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**BSCBCC 281**

**Choice Based Credit System Fourth Semester B.Sc. Degree  
Examination, September 2022  
(2020 –21 Batch Onwards)  
BIOCHEMISTRY (Paper – VI)  
Biomolecules and Biochemical Techniques**

Time : 3 Hours

Max. Marks : 80

**PART – A**

I. Answer **any ten** of the following questions. **(10×2=20)**

- 1) a) What are heteropolysaccharides ? Give one example.
- b) Write the structure of maltose.
- c) Give the importance of glutathione.
- d) Write the structure of  $\beta$ -D-glucopyranose.
- e) What are nucleosides ? Give an example.
- f) Define saponification value and give its significance.
- g) Write the biological importance of cerebrosides.
- h) Write the structure of lecithin.
- i) Give the reaction of RNA with acid.
- j) Name any one acidic aminoacid and write its structure.
- k) Write any two applications of GC.
- l) What are phosphoproteins ? Give one example.

**PART – B**

II. Answer the following questions. **(15×4=60)**

**Unit – I**

- 2) a) Explain the classification of monosaccharides with examples.
- b) Explain the elucidation of open chain structure of glucose.
- c) Give the following reactions of monosaccharides with
  - i) Phenylhydrazine
  - ii) HCN
  - iii) Addition.

**(4+4+7)**

OR

P.T.O.



- 3) a) Explain Ruff's degradation method.  
b) Write a note on starch.  
c) i) Give the structure and importance of amino sugars.  
ii) Write open chain structure of fructose and galactose. **(5+3+7)**

**Unit – II**

- 4) a) Explain MUFA and PUFA.  
b) Explain the biological importance of prostaglandins.  
c) Give an account on classification lipids with examples. **(4+4+7)**

OR

- 5) a) Discuss types and functions of lipoproteins.  
b) Write a note on spingolipids.  
c) i) Explain the functions of plasma membrane.  
ii) Write a note on membrane receptors. **(5+3+7)**

**Unit – III**

- 6) a) Explain  $\beta$ -helical structure of proteins.  
b) Explain two methods of chemical synthesis of aminoacids.  
c) Give an account on classification of proteins based on solubility. **(4+4+7)**

OR

- 7) a) Give the reactions of aminoacids with FDNB and Dansyl chloride.  
b) Write a note on peptide bond.  
c) i) Explain the sequencing of aminoacids by Edman's method.  
ii) Write a note on Valinomycin. **(5+3+7)**

**Unit – IV**

- 8) a) Explain double helical structure of DNA.  
b) Discuss the construction and applications of ultra centrifugation.  
c) Describe paper chromatography. **(4+4+7)**

OR

- 9) a) Give an account on agarose gel electrophoresis.  
b) Explain the centromere of eukaryotic chromosome.  
c) i) Explain ion-exchange chromatography.  
ii) Write a note on TLC. **(5+3+7)**
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