

**Chapter 7**  
**Microbial Metabolism**

1. Which of the following statements on photorespiration are CORRECT?  
(A) It occurs only in photosynthesis cells  
(B) NAD<sup>+</sup> is reduced to NADH  
(C) No ATP molecules are formed  
(D) H<sub>2</sub>O<sub>2</sub> is formed
  
2. Which of the following statements are CORRECT?  
(A) Lactic acid is produced by *Lactobacillus delbrueckii*  
(B) Bacterial amylase is produced by *Bacillus subtilis*  
(C) Citric acid is produced by *Rhizopus nigricans*  
(D) Gibberellic acid is produced by *Fusarium moniliforme*
  
3. In anoxygenic photosynthesis, the green and purple bacteria use the following one as electron source  
(A) H<sub>2</sub>O  
(B) H<sub>2</sub>  
(C) H<sub>2</sub>S  
(D) S (elemental sulphur)
  
4. The key enzymes of glyoxylate cycle are  
(A) isocitrate lyase  
(B) Malate synthase  
(C) Isocitrate dehydrogenase  
(D) α-Ketoglutarate dehydrogenase
  
5. Which of the following features are exhibited by green sulphur photosynthetic bacteria?  
(A) Presence of bacteriochlorophylls  
(B) Sulphur deposition outside the cell wall  
(C) Oxygenic mode of photosynthesis  
(D) Non-motile nature of cells
  
6. Which reducing agent are naturally present in the cell?  
(A) Ascorbic acid  
(B) Glutathione  
(C) Cysteine  
(D) Dithiothreitol
  
7. The TCA cycle begins by the condensation of the two-carbon compound with the four-carbon compound to form the more carbon compound. These carbon compounds are  
(A) acetyl CoA  
(B) isocitrate  
(C) oxaloacetate  
(D) citrate
  
8. Transformation of normal cyanobacterial cells into heterocysts involves  
(A) synthesis of nitrogenase  
(B) loss of photosystem I

- (C) aerobic conditions  
(D) fixation of  $\text{NO}_3$
9. Which of the following use water as electron source during photosynthesis?  
(A) Sulfate reducing bacteria  
(B) Methanogenic bacteria  
(C) Green and purple bacteria  
(D) Nitrifying bacteria
10. Which of the following proteins bind to a gaseous ligand?  
(A) Leghemoglobin  
(B) Carbonic anhydrase  
(C) Nitrogenase  
(D) NADPH oxidase

**Answer**

1. (B), (C), (D)  
2. (A), (B), (D)  
3. (B), (C), (D)  
4. (A), (B)  
5. (A), (B), (D)  
6. (A), (B), (C)  
7. (A), (C), (D)  
8. (A), (C), (D)  
9. (A), (B), (D)  
10. (A), (B), (C)