Section A: Introduction to Microbiology (15 Marks)

Q1. Multiple Choice Questions (5 Marks)

1. Microorganisms are organisms that are too small to be seen with the naked eye. They are studied under a:
   (a) Telescope (b) Microscope (c) Binoculars (d) Magnifying glass
2. Bacteria are:
   (a) Prokaryotic organisms (b) Eukaryotic organisms (c) Multicellular organisms (d) None of the above
3. Fungi are:
   (a) Autotrophs (b) Heterotrophs (c) Both autotrophs and heterotrophs (d) None of the above
4. Viruses are:
   (a) Living organisms (b) Non-living organisms (c) Both living and non-living organisms (d) None of the above
5. The process of killing microorganisms is called:
   (a) Sterilization (b) Pasteurization (c) Disinfection (d) Antisepsis

Q2. Short Answer Questions (5 Marks)

1. What are the different types of microorganisms?
2. Explain the role of microorganisms in food production.
3. Describe the process of fermentation.

Q3. Long Answer Question (5 Marks)

Discuss the harmful effects of microorganisms and the measures to control them.

Section B: Cell Biology and Biotechnology (15 Marks)

Q1. Multiple Choice Questions (5 Marks)

1. The basic unit of life is:
   (a) Cell (b) Tissue (c) Organ (d) Organ system
2. The cell theory was proposed by:
   (a) Robert Hooke (b) Anton van Leeuwenhoek (c) Schleiden and Schwann (d) Pasteur
3. The process of cell division in which a single cell divides into two identical daughter cells is called:
   (a) Mitosis (b) Meiosis (c) Binary fission (d) Budding
4. Biotechnology is the application of technology to:
   (a) Improve agriculture (b) Produce medicines (c) Protect the environment (d) All of the above
5. Genetically Modified Organisms (GMOs) are organisms whose genetic material has been:
   (a) Removed (b) Added (c) Altered (d) None of the above

Q2. Short Answer Questions (5 Marks)

1. Differentiate between plant and animal cells.
2. Explain the process of mitosis.
3. What are the applications of biotechnology in agriculture?

Q3. Long Answer Question (5 Marks)

Discuss the ethical issues associated with the use of biotechnology.