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Total No. of Pages : 02

Total No. of Questions : 09

**M.Sc.(BT) (2011 to 2017) (Sem.-1)**  
**BIOMOLECULES AND METABOLISM**

Subject Code : MSBT-101

M.Code : 15001

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**Q1. Answer briefly :**

- a) Write the structure of lactose.
- b) Distinguish between anomers and epimers.
- c) Distinguish between gluconeogenesis and glycogenolysis.
- d) Name the components of pyruvate dehydrogenase complex.
- e) Name the reactions of glycolysis which yield ATP.
- f) Write the reaction of nitrogen fixation.
- g) Write down the name(s) of intermediates of citric acid cycle from which amino acid are formed.
- h) Write down the characteristics of lipids.
- i) Define ketone bodies.
- j) Write the structure of a typical glycerol based phospholipid.

### SECTION-B

- Q2. Describe structural polysaccharides.
- Q3. Describe how pyruvate is converted to lactic acid?
- Q4. Discuss components of mitochondrial electron transport chain.
- Q5. Describe salvage pathway for pyrimidine biosynthesis.
- Q6. Write a note on sphingolipids.

### SECTION-C

- Q7. Describe gluconeogenesis and its regulation.
- Q8. Write a note on fatty acid biosynthesis and regulation.
- Q9. Describe the mechanism of nucleotide degradation.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**