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4 SEM TDC BOT M 3

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(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) Which of the following is an exception to cell theory?

1. Bacteria
2. Viruses
3. *Chlamydomonas*
4. Fungi

(ii) If ribosomes of a cell are destroyed, then

1. photosynthesis will not occur
2. respiration will not take place
3. fats will not be stored
4. proteins will not be synthesized

(iii) Vacuole contains

1. cytoplasm
2. cell sap
3. nucleic acid
4. hyaloplasm

(b) Fill in the blanks : 1×2=2

(i) The pH meter consists of two electrodes—glass electrode and _____ electrode.

(ii) CPU is the abbreviated form of _____.

(c) Write short notes on the following :

3+2+2+2=9

(i) Significance of meiosis

(ii) Characteristic features of prokaryotic cell

(iii) Chemical composition of cell wall

(iv) Cell cycle

(3)

2. What are different kinds of plastid found in plants? Describe with diagram the structure and functions of chloroplast.

3+3+2+2=10

Or

Write the structure and functions of the following :

5×2=10

- (a) Nucleus
(b) Golgi bodies

3. Answer (a) or [(b) and (c)] :

- (a) What are the nucleotides of DNA? Discuss how different types of nucleotide of DNA molecule are linked together. Write the functions of DNA.

2+5+3=10

Or

- (b) Discuss about different types of RNA present in the living system.

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- (c) What are chromosomes? How does the position of centromere form the basis of classification of chromosomes?

2+4=6

4. (a) Define chromatography. Describe the procedure of paper chromatography. What is thin-layer chromatography?

2+4+2=8

(4)

Or

Write notes on the following : (2+2)+4=8

- (i) Principle and applications of dark field microscope
 - (ii) Role of computer in biological science
- (b) Write short accounts on any *two* of the following : 3×2=6
- (i) Hot-air oven
 - (ii) Colorimeter
 - (iii) Laminar air flow
 - (iv) Autoradiography
