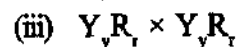
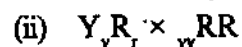
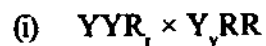


In pea plant with yellow seed coat is dominant over green seed coat. Round seed shape is dominant over wrinkled seeds. What phenotypic ratio would be obtained in the following crosses :



6. Comment on :

(s) Complete linkage 4

(t) Double crossing over 4

(u) Transition type of Gene mutation. 4

OR

(v) In-complete linkage. 4

(w) Chloroplast DNA [^{CP}DNA]. 4

(x) Transversion type of Gene mutation. 4

7. Comment on :

(y) Nomenclature of enzymes 4

(z) Structure and Functions of Starch 4

(a) Lock and key model of Enzyme action. 4

OR

(b) Characters of Enzyme (any TWO) 4

(c) Co-enzyme 4

(d) Structure and functions of glucose. 4

**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) A type of cell division in which the number of chromosomes in daughter cell is reduced to half than its parent cell is known as _____ .
1/2(ii) Alternative forms of a gene are known as _____ .
1/2(iii) The physical agents used for induction of mutations are known as _____ .
1/2(iv) Lactose is a disaccharides of glucose and _____ .
1/2

(B) Choose the correct alternatives [MCQs] :—

(v) In prophase-I of meiosis formation of Chiasma occurs in _____ .
1/2

(a) Leptotene

- (b) Zygotene
- (c) Pachytene
- (d) Diplotene
- (vi) A chromosome having centromere at the center of chromatid is known as : $\frac{1}{2}$
 - (a) Metacentric
 - (b) Sub metacentric
 - (c) Telocentric
 - (d) Acrocentric.
- (vii) Recombination of genes as a result of exchange of non sister chromatid parts between homologous chromosome is known as : $\frac{1}{2}$
 - (a) Linkage
 - (b) Deletion
 - (c) Duplication
 - (d) Crossing over.
- (viii) In a cross when character of one parent appears in F. Hybrid, such character is known as : $\frac{1}{2}$
 - (a) Recessive
 - (b) Dominant
 - (c) Incomplete dominant
 - (d) Codominant
- (C) Answer in ONE sentence :
 - (ix) Define Anaphase 1
 - (x) Define Polyploidy 1
 - (xi) Define Gene 1
 - (xii) Define Co-enzymes. 1

- 2. Explain :
 - (a) Structure and functions of cell wall 4
 - (b) Functions of plasmamembrane 4
 - (c) Structure of chloroplast. 4

OR

 - (d) Nucleolus 4
 - (e) Prokaryotic cell 4
 - (f) Functions of chloroplast. 4
- 3. Explain :
 - (g) Structure and functions of Mitochondria 6
 - (h) Functions of Vacuole and Peroxysome. 6

OR

 - (i) Structure and functions of Endoplasmic reticulum 6
 - (j) Zygotene and Pachytene. 6
- 4. Comment on :
 - (k) Centromere 4
 - (l) Deletion 4
 - (m) Aneuploidy. 4

OR

 - (n) Structure of Chromosome 4
 - (o) Translocation 4
 - (p) Auto-polyploidy. 4
- 5. Explain :
 - (q) In-complete dominance with suitable example 6
 - (r) Complementary factor with suitable example. 6

OR