

B.Sc. Semester - 1 (CBCS) Examination**Nov./Dec. -2018 (New Course)****BIO-TECHNOLOGY****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que-1 (A) Answer the following. (Any one out of Two) (07)
- (1) What is Biotechnology? Explain application of Biotechnology in Medicine with suitable example.
 - (2) Write a detailed note on: Tools of genetic engineering.
- (B) Attempt any One. (Out of Two) (04)
- (1) Explain in brief: Mechanism of Bt toxin.
 - (2) Describe briefly about ethical issues in Biotechnology.
- (C) Attempt any Three. (Out of Five) (03)
- (1) Give any one contribution of Louise Pasteur.
 - (2) Define: Selectable marker.
 - (3) **True/False:** Interferon is used as antiviral agent.
 - (4) Genetically modified Tomato plant having delayed ripening is known as _____.
 - (5) Mention any one method of Ex-situ Biodiversity conservation.
- Que-2 (A) Answer the following. (Any one out of Two) (07)
- (1) Explain in detail: Ultrastructure of Prokaryotic Cell.
 - (2) Describe in detail about: Miller's experiment.
- (B) Attempt any One. (Out of Two) (04)
- (1) Give any four differences between Prokaryotic and Eukaryotic Cell.
 - (2) Briefly explain the structure of Virus.
- (C) Attempt any Three. (Out of Five) (03)
- (1) **True/False:** A Gram negative cell wall is thinner than a Gram positive one.
 - (2) Bacterial cell wall is made up of which material?
 - (3) A microscope in which an image is formed by passing an electron beam through a specimen is known as _____.
 - (4) Define: Capsid.
 - (5) If the eyepiece of a microscope has 10X and the objective is set at 100X, then what is the total magnification of the microscope?
- Que-3 (A) Answer the following. (Any one out of Two) (07)
- (1) Explain structure of Plasma membrane according to Fluid Mosaic Model.
 - (2) Describe structure and functions of Mitochondria.
- (B) Attempt any One. (Out of Two) (04)
- (1) Explain the structure and function of Lysosome.
 - (2) Briefly explain structure and function of Golgi Body.
- (C) Attempt any Three. (Out of Five) (03)
- (1) **True/False:** Nature of plasma membrane is non permeable.
 - (2) What kind of enzymes are present in Lysosome?
 - (3) Which organelle acts as site of Protein synthesis?
 - (4) Dark reaction of Photosynthesis occurs in _____ of chloroplast.
 - (5) Mention the types of Endoplasmic reticulum.

- Que-4 (A) Answer the following. (Any one out of Two) (07)
- (1) Describe structure and function of Nucleus in detail.
 - (2) Explain various phases of Mitosis in detail and give its biological significance.
- (B) Attempt any One. (Out of Two) (04)
- (1) Write a short note on: Cell cycle.
 - (2) Briefly explain about: types of Chromosomes.
- (C) Attempt any Three. (Out of Five) (03)
- (1) Give any one function of Nuclear Pore.
 - (2) Define: Crossing over.
 - (3) Spindle fibres are made up of which Protein?
 - (4) **True/False:** Mitosis is also known as reductional division.
 - (5) Name any one protein involved in regulation of Cell cycle.
- Que-5 (A) Answer the following. (Any one out of Two) (07)
- (1) Describe various proteins of Cytoskeleton and their functions.
 - (2) Explain various methods of Cell Locomotion.
- (B) Attempt any One. (Out of Two) (04)
- (1) Write a short note on: cancer and its types.
 - (2) Briefly explain: Gap junction and its function.
- (C) Attempt any Three. (Out of Five) (03)
- (1) What is Microtubule organization centre (MTOC)?
 - (2) **True/False:** Function of intermediate filaments is to create basket like structure for cell organelles.
 - (3) Name any one microbe having Cilia.
 - (4) From where the Embryonic Stem cells can be obtained?
 - (5) **True/False:** WBC move with flagellar movement.
