

**(DBT 01)**

Assignment-I

P.G. DIPLOMA EXAMINATION,  
june 2022

First Year

Bio-Technology

MICROBIOLOGY AND IMMUNOLOGY  
MAXIMUM MARKS :30  
ANSWER ALL QUESTIONS

1. Describe the morphology and ultrastructure of Bacteria
2. Describe the general characters of Yeast and Mycoplasma.
3. Explain the methods of sterilization and its importance.
4. Describe the gene transfer mechanisms.
5. Write an account on phototrophic bacteria and their metabolism.

**(DBT 01)**

**Assignment-2**

**P.G. DIPLOMA EXAMINATION,  
june 2022**

**First Year**

**Bio-Technology**

**MICROBIOLOGY AND IMMUNOLOGY  
MAXIMUM MARKS :30  
ANSWER ALL QUESTIONS**

1. Explain the role of microorganisms in Nitrogen cycle and regulation of Nitrogenase.
  2. Describe the types of immunity and its importance.
  3. Describe the antibody and antigen reactions and their significance.
  4. Write an account on Vaccines and their importance.
  5. Enumerate compliment systems and its significance.
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**(DBT 02)**

## Assignment-I

P.G. DIPLOMA EXAMINATION,  
june 2022

First Year

Bio-Technology

**BIOCHEMISTRY AND MOLECULAR BIOLOGY**

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

1. Describe the structure and functions of Carbohydrates.
2. Write an account on the structure and functions of Nucleic acids.
3. Describe Glycolysis and its significance.
4. Explain the Citric acid cycles and its importance.
5. Write an account on amino acid metabolism and its significance.

**(DBT 02)**

**Assignment-2**

**P.G. DIPLOMA EXAMINATION,  
june 2022**

**First Year**

**Bio-Technology**

**BIOCHEMISTRY AND MOLECULAR BIOLOGY**

**MAXIMUM MARKS :30**

**ANSWER ALL QUESTIONS**

1. Describe the biosynthesis of Deoxy ribonucleotides.
  2. Describe Watson and Crick model of DNA.
  3. Explain the DNA repair mechanisms and write notes on transcription.
  4. Write an account on posttranscriptional modifications.
  5. Enumerate genetic code and the regulation of gene expression.
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**(DBT 03)**

**Assignment-I**

**P.G. DIPLOMA EXAMINATION,  
june 2022**

**First Year**

**Bio- technology**

**PLANT AND ANIMAL TISSUE CULTURE AND GENETIC ENGG.**

**MAXIMUM MARKS :30**

**ANSWER ALL QUESTIONS**

1. Describe the suspension cultures and single cell culture.
2. Explain Bergumens plating technique and its importance.
3. Describe the cellular totipotency and its significance.
4. Explain the methods of the isolation of protoplasts.
5. Write an account on source of material for cell culture.

**(DBT 03)**

**Assignment-2**

**P.G. DIPLOMA EXAMINATION,  
june 2022**

**First Year**

**Bio- technology**

**PLANT AND ANIMAL TISSUE CULTURE AND GENETIC ENGG.**

**MAXIMUM MARKS :30**

**ANSWER ALL QUESTIONS**

1. Describe the constituents of culture medium and its preparation.
  2. Describe micro carrier culture and cell synchronization.
  3. Explain stem cell culture and its applications.
  4. Describe the enzymes used in genetic engineering.
  5. Write an account on gene therapy and expression of cloned genes.
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**(DBT 04)**

## Assignment-I

P.G. DIPLOMA EXAMINATION,  
june 2022.

First Year

Bio- technology

### **APPLICATIONS OF BIOTECHNOLOGY**

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

1. Describe the methods of preservation of industrially important microbes.
2. Explain methods of improvement of industrially important microbes.
3. Describe the fermentative production of acetic acid.
4. Explain the fermentative production of butanol.
5. Write an account on brewing of Vitamins and enzymes.

**(DBT 04)**

## Assignment-2

P.G. DIPLOMA EXAMINATION,  
june 2022.

First Year

Bio- technology

### **APPLICATIONS OF BIOTECHNOLOGY**

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

1. Explain the biosensors and their applications in biotechnology.
  2. Describe production of tetracyclin and its applications.
  3. Explain production of streptomycin and its applications.
  4. Describe the production of somatostatin through genetically engineered microbes
  5. Write an account on the production of transgenic animals and their applications in medicine.
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