

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2290039

Roll No.

B.TECH.

Regular Theory Examination (Odd Sem-VII), 2016-17

INTRODUCTION TO BIOTECHNOLOGY

Time : 3 Hours

Max. Marks : 100

SECTION - A

Note: Attempt all sections. All sections carries equal marks. Write answer of each section in short.

(2×10=20)

1. a) Narrate the scope and concept of biotechnology in present era.
- b) Differentiate between Eukaryotic and prokaryotic cell.
- c) Write down the functions of mitochondria in cellular metabolism.
- d) Define the process of central dogma.
- e) Show the use of vectors in biotechnology.
- f) What role does biotechnology play in agriculture?

- g) What function does endoplasmic reticulum organelle play in cell?
- h) Differentiate between Mitosis and Meiosis process.
- i) Define DNA replication process in short.
- j) On the basis of sugars and nature, differentiate DNA and RNA.

SECTION - B

Note : Attempt any three questions from this section.

(3×10=30)

1. State the Mendel's law and chromosome arrangement in cell.
2. What is Genetic Engineering? What role does vectors play in genetic engineering, prove it with the suitable diagrams.
3. Show the process of regulation of gene expression in prokaryotes.
4. List down the types, functions and characteristic features of lipids and proteins.
5. Define mutation process. How does it occur in DNA and process of DNA repair mechanism.

SECTION - C

Note : Attempt all questions from this section.(5×10=50)

1. What are the applications of biotechnology in medicines, sewage treatment and fermentation technology?

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2. On a brief account what are carbohydrates? List down their types with their respective functions.
3. Write about the features of genetic code and its complete tabular form of representation of specific amino acids.
4. What are stem cells? Define the term totipotency of a cell. What are recent advances in the field of stem cell therapy?
5.
 - a) With the help of suitable diagram show the process of DNA replication.
 - b) What are the social, moral and ethical considerations of ethics in Biotechnology?
