

18/MHS061049

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MATRIC NO: 181MHS061049

COURSE CODE: MCB 202

### 10 BIOCHEMICAL REACTIONS OF BACTERIA

- 1) Heterotrophic metabolism: is a biological oxidation of organic compounds such as glucose, to yield ATP and simpler organic compounds which are needed by the bacteria for biosynthesis.
- 2) Respiration: It is a type of heterotrophic metabolism that uses oxygen and in which 38 moles of ATP are derived from the oxidation of 1 mole of glucose yielding 380,000 cal.
- 3) Fermentation: Another type of heterotrophic metabolism, an organic compound rather than oxygen is the terminal electron acceptor.
- 4) Glyoxylate Cycle: which occurs in some bacteria, is a modification of the Krebs cycle.
- 5) Krebs cycle: is the oxidative process in respiration by which pyruvate is completely carbonylated to  $\text{CO}_2$ .
- 6) Bacteria Photosynthesis: is a light dependent, anaerobic mode of metabolism.  $\text{CO}_2$  is reduced to glucose which is used for biosynthesis and energy production.
- 7) Autotrophy: is a unique form of metabolism found in only bacteria. Inorganic compounds are oxidized directly to yield energy. (eg  $\text{NH}_3$ ,  $\text{NO}_2^-$ ,  $\text{S}_2$ ,  $\text{Fe}^{2+}$ )
- 8) Anaerobic Respiration: another heterotrophic mode of metabolism in which a specific compound other than  $\text{O}_2$  serves as a terminal electron acceptor.
- 9) Electron Transport and Oxidative Phosphorylation: In the final stage of respiration ATP is formed through a series of electron transfer reactions with the cytoplasmic membrane that drive the oxidative phosphorylation of ADP to ATP.
- 10) Nitrogen Cycle: consist of a recycling process by which organic and inorganic nitrogen compounds are used metabolically and recycled among plants, bacteria and animals.

### STAINING TECHNIQUES OF FUNGI

- 2) Giemsa Staining - Flood the smear with methyl alcohol and 3-5 min for fixation, Add prepared Giemsa stain and leave for 45 min, Wash slide thoroughly with running tap water, Blot dry with absorbent paper, Observe under oil immersion.
  - Gram Staining
  - LPCB Staining