

2013

M.Sc.

3rd Semester Examination

BIOTECHNOLOGY

PAPER—BIT-303

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer all questions.

Group—A

1. Answer any *five* questions from the following : 2×5.
 - (a) How biochips are helpful in modern biology?
 - (b) What is IRR?
 - (c) What is fed batch culture?
 - (d) For which molecules in down stream processing you may apply affinity chromatography and why?
 - (e) Write the need of bioventing in soil cleanups.
 - (f) How plants get nitrogen from *Azotobacter*.
 - (g) Distinguish between COD and BOD.

(Turn Over)

Group—B

Answer any two questions : 5×2

2. State the utility of vermicompost. What importance carrier materials hold in biofertilizer technique?
2½+2½
3. What is COD? What is heterolactic fermentation? State the purposes of food fermentation. 1+1+3
4. Why one goes for genetic improvement of microbial stains? Name the important yeast in wine protection. What is bioprospecting? 3+1+1
5. Briefly write the steps of wine production. 1+4

Group—C

Answer any two questions : 10×2

6. Sequentially show the microbial degradation products of cyclohexane. Does this process help in microbial metabolism? How TCE is degraded aerobically by microorganisms? 5+2+3
7. What do you know by bioaugmentation? State the utility of anaerobic sludge digester in waste water treatment. How is NAOH recycled in fermentation? 2+4+4
8. Write the importance of SCP? Name six metals oxidised by *Thiobacillus ferroxidans*. Why are probiotics useful? 4+3+3
9. What is black liquor in paper industry? How is paper pulp prepared? What damages cadmium do to human body? Write the importance of biosensors. 2+3+2+3