School of Basic and Applied Sciences

Microbiology

ETE - Jun 2023

Time : 3 Hours **Marks : 50**

Sem II - MSMB5010 - Physiology and Metabolism of Microbes

Your answer should be specific to the question asked

Draw neat labeled diagrams wherever necessary

1.	Summarize the featutes of following: a) Lag phase b) Synchronous culture	K2 CO1	(2)
2.	Define each of the following with an example: a) Facultative anaerobe b) Thermophile	K1 CO1	(2)
3.	Defin the following: a) Saturated Fatty acids b) Phospholipids	K2 CO3	(2)
4.	Demonstrate the important roles of the following pathways: Gluconeogenesis and Pentose phosphate pathway.	K2 CO2	(2)
5.	Explain the role of electron transport chain inhibitors.	K1 CO2	(2)
6.	Discuss the following statement in detail with example. "A number of environmental factors influence microbial growth. Many microorganisms, and particularly bacteria, have managed to adapt and flourish under environmental extremes that would destroy most higher organisms".	K3 CO1	(5)
7.	Explain glycolysis in detail and summarize total energy obtained when one molecule of glucose undergoes complete oxidation.	K3 CO2	(5)
8.	Discuss the synthesis of factty acds using palmitic acid as example.	K4 CO3	(6)
9.	Describe **ANY ONE** a) The role of acetyl CoA, acyl carrier protein and fatty acid synthase in fatty acid synthesis. b) Gluconeogenesis is not the exact reversal of glycolysis. Explain.	K4 CO6	(8)
10.	Explain nitrogenase enzyme system. Survey the process and importance of Nitrogen fixation.	K4 CO5	(8)
11.	What are Chemolithotrophic bacteria? Describe energy production by hydrogen-oxidizing bacteria, and sulphur oxidizing bacteria.	K3 CO4	(8)