4 SEM TDC BOT M 3

2015

(May)

BOTANY

(Major)

Course : 403

(Cell Biology and Modern Laboratory Technique)

Full Marks : 48
Pass Marks : 19

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) Ribosomes are synthesized in

   1. nucleoplasm
   2. nucleolus
   3. Golgi complex
   4. cytoplasm

(Turn Over)

(ii) Guanine and cytosine are paired by
1. one hydrogen bond
2. two hydrogen bonds
3. three hydrogen bonds
4. four hydrogen bonds

(iii) Golgi bodies help in
1. secretion
2. synthesis
3. storage
4. All of the above

(b) Fill in the blanks : 1×2=2
(i) Cytokinesis is a division of ——.
(ii) ROM is the abbreviated form of ——.

(c) Write short notes on the following : 3×3=9
(i) Structure of chloroplast
(ii) Lysosome
(iii) Cell sap

2. What are the conservative and semi-conservative methods of replication of DNA? Describe with diagrams the various steps in the mechanism of semiconservative replication of DNA. 3+7=10

Or

Write notes on the following :

(a) Structure and chemical composition of plasma membrane 3+2=5

(b) Nucleoproteins 5

(Continued)

3. Give a detailed account of the structure, origin and functions of mitochondria. 4+3+3=1

Or

What do you mean by chromosomes? What are extra-nuclear chromosomes? How does the position of centromere form the basis of classification of chromosomes? Support your answer with diagram. 2+3+5=1

4. (a) Describe the principle, structure and applications of electron microscope. 2+4+2=8

Or

(b) Write brief notes on the following : 4+4=8
(i) Thin-layer chromatography
(ii) Application of computer in biological science

(c) Write short accounts on the following (any *two*) : 3×2=6
(i) Resolving and magnification power
(ii) Incubator
(iii) Autoclave
(iv) Centrifuge

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