

EASTERN UNIVERSITY, SRILANKA

Final Year First Semester Examination in Agriculture 2005/2006

AGB 4111 Advanced Seed Physiology & Technology

Answer All Questions

Time: 02 Hours

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- Q1. a) You are expected to store the following seeds to retain viability
Beans, Cowpea, Coffee, Cocoa, Green gram, Citrus, Jack, Okra, Tamarind,
Tomato
- Give the botanical name of the above crops.
 - Classify the seeds based on the storage requirement and describe the conditions required for storage.
- b) i. Why the seeds of Indian Lotus is considered importance as far as its lifespan is concerned? And the reasons.
- Give the botanical name of this species.
- Q2. a) Give the Principle underlining the Tetrazolium Topographical Test (TTT).
- Show by means of clear diagrams different types of germinable and non-germinable seeds of soybean based on staining pattern after TTT. (All possible types).
 - What are the advantages of this test?
- Q3. a) You are carrying out a germination test of a cowpea seed lot to report on its viability
- Describe the procedure of this test.
 - What are the different kinds of seedlings and seeds that can be seen at the completion of the test.
 - Describe the normal seedling (NSL) and abnormal seedlings (ABSL) that are obtained in this test, with diagrams.

d) Calculate the viability of the cowpea seed lot from the following results.

	Germinated		Other(not germinated)	Total
	NSL	ABSL		
Rep.I	16	4	5	25
Rep.II	15	5	5	25
Rep.III	16	5	6	25
Rep.IV	18	2	5	25

(4 samples of 25 seeds were drawn from the seeds lot for this test).

Q4. Describe the procedure in detail you have carried out in your practical class to identify the seed-borne pathogens of okra seeds.

Q5. In an experiment 3 samples (S) of 100 seeds from two seed lots A&B are drawn at random and used. The results obtained are as follows.

	No of seedlings emerged					
	After 5 days			After 8 days		
	S I	S II	S III	S I	S II	S III
Seed lot A	50	55	60	75	80	85
Seed lot B	75	80	85	90	96	98

- i) Determine the mean emergence rate of each seed lot
- ii) What inference you get from these results?