

17 OCT 2019

B.Sc. Semester – V Examination – October 2019
MICROBIOLOGY

Paper: MIC-CC-504 Bacterial Metabolism

Paper Code: 21489

Time: 2:30 Hours

Total Marks: 70

Instructions: (a) Figures to the right indicate total marks of respective questions.
(b) Draw neat, clean and labeled diagram wherever necessary.

- Q.1(A) Explain in detail: Structure of ATP phosphohydrolase and rotational production of ATP. 14
OR
- Q.1(A) (i) Write on: ΔG° and direction of a chemical reaction. Mention ΔS and ΔH as well. 07
Q.1(A)(ii) Discuss: Multisubstrate reactions. 07
Q.1(B) Short Questions (Attempt any FOUR) 04
1) What is the significance of Line-weaver Burk plot?
2) What is steady state reaction?
3) Define: Zymogen.
4) Give one example of exothermic reaction.
5) Define: Redox potential.
6) Define: Gibb's free energy.
- Q.2(A) Explanation EMP pathway in detail with significant role of each enzyme. 14
OR
- Q.2(A) (i) Discuss: Stickland reactions. 07
Q.2(A)(ii) Explain: Anabolic role of TCA cycle. 07
Q.2(B) Short Questions (Attempt any FOUR) 04
1) Expand the word: ACP.
2) What is the net ATP gain in PP pathway?
3) Mention the unique intermediate of ED pathway.
4) Name co-enzymes used in β oxidation.
5) What is substrate level phosphorylation?
6) During hypoxia, pyruvate converts to which end product in muscles?
- Q.3(A) Explain in detail: Anoxygenic, cyclic photophosphorylations. 14
OR
- Q.3(A) (i) Discuss: Photosynthetic apparatus with various pigments. 07
Q.3(A)(ii) Explain: Reductive TCA cycle. 07
Q.3(B) Short Questions (Attempt any THREE) 03
1) Expand: RuBISCO.
2) What is the significance of reverse ETC?
3) What is phototroph?
4) Which amino acid residue is associated with water splitting complex?
5) What do you mean by a dark reaction?
- Q.4(A) Explain: Peptidoglycan biosynthesis in Gram negative bacterium. 14
OR
- Q.4(A) (i) Explain: Glyoxylate pathway with its significance. 07
Q.4(A)(ii) Write a note on: Complex lipids. 07
Q.4(B) Short Questions (Attempt any THREE) 03
1) What is pulse labeling?
2) Which modified sugars are present in peptidoglycan?
3) Enlist characteristics of nitrogenase complex.
4) Which unique intermediate forms during glyoxylate pathway?
5) Define: Assimilation.
-