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4 SEM TDC BOT M 3

2017

(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 : $1 \times 3 = 3$

(i) Cytoplasmic bridge between adjacent cells is

1. plasma membrane

2. middle lamella

3. plasmodesmata

4. primary cell wall

(Turn Over)



(2)

(ii) Adenine is attached to thymine by

1. one hydrogen bond
2. two hydrogen bonds
3. three hydrogen bonds
4. four hydrogen bonds

(iii) Ripe fruits, carrot and coloured flowers contain

1. chloroplast
2. chromoplast
3. leucoplast
4. chromatophores

(b) Fill in the blanks :

(i) _____ is a device to measure the intensity and wavelength of light after it has passed through an absorbing medium.

(ii) ROM is the abbreviated form of _____.

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(3)

(c) Answer/Write short accounts on the following :

(i) "Cell is the basic unit of life."
Discuss in brief.

3

(ii) Define amitosis with example.

2

(iii) Cell adhesion

2

(iv) Membrane transport

2

2. Distinguish between cell wall and plasma membrane. Describe with diagram the structure and functions of plasma membrane.

$2+4+2+2=10$

Or

Give an account of the structure, origin and functions of mitochondria with diagram.

$3+2+2+3=10$

3. Describe the structure of DNA with diagram. How DNA differs from RNA in structure and functions?

$(4+2)+4=10$

Or

Answer the following :

$4+6=10$

(a) Write a short note on Nucleoproteins.

(b) Name different types of RNA and state their functions.

(Turn Over)

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4. (a) Write the principle and applications of electron microscope. Compare electron microscope with compound microscope. $1+2+5=8$

Or

Write notes on the following :

$3+5=8$

- (i) Gel Filtration
 - (ii) Spectrophotometry in biological science
- (b) Write short notes on any two of the following : $3 \times 2 = 6$
- (i) Autoclave
 - (ii) pH meter
 - (iii) Centrifuge
 - (iv) Ascending and descending chromatography
