H-55024

Seat No. _____

M. Sc. (Part - I) Examination

April / May – 2003

Microbiology : Paper - II

(Microbial Physiology & Biochemistry)

Time : **3** Hours] [Total Marks : **100**

Instruction : All questions carry **equal** marks.

1 Answer any **two** :

(a) Enlist methods used to study microbial growth and describe any two in detail.

(b) How continuous growth of the microorganisms is achieved ? Write its significance in the areas of research.

(c) Discuss biochemical aspects of bacterial sporalation.

(d) Discuss physiological aspects of yeast budding.

2 Describe any **two** :

(a) Central reactions of β-keto adipate pathway.

(b) Metabolism of C_1 compunds.

(c) DAP pathway of amino acid synthesis.

(d) Pathways involved in ethanol and lactic acid productions.

3 Write any **two** :

(a) Discuss biosynthesis and regulation of purines.

(b) Describe biosynthetic pathways for the antibiotics by giving suitable examples.

(c) How co-ordination of amino acid biosynthesis and carbohydrate utilization is perfected in bacteria.

(d) Briefly describe biochemical aspects of antibiosis.

4 Answer any **two** :

(a) Describe symbiotic nitrogen fixation.

(b) What is chemotaxis ? Discuss its role in a microbial cell.

(c) Give the importance and derivation of Michaelis Menton equation.

(d) What are the salient features and uses of allosteric enzymes ?

5 Write any **two** :

(a) Explain principles, working and applications of spectrophotometric techniques.

(b) Enlist various types of electrophoresis methods and explain general principle and applications.

(c) Discuss methods used for the analysis of nucleic acids in a microbial cell.

(d) What are the different elements present in a microbial cell ? Give their percentage composition and describe analysis of nitrogenous compounds.

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