

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU -27
MID SEMESTER TEST – AUGUST 2019
B.Sc. MICROBIOLOGY – III SEMESTER
MB 318: Microbial Physiology, Growth and Control of Microorganisms

Time: 1 hour

Max. Marks: 30

I. Answer any Five of the following

5 x 2 = 10

1. Which major elements are required for the synthesis of Proteins and Nucleic acids?
2. Differentiate Photoautotroph with Photoheterotroph.
3. Write the reactions catalysed by Catalase and Peroxidase.
4. What is the role of the F₁ portion of ATP synthase in oxidative phosphorylation?
5. What are the important criteria for selection of drug targets?
6. Why is ATP said to be the energy currency of the cell?
7. Write the reaction catalyzed by Pyruvate dehydrogenase complex?

II. Answer any One of the following

1 x 5 = 5

8. What is an amphibolic pathway? Why is Citric acid cycle said to be an amphibolic pathway? 1+4
9. a. List the modes of action of the following:
i) Erythromycin ii) Polymyxin iii) Cycloserine 3
b. Classify bacteria based on temperature 2

III. Answer any One of the following

1 x 10 = 10

10. a. What are the strategies that microbes use to modify the target site and attain resistance? 5
b. What factors lead a bacterial culture to stationary phase in a batch culture? Write a note on the importance of Log phase. 3+2
11. a. Which reaction types are catalyzed by the following enzymes? Explain with one example for each. 6
i) Kinases ii) Isomerases iii) Dehydrogenases iv) Aldolases 6
b. What are the possible metabolic fates of pyruvate? 4

IV. Answer the following

1 x 5 = 5

12. a. In eukaryotes, the electron transport chain carriers reside within the inner membrane of the mitochondrion. However, in prokaryotes there is no mitochondria. How does Electron transport chain of prokaryotes and eukaryotes differ? 3
b. What strategy is used while employing antimetabolites as drugs? 2