

B.Sc. Semester - 1 (CBCS) Examination
Feb/Mar. -2021 (OLD 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.

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- Q.1(A) **Answer the following (Any one out of Two):** (07)
- 1) Explain any three applications of Biotechnology in Agriculture.
 - 2) Write a note on: Cloning vectors
- Q.1(B) **Attempt any One (Out of Two):** (04)
- 1) Define Recombinant DNA technology. Write a brief note on tools used for recombinant DNA technology.
 - 2) Write a short note on: Ethical issues in Biotechnology
- Q.1(C) **Attempt any Three (Out of Five):** (03)
- 1) Who coined the term "Biotechnology"?
 - 2) What is use of Restriction enzyme in genetic engineering?
 - 3) _____ gene is present in Golden Rice.
 - 4) Define: Gene therapy
 - 5) Write any one application of Biotechnology in Medicine.
- Q.2(A) **Answer the following (Any one out of Two):** (07)
- 1) Write a detailed note on: Structure of Plant cell
 - 2) Write a note on structure of Virus.
- Q.2(B) **Attempt any One (Out of Two):** (04)
- 1) Write a short note on diversity of cell size and shape.
 - 2) Write differences between Prokaryotic and Eukaryotic Cell.
- Q.2(C) **Attempt any Three (Out of Five):** (03)
- 1) **True/ False:** Viruses can be studied with electron microscopy.
 - 2) Fungal cell wall is made up of _____.
 - 3) Capsid is made up of monomeric units known as _____.
 - 4) **True/False:** In electron microscope, beam of light is passed through specimen to produce an image.
 - 5) Give examples of two microscopy techniques used in study of cell.
- Q.3(A) **Answer the following (Any one out of Two):** (07)
- 1) Write a note on: Structure of Nucleus.
 - 2) Describe fluid mosaic model of plasma membrane.
- 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 Endoplasmic reticulum.
- Q.3(C) **Attempt any Three (Out of Five):** (03)
- 1) **True/False:** Plant cell do not possess cell wall.
 - 2) The organelle with 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 Peroxisome.

- Q.4(A) **Answer the following (Any one out of Two):** (07)
- 1) Write a detailed note on: Structure and functions of Nucleus.
 - 2) Explain various phases of Mitosis in detail.
- Q.4(B) **Attempt any One (Out of Two):** (04)
- 1) Write a short note on: Cell cycle
 - 2) Briefly explain: Structure of Chromosome.
- Q.4(C) **Attempt any Three (Out of Five):** (03)
- 1) **True/False:** Microtubules participate in formation of Spindle fibers.
 - 2) Cytokinesis is division of _____.
 - 3) Name the phase of cell cycle where DNA replication occurs.
 - 4) **True/False:** Gametogenesis occurs through Meiosis.
 - 5) Name any one protein involved in regulation of Cell cycle.
- Q.5(A) **Answer the following (Any one out of Two):** (07)
- 1) Define Cytoskeleton. Explain structure of cytoskeleton in detail.
 - 2) Explain any two methods for cell locomotion in detail.
- Q.5(B) **Attempt any One (Out of Two):** (04)
- 1) Define Cancer. What are various types of Cancer?
 - 2) Briefly explain: Cell-cell interaction
- Q.5(C) **Attempt any Three (Out of Five):** (03)
- 1) What is function of Microtubules?
 - 2) Cell-cell interaction in plant occurs with the help of _____.
 - 3) WBC shows which type of locomotion?
 - 4) **True/False:** Stem cells can be obtained from umbilical cord.
 - 5) Give names of different locomotary organs found in microorganism.
