

BOTANY PAPER-B

(Cell Biology)

Time Allowed : Three Hours

Maximum Marks : 68

Note: (i) Attempt five questions in all. Q. No. 1 is compulsory and select one question from each Unit.

1. (A) Multiple Choice Questions :

- (i) Chromosome number of a hexaploid is 48 then its basic number is:
- (a) 8 (b) 16
(c) 24 (d) 32
- (ii) Stage connecting meiosis I and meiosis II is :
- (a) Interphase I (b) Interphase II
(c) Interkinesis (d) Anaphase I
- (iii) Energy currency of a cell is :
- (a) ADP (b) ATP
(c) GDP (d) NAD
- (iv) Subunits of 80 s Ribosomes are :
- (a) 40 s (b) 60 s
(c) 60 s (d) None of the above
- (v) DNA differs from RNA in having :
- (a) Thymine (b) Adenine
(c) Uracil (d) Guanine

- (vi) Haploid set of chromosome is called :
- | | |
|-------------|-------------------|
| (a) Nucleus | (b) Genome |
| (c) Gene | (d) All the above |

(B) Fill in the Blanks :

- (i) Metacentric chromosomes appear.....shaped in anaphase.
 (ii) A nucleotide consists of sugar, phosphate and a.....
 (iii)is the phenomenon of having more than two sets of chromosomes or genomes.
 (iv)proposed one gene one enzyme hypothesis.
 (v) The pairing of non homologous chromosome is termed as.....
 (vi) Nucleus was discovered by.....in 1831. 12×1=12

UNIT-I

2. Explain :

- | | |
|---|---|
| (a) Fluid Mosaic Model of cell membrane | 4 |
| (b) Types of Plastids. | 2 |

3. Write :

- | | |
|---|---|
| (a) Functions of Endoplasmic reticulum or Golgi apparatus | 3 |
| (b) Structure of Mitochondrion. | 3 |

UNIT-II

4. Write notes on :

- | | |
|--------------------------|---|
| (a) Polytene Chromosomes | 3 |
| (b) Types of Aneuploids. | 3 |

5. What are chromosomal alterations ? Discuss types and significance of Deletions or Inversions. 6

UNIT-III

6. Describe the process of DNA replicaion. 6

7. Write notes on :

- | | |
|---------------------------|---|
| (a) Prophase I of Meiosis | 3 |
| (b) Nucleosome. | 3 |

UNIT-IV

8. Explain only diagrammatically an operon model in Prokaryotes for regulation of gene activity. 6

9. Write notes on any two :

- | | |
|-----------------------|-----|
| (a) Genetic Code | |
| (b) Transcription | |
| (c) Wobble Hypothesis | 3,3 |