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**4 SEM TDC BOT M 3**

**2 0 1 6**

( May )

**BOTANY**

( Major )

Course : 403

**( Cell Biology and Modern Laboratory Technique )**

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Write the correct answer of the following : 1×3=3
- (i) The organelle concerned with protein synthesis, mechanical support and enzyme transport is
1. cell membrane
  2. mitochondria
  3. endoplasmic reticulum
  4. dictyosome



( 2 )

(ii) A nucleic acid is a polymer of

1. nucleosides
2. amino acids
3. proteins
4. nucleotides

(iii) RNA is a genetic material of

1. animal viruses
2. plant viruses
3. bacteriophages
4. All of the above

(b) Fill in the blanks :

$1 \times 2 = 2$

(i) The structure present between the walls of two adjacent cells is \_\_\_\_\_.

(ii) \_\_\_\_\_ is used to determine acidity and alkalinity of substances.

(c) Write short accounts of the following :

$3 \times 3 = 9$

(i) Structure and functions of Golgi bodies found in a typical eukaryotic cell

(ii) Cell cycle

(iii) Membrane transport

( 3 )

2. Describe with diagram the structure and chemical composition of chloroplast. What are the differences between chromoplast and leucoplast?  $(4+2)+2+2=10$

Or

Write the structure and functions of the following :  $(3+2) \times 2 = 10$

(a) Nucleus

(b) Endoplasmic reticulum

3. What do you mean by the terms chromosomes, gene and DNA? Draw and describe the structure of DNA.  $3+3+4=10$

Or

Write short notes on the following :

$5+(2\frac{1}{2}+2\frac{1}{2})=10$

(a) Different types of RNA present in the living system

(b) Functions of DNA and RNA

4. (a) Define chromatography. Write the procedure and applications of paper chromatography.  $2+4+2=8$

Or

Describe the principle, structure and applications of phase-contrast microscope.  $2+3+3=8$

( Turn Over )



(b) Write short notes on any *two* of the following : 3×2=6

(i) Colorimeter

(ii) Laminar airflow

(iii) Hot-air oven

(iv) Role of computer in biological science

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