AB-3136
B. Sc. (Microbiology) (Sem. V) Examination
March/April – 2015
MB 12 : MICROBIAL PHYSIOLOGY

Time : 2 Hours]                     [Total Marks : 50
Instruction :

(1)

(2) Figures to the right indicate full marks of the question.
(3) Draw neat and labelled diagrams whenever necessary.

1 Give specific answers :
   (a) Name different classes of hydrogen and electron carriers.
   (b) Define fermentation. Why is it important for some microorganisms?
   (c) Discuss in brief nitrification Vs. denitrification.
   (d) Name two photosynthetic pigments. State functions of them.
   (e) Why pyruvate and acetyl Co-A are considered as important metabolites?
   (f) Which kinds of microorganisms are capable of utilizing protein as an energy source? Which enzyme do they secrete for it?

2 Explain/comment on any two of the following :
   (a) Rhodopsin based photosynthesis is shown by many Archaea.
   (b) Glyoxylate cycle is considered as modification of TCA cycle.
   (c) Explain amino acid decarboxylases and transferases.

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[Contd...
3 Discuss any two of the following:
   (a) What is the importance of ATP for cells? Describe its generation by ETC.
   (b) ED and EMP pathway.
   (c) Define dark and light reaction. Explain photosynthetic electron transport system in purple non sulfur and green sulfur bacteria.

4 Write short notes on any two of the following:
   (a) Substrate level phosphorylation
   (b) Energy production by oxidation of hydrogen and sulfur
   (c) Stickland reaction.