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**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY,
ODISHA, GUNUPUR
(GIET UNIVERSITY)**

B. Sc. (Ag.) (Fourth Semester) Examinations, April - 2025

SST- 221 - Principles of Seed Technology

Time: 2 hrs

Maximum : 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure. (0.5 x 10 = 5 Marks)

- a. _____ is done to protect the seeds against diseases, pests, and storage losses.
- b. In order to produce certified seed of a particular variety we will have to procure _____ seed of that variety to take up sowing.
- c. Removal of tassel from the female parent in hybrid seed production in maize is known as _____.
- d. In hybrid seed production _____ line is harvested first.
- e. _____ chemical is used in chemical drying of seed.
- f. The maintainer line used in hybrid seed production is known as _____ line.
- g. Tetrazolium test is used to study _____ of seed.
- h. Triers are used for _____.
- i. In general for every _____% decrease in moisture, the store potential of the seed doubles .
- j. Indicator type silica gel is _____ in colour.

Q. 2. Define (or) Explain the following in one or two sentences. (1 x 5 = 5 Marks)

- a. Tempering
- b. Orthodox seed
- c. 'B' line in hybrid seed production
- d. Single cross hybrid
- e. Grow out test

Q3. Match the following (0.5 x 10 = 5 Marks)

Column – A

Column – B

- | | |
|------------------------|--|
| (a) Gravity Separators | (i) For synchronization of flowering of male and female parent |
| (b) Isolation distance | (ii) Used by farmers |
| (c) Staggered sowing | (iii) Can not be stored for longer period |
| (d) A line | (iv) Cheap method |
| (e) Field Inspection | (v) Sorted seeds based on size, shape, and weight |
| (f) Certified seeds | (vi) Restricts contamination by foreign pollens |
| (g) Harvesting | (vii) Seed certification officer |
| (h) Recalcitrant seeds | (viii) Global Marketing |
| (i) Sun drying | (ix) Male sterile line |
| (j) WTO | (x) Done at Physiological maturity stage |

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- a. Silica gel is used in mechanical drying.
- b. Rate of drying the seed does not depend upon depth of spread of seed.
- c. Seed testing is required to assess the seed quality attributes of the seed lots.
- d. The Seed Testing Laboratory at University of Agricultural Sciences, Bangalore has been notified as the Central Seed Testing Laboratory.
- e. Storage fungi, mostly belong to the genera *Aspergillus* and *Penicillium*.
- f. “Organic seed” means seed produced by raising a crop with application of chemical fertilizer.
- g. Working sample is the sub-sample of the submitted sample which is used for various quality tests.
- h. For cereals in ordinary storage conditions for 12-18 months the seeds should be dried to 10 – 12 % moisture content.
- i. For every 30° F reduction in temperature it doubles the life span of the seed.
- j. Viability test determines whether the seed is alive and capable of germinating under favourable conditions or not.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

5. What is seed processing? Describe different steps involved in seed Processing.
6. Describe different safeguard measures which are to be taken to maintain the genetic purity ?
7. What is the purpose of seed certification? Describe in brief the process of seed certification.
8. Describe in brief the organic seed production practices.
9. What are the different types of seed samples? Describe different triers used in seed sampling.
10. What is seed drying? Describe different methods of seed drying.

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