



JBG-BT-04

Seat No. _____

**M. Sc. (Biotechnology) (Sem. I) (CBCS)
(W.E.F. 2016) Examination**

December - 2019

BT - 104 : Biochemistry

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1** Answer any **seven** of the following : **14**
- (i) Give general formula of monosaccharides.
 - (ii) What are sphingolipids?
 - (iii) Enlist sulfur containing amino acids. What is their role in protein structure?
 - (iv) Which amino acid has no asymmetric carbon?
 - (v) Enlist modified bases found in tRNA.
 - (vi) Enlist various plant growth promoting activities of rhizobacteria.
 - (vii) State the difference between bacterial and plant photosynthesis.
 - (viii) What is nitrogen fixation?
 - (ix) What is oxidative deamination of proteins?
 - (x) What are fos mutants?
- 2** Answer any **two** of the following : **14**
- (i) Describe the biological importance of polysaccharides.
 - (ii) What are Monosaccharides? Discuss their properties and classification.
 - (iii) Give an account of complex lipids.
- 3** Answer the following : **14**
- (i) Comment on some uncommon amino acids and their special functions.
 - (ii) Discuss properties of nucleotides which affect the 3-D structure of DNA.

OR

- 3** Answer the following : **14**
- (i) Highlight the basic roles of protein as a macromolecule.
 - (ii) Discuss the salient features of the prokaryotic and eukaryotic mRNAs.
- 4** Answer the following : **14**
- (i) Describe the photosystem II with complete Z-scheme.
 - (ii) Discuss the biochemistry of nitrogen fixation.
- 4** Write a note on any two of the following : **14**
- (i) Energetics of TCA cycle
 - (ii) HMP shunt
 - (iii) Amino acid metabolism
 - (iv) Omega-oxidation of fatty acids
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