

Mock Question Paper
MICROBIOLOGY(HONS.)
PAPER C-5(Old Syllabus)

Full Marks:50

Time:2hrs

1. Answer any *four* of the following :

2x4=8

- a) What is the characteristic intermediate of ED pathway? Give an example of a bacteria who follow the ED pathway.
- b) What is proton motive force?
- c) What is nitrate respiration?
- d) Which steps of EMP pathway are unidirectional?
- e) What do you mean by substrate level phosphorylation? Give example.
- f) Distinguish between transketolase and transaldolase with suitable example
- g) What are the key regulatory enzymes in glycolytic pathway?

2. Answer any *three* of the following :

6x3=18

- a) Schematically describe ED pathway. Give one example of bacteria who carry out this pathway other than classical glycolytic pathway and why? 3+3
- b) What is assimilative metabolism? Describe the dissimilative nitrate reduction. Why it is considered as unwanted process? 2+3+1
- c) Schematically represent the ETS in prokaryotes.
- d) Distinguish between bacterial photosynthesis and eukaryotic photosynthesis.
- e) Classify microbes on the basis of oxygen requirement. Why obligate anaerobes cannot tolerate oxygen?
- f) What is SAM? Give a comparative account among transamination, deamination and transmethylation? 1+5

3. Answer any *two* of the following :

12x2=24

- a) How proton motive force generated during oxidative phosphorylation –explain with proper diagram. Who is the proponent of chemiosmotic theory? Describe structure of ATP synthase with labelled diagram. 4+2+6
- b) Describe the steps of PPP. What is its significance? Why PPP is called shunt pathway? 8+2+2
- c) What is nod factor? Give an illustrated account of the process of infection and nodule formation in legume plants? How does different nod factors responsible for this process? 1+8+3
- d) Distinguish between antenna system and reaction centre complex. Describe the ultrastructure of phycobilisome with suitable sketch. Schematically describe the photosynthetic carbon reduction cycle mentioning enzymes in each step. 2+4+6

