

M.Sc. (Ag.) Examination, 2016
Semester-III
Genetics and Plant Breeding
Course No.: GPB-515
(Maintenance Breeding, Concepts of
Variety Release and Seed Production)

Time: Three Hours

Full Marks: 50

Questions are of value or as indicated in the margin

Part-I

- 1. State True (T) or False (F) in respect to the following statements :** **0.5×4=2.0**
 - i. Paddy is the unmilled rice seed in the husk.
 - ii. Better seeds are obtained by proper storage.
 - iii. Moisture content of seed is the factor which has profound effect on its life.
 - iv. The Protection of Plant Varieties and Farmers' Rights Act was established in 2005.
- 2. Fill up the blanks of the following :** **0.5×4=2.0**
 - i. _____ tag is used for breeder seed.
 - ii. In pure line wheat seed production _____ isolation distance is maintained
 - iii. _____ is the objectionable weeds in mustard field.
 - iv. The 'Indian Patent Act' came into force in _____.
- 3. Answer the following questions as per direction :** **2×3=6.0**
 - i. Write in full of the abbreviation : PVP, WTO
 - ii. Distinguish between cultivar and variety
 - iii. Define Carry-over seeds

Part - II

Answer any four questions from the following:

- 4. Define seed deterioration. What are the causes of seed deterioration? Write about prevention of seed deterioration. Briefly discuss visible expressions of seed deterioration.** **1+4+3+2=10**
- 5. Explain in brief 'seed to seed' cycle in seed production. Write the steps to be taken during seed production in the field. Explain the meaning of isolation in seed production. How is isolation achieved in seed plots?** **2+3+2+3=10**
- 6. What are the botanical types of pure seed in agriculture and horticulture? List the stages of production of improved seed. Write about truthful labeled seed. Describe in brief the methods of maintenance of breeder seed of established variety.** **2+2+2+4=10**
- 7. What is the aim of field inspection? When should the field inspection be made for the production of improved seed? Write isolation distance and male : female ratio in the hybrid seed production in maize, rice, sorghum and cotton. What is pollen shedder?** **2+2+4+2=10**

8. Write short notes on following : (*any four*) 2.5×4=10
- I. Roguing
 - II. Farmers' right
 - III. DUS testing
 - IV. Essentially derived variety
 - V. Certified seed production in rape & mustard
9. Differentiate between followings : (*any four*) 2.5×4=10
- I. Seed viability & Seed deterioration
 - II. Orthodox and recalcitrant seeds
 - III. Spatial isolation and temporal isolation
 - IV. Genetic purity and Physical purity
 - V. Long and Short term storage
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