(q) Procedure of mass selection. 4

(r) Pedigree backcross method. 4

4. What is polyploidy ? Mention different polyploids and comment on their evolution and achievements through polyploidy breeding. 12

OR

Discuss in brief :—

(a) Breeding for disease resistance. 6

(b) Crop Research Institutes in India. 6

5. Explain :—

(a) Genetical significance of male sterility. 4

(b) Seed quality concept. 4

(c) Methods of maintenance of Genetic purity. 4

OR

(p) Factors affecting seed set. 4

(q) Self incompatibility. 4

(r) Classification of crop plants in relation to mode of reproduction. 4

AR – 518

Second Semester B. Sc. (Part – I) Examination

SEED TECHNOLOGY

(Plant Breeding Methods, For Crop Improvement and Seed Production)

P. Pages : 5

Time : Three Hours] [Max. Marks : 80

Note : (1) There are **Seven** questions in all.
(2) Questions 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) ——— means a stock of highly pure seed of a variety in the custody of plant breeder. $\frac{1}{2}$

(ii) In ——— pollination only one plant is involved. $\frac{1}{2}$

(iii) A double cross is a first generation hybrid between two ——— crosses. $\frac{1}{2}$

(iv) ——— line is a relatively true breeding strain. $\frac{1}{2}$

(B) Choose correct alternative.

(v) True breeding for a specific heriditary character is called

(a) Heterozygous (b) Homozygous

(c) Both (d) None of the above $\frac{1}{2}$

(vi) The distance to be maintained between the seed crop and the contaminant is called

(a) Safe distance (b) Isolation distance

(c) Linear distance (d) None of the above $\frac{1}{2}$

(vii) Clonal selection is found in

(a) Rice (b) Maize

(c) Sugarcane (d) Wheat $\frac{1}{2}$

(viii) Polyploidy shows ——— set of chromosomes.

(a) n (b) 2n

(c) 4n (d) None of the above. $\frac{1}{2}$

(C) Answer the following questions in **one** sentence.

(ix) What is synthetic seed ? 1

(x) What is mutation ? 1

(xi) Mentioned two plant varieties improved by polyploidy. 1

(xii) Define Heterosis. 1

2. Discuss in detail pureline selection. Comment on its procedure, field technique and advantages and limitations. 12

OR

Discuss in brief :—

(a) Achievements of clonal selection. 6

(b) Acclamatization. 6

3. Explain :—

(a) Advantages and limitations of hybridization. 4

(b) Double cross hybrids. 4

(c) Classification of mutation. 4

OR

(p) Achievements through induced mutations. 4

6. Comment on :—

(a) Self incompatibility. 4

(b) Seed village concept. 4

(c) Hybrid seed production by emasculation. 4

OR

(m) Factors affecting seed production. 4

(n) Improvement of pollination in seed production of legumes. 4

(o) Insect pest and disease incidence. 4

7. Explain :—

(a) Harvesting and threshing of Rice. 4

(b) Seed plot technique of potato. 4

(c) Agronomic management in Groundnut. 4

OR

(m) Seed production procedure in mustard. 4

(n) Production of hybrid potato seeds. 4

(o) Harvesting and threshing of Bajara. 4