

Your Roll No.....

M.Sc. SEMESTER - I EXAMINATION (2017)

PAPER CODE – MFC-001

PAPER TITLE: FOUNDATION COURSE

(Write your roll number immediately on receipt of this question paper)

Use Separate Answer sheets to answer different units of the Foundation Course

Attempt all questions. All parts of a question must be attempted in continuation. Start answer of a fresh question on a new page. Cite examples and draw labeled diagrams wherever necessary.

Unit - II: BIOCHEMISTRY

Time: One Hour

Maximum Marks: 37.5

Q1. Attempt all questions

A. Write **True** or **False** against each of the following statements.

[0.5x10]

- 1) Glycine is a chiral molecule.
- 2) 6 N methyl lysine is a modified amino acid.
- 3) A pentapeptide has five peptide bonds.
- 4) Lactose is a reducing disaccharide.
- 5) Triacylglycerols are neutral lipids.
- 6) All antigens are immunogens but not all immunogens are antigens.
- 7) Antibodies are important for fight against intracellular pathogens.
- 8) Increase in complexity of the antigen increases its immunogenicity.
- 9) Change in Gibbs free energy of a reaction decreases in presence of a catalyst.
- 10) Cytosol in the cell is a water based gel.

B. Fill in the blanks

[0.5x17]

- 1) A holoenzyme consists of a and cofactor/coenzymes.
- 2) Cell mediated immune response is mediated by lymphocytes.
- 3) All cells can present antigen to Tc cells via class..... MHC
- 4) Immunoglobulin is called the antiseptic paint of the body
- 5) Cell theory was given by and
- 6) Organelles are important for breakdown of waste in a cell.
- 7) is the first line of defence.
- 8) viral component contributes towards symmetry of viruses.
- 9) Spherical viruses have symmetry.
- 10) Class V of Baltimore classification includes viruses with single stranded of polarity.
- 11) is the net gain of ATP in glycolysis.
- 12) is the measure of randomness of system.

- 13) converts cellular hydrogen peroxide to water in pentose phosphate pathway.
14) Fatty acid oxidation generally occurs in.....

C. Answer the following very briefly.

[2x4]

- 1) Differentiate between autotrophs and heterotrophs.
- 2) Differentiate between anabolism and catabolism.
- 3) Differentiate between glycolysis and gluconeogenesis.
- 4) Differentiate between Beta-oxidation in mitochondria vs peroxisomes.

Q2. Answer ANY FOUR of the following

[4x4=16]

- A. Explain the Watson and Crick model of DNA.
 - B. Briefly write about any four non standard amino acids.
 - C. Give four major functions of fats.
 - D. Define trophic hormones
 - E. Discuss the main class of enzymes according to the EC nomenclature.
 - F. Discuss active and passive immunity.
 - G. Describe feeder pathways for glycolysis.
 - H. Describe Calvin-Benson-Bassham cycle.
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