

This question paper contains 2 printed pages]

Roll No.

--	--	--	--	--	--	--	--	--	--

S. No. of Question Paper : 1459

Unique Paper Code : 2531301

F-7

Name of the Paper : Microbial Physiology and Metabolism

Name of the Course : B.Sc. (Hons) Microbiology (Erstwhile FYUP)

Semester : III

Duration : 3 Hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Attempt five questions in all.

All questions carry equal marks.

1. (a) Describe mechanism of photosynthesis in Cyanobacteria or green bacteria. 8
- (b) Give an example of the following (any seven) : 7×1=7
- (i) Alcohol producing microbe
  - (ii) Uncoupler
  - (iii) Thermophile
  - (iv) Chemolithotroph
  - (v) Free living nitrogen fixer
  - (vi) Facultative anaerobe
  - (vii) Alkalophile
  - (viii) Photoorganotroph
  - (ix) Lactate producer.

P.T.O.

2. (a) Describe the effect of oxygen concentration on the growth of microorganisms. 8  
(b) Giving an example, explain the mechanism of group translocation for the uptake of nutrients by microorganisms. 7
3. (a) Define the following terms giving an example (any *three*) : 3×4=12  
(i) Pasteur effect  
(ii) Siderophore  
(iii) Water activity  
(iv) Denitrification  
(v) ED pathway.  
(b) List any *two* important features of fermentative microorganisms. 3
4. (a) Elucidate TCA cycle or EMP Pathway. 8  
(b) Describe the mechanism of ammonia assimilation in nitrogen fixers. 7
5. Differentiate between the following pair of terms (Any *three*) : 3×5=15  
(i) Batch and Continuous culture  
(ii) Passive and Facilitated diffusion  
(iii) Homofermentative and Heterofermentative pathways  
(iv) Assimilatory and Dissimilatory nitrate reduction.
6. (a) Explain the process of chemolithotrophy in a group of microorganisms studied by you. 8  
(b) Citing a suitable example explain secondary active transport in microorganisms. 7