

Roll No.

Total No. of Questions : 9]
(2034)

[Total No. of Printed Pages : 4

UG (CBCS) IIIrd Year Annual Examination

3008

B.SC. BOTANY

(Cell and Molecular Biology)

(DSE-1B)

Paper : BOTA 303

Time : 3 Hours]

[Maximum Marks : 50

Note :- Attempt *five* questions in all. Q. No. 1 is compulsory.
Attempt *one* question each from Sections-B, C, D
and E. All questions carry equal marks.

Section-A

(Compulsory Question)

1. Do as directed :

(i) Who gave cell theory ?

(ii) technique is used to study
3-dimensional structure of molecules.

CH-308

(1)

Turn Over

- (iii) Ribosomal RNAs are mostly synthesised over
- (iv) Which organelle is called suicide bag ?
- (v) Name the chemical substance presents in middle lamella.
- (vi) Name the stage of cell division in which chromosomes are shortest and thickest.
- (vii) DNA with left handed rotation is called DNA.
- (viii) is a start signal.
- (ix) tRNA complexed with amino acid is called as
- (x) Which gene produces a repressor that binds to operator gene and stops its working ? $1 \times 10 = 10$

Section-B

2. (a) Draw well labelled diagram of eukaryotic cell, how is genetic material of prokaryotes is different from eukaryotes ?
- (b) Describe working of scanning electron microscope.
- (c) What is resolving power of a microscope ? $5,4,1$

3. (a) Describe ultrastructure of chloroplast and give its functions.
- (b) Differentiate between outer and inner mitochondrial membrane.
- (c) Write a note on marker enzymes of mitochondria. 5,3,2

Section-C

4. Write notes on the following :
- (i) Ultrastructure of nucleus
- (ii) Structure of Endoplasmic reticulum
- (iii) Functions of peroxisomes 5,3,2
5. (a) Draw well labelled diagram of cell wall and elaborate its structural details.
- (b) Give most accepted hypothesis to explain the structure of cell membrane.
- (c) What is pinocytosis ? 5,4,1

Section-D

6. (a) What is cell cycle ? Explain its different stages.
- (b) Give the structure of synaptonemal complex and its significance in meiosis.
- (c) What is Bouquet stage ? 5,4,1

7. (a) What is DNA replication ? Describe the details of this process.

(b) Differentiate between nucleotide and nucleoside.

(c) What is transformation ? 5,4,1

Section-E

8. (a) What is Translation ? Describe its different steps in detail.

(b) Write notes on the following :

(i) *mRNA*

(ii) Central Dogma 6,4

9. (a) What is gene regulation ? Explain Inducible Operon System in prokaryotes.

(b) What are the characteristics of Genetic code ? 6,4