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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (BT) (2012 to 2017) (Sem.-3)**  
**FOUNDATIONS OF BIOTECHNOLOGY**  
Subject Code : BTBT-302  
M.Code : 55072

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A****1. Answer briefly :**

- a) How is Meiosis different from Mitosis?
- b) Which technique would you use for separating sub-cellular organelle from cell lysate of a eukaryotic organism and why?
- c) What is electrophoresis?
- d) Define Monoclonal Antibodies (Mab's). How do they provide protection?
- e) What is the difference between Modern and Old Biotechnology?
- f) What is a nucleosome?
- g) Define an Antibiotic. Which antibiotic was first discovered from a microorganism?
- h) What is bioremediation? Explain giving a suitable example.
- i) What are biopharmaceuticals? How are they produced? Cite an example.
- j) Give the organization of Nucleosome.

**SECTION-B**

2. What is the principle and applications of UV-Visible spectroscopy?
3. Explain the structural features of Watson and Crick Model of DNA.
4. Discuss the role of microorganisms in treatment of Sewage.
5. Write short notes on **any two** (approx. 600 words each) :
  - a) Biopesticides
  - b) Gene Therapy
  - c) Biofertilizers
  - d) Bioengineered Food.
6. Briefly discuss the technique of Bio-augmentation by citing a relevant case.

**SECTION-C**

7. Discuss the role of bacteria and fungi in bioremediation.
8. Describe the production of biofertilizers based on Rhizobium and also explain its significance in Agriculture.
9. Give an account of column chromatography and add a note on Reverse phase chromatography.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**