



Name :

Roll No. :

Invigilator's Signature :

CS/M.Tech (LT)/SEM-3/MLT-302/2011-12

2011

BIOTECHNOLOGY – II

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer any *seven* questions. All answers should be very focused.

1. Define Bio-indicator organism. Write two uses of those organism. How you will assess the high level of organic matter in leather waste added aquatic system using bio-indicator organisms ? 2 + 2 + 6

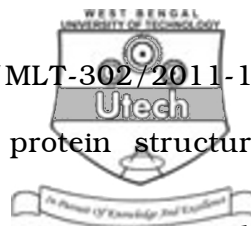
2. Propose five possible sustainable uses of leather waste. 5 × 2

3. You got a job to make a recombinant protease enzyme. How you will design and execute the entire experiment to enjoy a Rs. 20,000 increment of your salary in a biotech company ?

4 + 6



4. There are three sites in a ribosome. What are those sites and the role of those sites in protein synthesis in halo-bacterium ? What is the first amino-acid present in all the protein synthesized in a bacterial cell ? 3 + 6 + 1
5. How the *mRNA* sequences interpreted to amino-acid sequences in prokaryotes with respect to initiation, elongation and termination ? What is amber mutation ? 3 + 3 + 3 + 1
6. Write about two major methods and principles of protein purification. 5 + 5
7. What are the different structures of protein ? Describe with diagram. 3 + 7
8. What is genetically toxic substance ? Write about three genetic toxic substances and their mode of action present in tannery wastes. 1 + 9



9. Define the importance of prediction of protein structure using different softwares. 10

10. Write short notes on the following : $4 \times 2\frac{1}{2}$

- i) Dye used in tannery
- ii) Use of recombinant protein for avoiding putrefaction of hide during tanning
- iii) Red heat in leather
- iv) Halophytic bacteria in tanning procedure.

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