2013
M.Sc.
1st Semester Examination
BIOTECHNOLOGY
PAPER—BIT-103

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.

Group—A

1. Answer any five questions from the following : 5×2

(a) What is Hfr ?

(b) State the functions of att P and att B.

(c) What is a sex pil? 

(d) What is meant by continuous culture?

(Turn Over)
(e) What role Sigma-54 plays in nitrogen fixation?
(f) How tetracyclines show their bacteriostatic activity?
(g) What is PFU?

Group—B

Answer any two questions from the following: 5×2

2. Briefly describe the mechanism of flagellar movement.  

3. What is the role of pac sites in P22 DNA in generalised transduction? What is specialized transduction? 3+2

4. What do you know about dissimilatory nitrate reaction? Name two(n) nitrifying and two denitrifying bacteria. 3+2

5. How bacterial cells minimize osmotic stress across membrane?  
    Define aw. (water activity) 4+1
Group—C

Answer any two questions from the following: 10×2

6. State the differences in transformation between G+ve and G-ve bacteria. State the importance of Translocasome. What is horizontal gene transfer? 3+5+2

7. Which RNA is ‘+’ RNA in viral genomics? Describe the genome replication of a retrovirus. 2+8

8. State the utility of IS elements in F plasmid. Write the importance of mycorrhizae in plant nutrition. What is non-replicative transposition? 3+5+2

9. By which pathway sugar acids catabolised? What is the net ATP gain from ED Pathway? Print out the differences between acetogenesis and methanogenesis. 2+2+6

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