

(i) Printed Pages: 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

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Exam. Code : 

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B.A./B.Sc. (General) 1<sup>st</sup> Semester

(2122)

BOTANY

Paper : B (Cell Biology)

Time Allowed : Three Hours]

[Maximum Marks : 36

Note :— Q.No. 1 is compulsory. Attempt only ONE question from each Section. Attempt only FIVE questions in total.

1. (A) Fill in the blanks :

(a) Glucose 6 phosphatase is functional in \_\_\_\_\_ organelle.

(b) Translocation means \_\_\_\_\_.

(c) Which is equational division in meiosis is \_\_\_\_\_.

(d) Wobble hypothesis is \_\_\_\_\_.

(B) Mark the correct answer :

(e) The nuclear envelopes has two membranes which disintegrate at :

(i) Prophase

(ii) Metaphase

(iii) Anaphase

(iv) Telophase

- (f) According to Radial loop model, the scaffold proteins hold :
- (i) Nucleosomes                      (ii) DNA-histone loops  
 (iii) Centromere                      (iv) None of the above
- (g) The grass used in breeding of hexaploid wheat is :
- (i) *Aegilops speltoides*      (ii) *Aegilops squarrosa*  
 (iii) Both (i) & (ii)              (iv) None
- (h) The synapsis during meiosis is formed in :
- (i) Leptotene                      (ii) Zygotene  
 (iii) Pachytene                      (iv) Deplotene

8×1=8

#### SECTION—I

2. Describe with the help of diagrams, the structure of Ribosomes.                      7
3. Write short notes on the following :
- (a) Cisternae
- (b) Resistance of lysosomal enzymes by its own membrane.
- (c) Diagram of Fluid-mosaic model.                      2,2,3

#### SECTION—II

4. Give a brief account of the following :
- (a) Balbiani rings
- (b) Pericentric inversions                      3,4

5. What is Aneuploidy ? Explain its various types with suitable examples. 7

### SECTION—III

6. Describe the process of mitosis with the help of diagrams and mention its significance. 7
7. Give a brief account of the following :
- (a) Nucleosome
  - (b) DNA Replication. 3,4

### SECTION—IV

8. Write short notes on the following :
- (a) Characteristics of Genetic Code.
  - (b) Processed RNA
  - (c) Enzymes of Translation. 3+2+2
9. How the expression of a gene is regulated in Prokaryotes ? Describe the repressible system of gene regulation. 7