

Seat No. : _____

XA-135

T.Y.B.Sc.

March-2013

Microbiology : Paper – VII

(Bacterial Metabolism)

Time : 3 Hours]

[Max. Marks : 70

- Instructions :** (1) **All** questions carry equal marks.
(2) Draw figures wherever necessary.

1. (A) Explain the following (any **two**) : **12**
(a) Role of vitamins as coenzyme.
(b) Zymogen activation.
(c) Components of ETC and their role.
(d) High energy compounds and their role.
(B) Define the following : **2**
(a) Standard free energy change.
(b) K_m
2. (A) Describe the following (any **two**) : **12**
(a) β Oxidation
(b) Pentose phosphate pathway
(c) TCA cycle
(d) Catabolism of aeromatic hydrocarbon
(B) Answer the following : **2**
(a) Define Deamination.
(b) What is meant by amphibolic pathway ?
3. (A) Describe the following (any **two**) : **12**
(a) Utilizable substrates of chemoautotrophs.
(b) Photosynthetic pigments and their role.
(c) General characters and ecological significance of sulphur oxidizers.
(d) Comparative account of plant and bacterial photosynthesis.
(B) Answer the following : **02**
(a) What is Photophosphorylation ?
(b) Name the organism utilizing reverse TCA cycle.

4. (A) Explain the following (any **two**) : **12**
- (a) Strategy of biosynthesis.
 - (b) Calvin Benson cycle.
 - (c) Peptidoglycan synthesis.
 - (d) Methods of studying biosynthetic pathways.
- (B) Define the following : **02**
- (a) Anaplerotic reactions
 - (b) Gluconeogenesis
5. (A) Explain the following (any **two**) : **12**
- (a) Energy metabolism of methanogens.
 - (b) Photophosphorylation in halophiles.
 - (c) General properties of purple bacteria.
 - (d) Nitrogen fixation in Cyanobacteria.
- (B) Answer the following : **02**
- (a) Define homolactic fermentation.
 - (b) Give any one example of green bacteria.
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