



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS / B.TECH(BT-OLD) / SEM-3 / BT-302 / 2011-12**

**2011**

**MICROBIOLOGY**

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.*

**GROUP – A**

**( Objective Type Questions )**

1. Answer any ten of the following : 10 × 1 = 10

A. Choose the correct alternatives for of the following :

i) The time required for a cell to divide into two is also known as

- a) Generation time      b) Growth rate  
c) Total time              d) None of these.

ii) Nitrate respiration is an example of

- a) Dissimilatory nitrate reduction  
b) Assimilatory nitrate reduction  
c) Both (a) and (b)  
d) none of these.

iii) Cold loving organisms are also called

- a) Psychrophile              b) Mesophile  
c) Hallophile                  d) Barophile







**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

6. Explain the 'S' cycle stating its importance. Name one S-oxidizing and one S-reducing bacteria. Explain with example how inorganic nitrogen as well as sulphur compounds get incorporated into organic compounds.

5 + 2 + 8

7. What happens when nitrate acts as the terminal electron acceptor ? Explain why some bacteria follow phosphoketolase pathway. What is Pasteur effect ? What are the different steps involved in bacterial dark reaction ?

4 + 3 + 2 + 6

8. Describe anaerobic respiration. Differentiate between photosystem 1 and photosystem 2.

9 + 6

9. Explain nif regulation. What is the function of leg haemoglobin ? Discuss about symbiotic nitrogen fixation.

6 + 2 + 7

10. How do hyperthermophiles survive in high temperature ?

Briefly describe sporulation process.  $8 + 7$

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