

2012
B.A./B.Sc. (General) First Semester
Botany
Paper – B: Cell Biology

Time allowed: 3 Hours

Max. Marks: 36

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. (A) Multiple Choice Questions. Choose the correct answer.

a) Linker protein in nucleosome is

- | | |
|----------------------|---------------------|
| (i) H ₁ | (ii) H ₂ |
| (iii) H ₃ | (iv) H ₄ |

b) Which part of chromosome has repetitive DNA?

- | | |
|----------------|------------------|
| (i) Centromere | (ii) Chromomere |
| (iii) Telomere | (iv) Kinetochore |

c) Giant diplotene bivalent chromosomes are called

- | | |
|-----------------|-----------------|
| (i) Polytene | (ii) Viral |
| (iii) Interband | (iv) Lamp brush |

d) Cytokinesis by cell plate method is found in

- | | |
|--------------------|------------------|
| (i) Bacterial cell | (ii) Animal cell |
| (iii) Plant cell | (iv) Amoeba |

e) Find the purine bases

- | | |
|-------------|------------|
| (i) A & T | (ii) C & T |
| (iii) T & U | (iv) A & G |

f) How many amino acids are coded by 6 codons?

- | | |
|---------|--------|
| (i) 3 | (ii) 4 |
| (iii) 5 | (iv) 6 |

(B) Fill in the blanks:-

g) Peroxisomes are glyoxysomes are type of _____.

h) Anastral spindle is found in _____.

i) Coiled and folded DNA in chromosome is called _____.

(2)

- j) Nucleoside of thymine is called _____.
- k) Number of base pairs in B-DNA turns is _____.
- l) The code for methionine is _____. (12x1)

UNIT – I

- II. Describe the structure and function of cell wall. (6)
- III. Write short notes on:-
- a) Nucleolus
 - b) Oxysome
 - c) Grana (3x2)

UNIT – II

- IV. Classify chromosomes on the basis of:-
- a) Sex
 - b) Position of Centromere
 - c) Number of centromere (3x2)
- V. a) What is polyploidy? Write its types.
- b) Write a note on polytene chromosome. (3+3)

UNIT – III

- VI. a) Describe the structures of DNA as explained by Watson and Crick.
- b) Differentiate between DNA and RNA. (4,2)
- VII. a) Describe the substages of prophase - I of meiosis - I with diagrams.
- b) Which stage is important for evolution? (5,1)

UNIT – IV

- VIII. What is Genetic code? Write its characteristics. (6)
- IX. Write a note on:-
- a) RNA and its types
 - b) Lac operon (2,4)