This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **5811**

Unique Paper Code : **2492011203**

Name of the Paper : **Basic Concepts of Cell Biology**

Name of the Course : **B.Sc. (Hons.) Biochemistry (NEP)**

Semester : **II**

Duration : **2 Hours** Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

There are *six* questions.

Attempt any *four* questions.

All questions carry equal marks.

Question No. **1** is compulsory.

1. (*a*) State True *or* False and justify your answer :

(*i*) Chloroplast is also called a semi-autonomous organelle.

(*ii*) Glycosylation of proteins takes place in only endoplasmic reticulum.

(*iii*) Lysosomal enzymes function at neutral pH.

(*iv*) Microfilaments play a major role in nutrient absorption.

(*v*) Integrins are important components of cell membrane.

(*vi*) Emerin is located on inner membrane of mitochondria.

P.T.O.

(*b*) Define the following :

(*i*) MTOCs

(*ii*) Formin

(*iii*) Focal adhesion

(*iv*) Lysosomal storage disease. 9,6

2. (*a*) Describe briefly the polymerization and organization of microtubules.

(*b*) Draw a well labelled diagram of mitochondria and write down its functions.

(*c*) Describe briefly on histochemical staining techniques. 6,5,4

3. Differentiate the following :

(*i*) Mitosis and meiosis

(*ii*) Desmosomes and hemidesmosomes

(*iii*) Pinocytosis and phagocytosis. 5,5,5

4. (*a*) Describe the structure of light microscope and elaborate on its working principle.

(*b*) Explain the transport of proteins to nucleus.

(*c*) Draw a well labelled diagram of nuclear pore complex. 6,5,4

5. Write short notes on the following :

(*i*) Biogenesis and functions of peroxisomes

(*ii*) Actin binding proteins

(*iii*) Protein glycosylation in endoplasmic reticulum. 6,5,4

6. (*a*) Describe briefly structure, assembly and functions of intermediate filaments.

(*b*) Describe briefly structure and functions of cell matrix proteins with at least *two* suitable examples.

(*c*) Elaborate on connexin proteins and plasmodesmata with the help of diagrams. 6,5,4