

**M. Sc. DEGREE I SEMESTER EXAMINATION IN
MARINE BIOLOGY/HYDROCHEMISTRY/
ENVIRONMENTAL TECHNOLOGY
DECEMBER 2004**

MBO 2103 BIOCHEMISTRY I

Time : 3 hours

Maximum Marks: 50

PART - A

(Answer ALL questions)

(All questions carry EQUAL marks)

I. Choose the correct answer: (5 x 1 = 5)

1. Sucrose differs from lactose and maltose in that -

- (a) it is a reducing sugar.
- (b) it is a non-reducing sugar.
- (c) it has two glucose units.
- (d) it has a mannose unit.

2. Glycolysis is a sequence of reactions in which -

- (a) glucose is converted to pyruvate.
- (b) glucose is converted to glycogen.
- (c) glycogen is hydrolysed to glucose.
- (d) glucose is converted to amino acid.

3. The co-enzyme for pyruvate dehydrogenase complex is -

- (a) biotin.
- (b) thiamine pyrophosphate.
- (c) NAD.
- (d) FAD.

(Turn Over)

4. Ribose 5-phosphate is present in -

- (a) both ATP and lactose.
- (b) both RNA and starch.
- (c) both ATP and DNA.
- (d) both cellulose and TPP.

5. Similarity between methionine and lysine is that -

- (a) both contain sulphur group.
- (b) both are basic amino acids.
- (c) both are essential amino acids.
- (d) both are aromatic amino acids.

II. Write the chemical structures of the following:-

(5 x 1 = 5)

- 1. β -D-galactose.
- 2. Erythrose.
- 3. Leucine.
- 4. Methionine.
- 5. Cytosine.

III. Name the following:-

(5 x 1 = 5)

- 1. Two essential amino acids.
- 2. Two enzymes of the glycolytic pathway.
- 3. Two vitamins as coenzymes.
- 4. Two high-energy biomolecules.
- 5. Two allosteric enzymes.

SECTION - B

(Write short notes on ANY FIVE of the following)

(All questions carry EQUAL marks)

(5 x 4 = 20)

- IV. Classification of enzymes..
- V. Aromatic amino acids.
- VI. Digestion of carbohydrates.
- VII. tRNA.
- VIII. Allosterism.
- IX. Enzyme inhibition
- X. Transamination.
- XI. Genetic code.

SECTION - C

(Answer ANY ONE question)

(Question carries FIFTEEN marks)

(1 x 15 = 15)

- XII. Describe the glycolytic pathway. What is the significance of the pyruvate dehydrogenase complex?
- XIII. What are the reactions of the citric acid cycle? How many ATP are generated in one turn of the cycle?
- XIV. What is meant by ketosis? Describe the β -oxidation of fatty acids.
