

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*

(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

- (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 :

- (i) The structure present between the walls of two adjacent cells is 1×2 _____.
- (ii) _____ is used to determine acidity and alkalinity of substances.

(c) Write short accounts of the following :

- (i) Structure and functions of Golgi bodies found in a typical eukaryotic cell 3×3
- (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. $2+4=6$

Or

Describe the principle, structure and applications of phase-contrast microscope. $2+3=5$

(b) Write short notes on any two of the following :

3x2=6

(i) Colorimeter

(ii) Laminar airflow

(iii) Hot-air oven

(iv) Role of computer in biological science
