
 4. **True/False:** Asexual reproduction occurs through Mitosis.
 5. Name any one protein involved in regulation of Cell cycle.
- Q.5(A) **Answer the following (Any one out of Two):** (07)
1. Write a note on: Structure and function of Cytoskeleton.
 2. What are various methods of cell locomotion. Explain any two methods in detail.
- Q.5(B) **Attempt any One (Out of Two):** (04)
1. Write a brief note on Types of Cancer.
 2. Give brief overview of Stem cells.
- Q.5(C) **Attempt any Three (Out of Five):** (03)
1. Which filament of cytoskeleton helps in locomotion?
 2. Plasmodesmata is present in _____ cell.
 3. *Paramecium* uses _____ as its locomotary organ.
 4. Name any source from where Embryonic Stem cells can be obtained.
 5. **True/ False:** Locomotion in WBC occurs with amoeboid motion.
