

AS-1432

B.Sc. Part—II (Semester—IV) Examination**BOTANY****(Cell Biology, Genetics and Biochemistry)**

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) There are seven questions in all.

(2) Question No. 1 is compulsory and carries 8 marks.

(3) Question Nos. 2 to 7 carry equal marks.

(4) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) The "cell" is discovered by _____ $\frac{1}{2}$ (ii) Father of Genetics is _____ $\frac{1}{2}$ (iii) The site for protein synthesis is _____ $\frac{1}{2}$ (iv) _____ chromosome appears "V" shaped in anaphase. $\frac{1}{2}$

(B) Choose the correct alternative (MCQ) :

(v) Mendel performed experiments on _____

(a) Pigeon pea

(b) Cow pea

(c) Garden pea

(d) Chick pea $\frac{1}{2}$

(vi) The enzymes having same activities and almost similar molecular structures are _____

(a) Isoenzymes

(b) Co-enzymes

(c) Meta-enzymes

(d) None of these $\frac{1}{2}$

(vii) The gene which inhibits the expression of another non-allelic gene is called _____

(a) Hypostatic

(b) Recessive

(c) Epistatic

(d) Dominant $\frac{1}{2}$ (viii) F_1 particles are found in _____

(a) Chloroplast

(b) Ribosomes

(c) Golgi complex

(d) Mitochondria $\frac{1}{2}$

- (C) Answer in **one** sentence :
- (i) Define Phenotype. 1
 - (ii) What is Polyploidy ? 1
 - (iii) What is Dihybrid Cross ? 1
 - (iv) What are Enzymes ? 1
2. Explain :
- (a) Fluid mosaic model of plasma membrane. 4
 - (b) Prokaryotic cell. 4
 - (c) Nucleolus. 4
- OR**
- (d) Structure of chloroplast. 4
 - (e) Functions of plasma membrane. 4
 - (f) Structure of cell wall. 4
3. Describe :
- (g) Zygotene. 4
 - (h) Structure of Endoplasmic reticulum. 4
 - (i) Function of mitochondria. 4
- OR**
- (j) Pachytene. 4
 - (k) Structure of mitochondria. 4
 - (l) Function of ribosomes. 4
4. Explain :
- (m) Translocations. 6
 - (n) Structure of chromosome. 6
- OR**
- (o) Duplications. 6
 - (p) Aneuploidy. 6

5. Explain Law of Independent Assortment with suitable example. 12

OR

Explain :

(q) Complementary factor. 6

(r) Incomplete dominance with suitable example. 6

6. Comment on :

(s) Chemical mutagens. 4

(t) Mitochondrial DNA. 4

(u) Copy-choice theory of crossing over. 4

OR

(v) Physical mutagens. 4

(w) Complete linkage. 4

(x) Chromosome theory of linkage. 4

7. Write on :

(a) Characteristics of Enzyme (any **two**). 4

(b) Concept of holoenzymes. 4

(c) Disaccharides. 4

OR

(d) Lock and Key model. 4

(e) Coenzymes and cofactors. 4

(f) Monosaccharides. 4

