

**2018**  
**CBCS**  
**1st Semester**  
**BIOTECHNOLOGY**

**PAPER—C2T**

**(Honours)**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Cell Biology**

1. Answer any *five* questions :

5X2

(a) Why cell is termed the structural and functional unit of the organism ?

(b) What is Naked DNA ?

*(Turn Over)*

- (c) Who is Lynn Margulis ?
- (d) What is meant by active transport ?
- (e) Which plastid is green in colour and why ?
- (f) Why are Mitochondria and Chloroplast called semi-autonomous ?
- (g) Why lysosomes are called suicidal bags ?
- (h) What is second messenger ?

2. Answer any *four* questions : 4x5

- (a) What is lipid bilayer ? Draw Singer and Nicholson's model of cell membrane. 2+3
- (b) Name the self-duplicating cell organelles. Why are they so called ? 2+3
- (c) Which cell organelles are membrane-bound ? What is the advantage of such arrangement ? 5

(d) Justify the statement that— 'cell wall although a dead material, influences living processes inside the cell'.  
Why is cell membrane vital for the cell? 3+2

(e) What do you mean signal transduction? Write in brief about the signal transduction process within the cell. 1+4

(f) What do you mean the 'Cell theory'? Write briefly write on cell theory. 2+3

3. Answer any *one* questions : 1X10

(a) Differentiate between cell wall and cell membrane. What are integral membrane proteins in cell membrane? Differentiate between the structure and function of centriole and cilia/flagella. 2+3+5

(b) Define Cancer. Write down the characteristics and molecular basis of Cancer development. 2+8