

F.Y. B.Sc. (CBCS) Sem II
USBCT-C03 - Biochemistry Paper-I (Cell Biology & Biomolecules)

P. Pages : 2

Time : Three Hours



GUG/S/18/20063

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. What is mitosis & Describe the major features of each mitotic phase. 10

OR

a) Describe the fluid mosaic model of the plasma membrane. 2½

b) Explain the $\text{Na}^+ - \text{K}^+$ ATPase pump. 2½

c) Differentiate between animal cell and plant cell. 2½

d) Discuss the process of exocytosis. 2½

2. Describe the structure and functions of mitochondria. 10

OR

a) Give an account of structure of ribosome. 2½

b) Describe the functions of lysosomes. 2½

c) Discuss the structure of Golgi complex. 2½

d) What is smooth endoplasmic reticulum? What are its functions? 2½

3. What are storage polysaccharides? Describe the structure of starch and glycogen. 10

OR

a) Give the reaction of monosaccharides with phenyl hydrazine hydrochloride. 2½

b) Define carbohydrates? How are they classified? 2½

c) What are heteropolysaccharides? Give the chemical structure of any one heteropolysaccharide. 2½

d) Describe the phenomenon of mutarotation. 2½

4. What are triacylglycerols? Describe the following properties of triacylglycerol with their significance. 10

i) Saponification value.

ii) Acid value.

iii) Iodine number.

OR

- a) What are saturated & unsaturated fatty acids? Explain giving example. 2½
- b) What are phospholipids? Give the chemical structure of lecithin. 2½
- c) Define essential fatty acids? Give three examples of essential fatty acids. 2½
- d) Write a note on sphingomyelins. 2½

5. Attempt **any ten** of the following.

- a) Define meiosis. 1
- b) What is antiport and symport? 1
- c) What is meant by prokaryotic cell? 1
- d) What is the meaning of 'S' in 70s ribosome? 1
- e) Which cell contain chloroplast? 1
- f) what is meant by rough endoplasmic reticulum? 1
- g) What are epimers? 1
- h) Name the monosaccharides yield after hydrolysis of sucrose. 1
- i) Name the glycosidic linkage present in cellulose. 1
- j) what is wax? 1
- k) Name the product obtain after dehydration of glycerol. 1
- l) What are cephalins? 1
