

Class: B.Sc. Semester –III

Examination: 2022

Subject: Ind. Microbiology

Paper Name: Microbial physiology and Metabolism

Paper Code: BIM –C 301

Time : 3 Hrs

Max. Marks: 70

Min. Pass % 40

SECTION –A

(Short Answer Type)

Note:- Answer any Five questions in about 150 words. Each question carries six marks. (05 × 6=30)

- Q.1) Different methods of obtaining synchronous culture.
- Q.2) Various phases of bacterial growth curve with the help of well labeled diagram.
- Q.3) What is generation time? How it is calculated
- Q.4) Induced fit theory of enzyme action
- Q.5) Biochemical reactions of alcoholic and lactic acid fermentation
- Q.6) Primary metabolism of complex food material
- Q.7) Energy generation reactions in Glycolysis with enzymes involved
- Q.8) Mechanism of root nodule formation.
- Q.9) Importance of leghemoglobin and Nitrogenase enzyme in nitrogen fixation
- Q.10) Allosteric enzymes

SECTION –B

(Long Answer Type)

Note:- Attempt any Four questions. Each question carries Ten marks (04 × 10 =40)

- Q.1) Describe standard plate count method for the determination of bacterial growth
- Q.2) Explain IUB classification system of enzyme giving one example of each class with its reaction.
- Q.3) What do you understand about aerobic respiration . Explain oxidative phosphorylation for the generation of ATPs
- Q.4) Write a note on different reactions and enzymes involved in them of Tricarboxylic acid cycle.
- Q.5) Make a flow chart of Nitrogen cycle and describe different reactions occurs in symbiotic nitrogen fixation.
- Q.6) Differentiate batch and continuous culture of bacteria. How bacterial growth is measured spectrophotometrically
- Q.7) Write different criteria for the nomenclature of enzyme. Detail the applications of enzyme in healthcare and other industries.
- Q.8) Discuss classification of photosynthetic bacteria.