



GIET UNIVERSITY, GUNUPUR – 765022

B. Sc (AG) (Sixth Semester) Examinations, June - 2021

EC-361: COMMERCIAL PLANT BREEDING

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)

- The are the male reproductive organs in rice flower.
- Pollen grains are shed from the anthers and fall onto the feathery.....
- Cotton is a pollinated crop.
- Isolation distance for foundation seed of rice is m.
- Sorghum is classified predominantly as a pollinated crop.
- Breeder Seed is produced from Seed.
- Desired improved variety of economically useful crops are produced by.....
- Tetrazolium (TZ) testing is a method for the evaluation of seed.....
- The variation in *in vitro* culture is called as.....
- The colour of the tag of certified seed is

Q. 2. Define (or) Explain the following in one or two sentences.

(1 x 5 = 5 Marks)

- Anthesis
- Apomixis
- Viability
- Scarification
- Monoecious

Q3. Choose the most appropriate answer from the following

(0.5 x 10 = 5 Marks)

- Which of the following is cultured to obtain haploid plants?

(i) Embryo	(ii) Nucleus
(iii) Entire anther	(iv) Apical bud
- Certification is not required for

(i) Breeder seed	(ii) Certified seed
(iii) Foundation seed	(iv) None of the above
- Seed certification requires

(i) An improved variety	(ii) Genetic purity
(iii) Physical purity	(iv) All of the above
- The recommended ratio of male rows to female rows is in hybrid bajra production

(i) 1 to 2	(ii) 2 to 4
(iii) 3 to 6	(iv) 4 to 8
- Which of the following vectors is used in crop improvement and crop management?

(i) Agrobacterium	(ii) Plasmid
(iii) Cosmid	(iv) Phasmid
- A condition in which pollination and fertilization take place in an unopened flower is termed as

(i) Homogamy	(ii) Apogamy
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- (iii) Cleistogamy (iv) Polygamy
- g Removal of off type plants from a seed field is termed as
 (i) Weeding (ii) Rouging
 (iii) Hoeing (iv) All of above
- h Which type of sterility is exploited in hybrid seed production?
 (i) Genetic male sterility (ii) Cytoplasmic male sterility
 (iii) Cytoplasmic genetic male sterility (iv) None of above
- i The male sterile line in a cross to produce hybrid seed is known as
 (i) A line (ii) B line
 (iii) C line (iv) R line
- j Headquarters of the Union for the Protection of New Plant varieties is in
 (i) USA (ii) Switzerland
 (iii) Denmark (iv) Thailand

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- Heterosis is expressed in the first generation only.
- Rice, being a strictly self-pollinated crop, requires the use of a male sterility system to develop commercial rice hybrids.
- Foundation seed is the progeny of Nucleus Seed.
- A three-way hybrid is made by crossing two single-cross hybrids.
- White coloured tag is for foundation Seed.
- Development of fruit without fertilization is known as parthenocarpy.
- A seed having a well-developed endosperm is called as globulose seed.
- The isolation distance for foundation seed production of cotton hybrid is 100 meters.
- The Indian seed act was enacted in the year 1966.
- “AGMARK” is related to distribution pattern of products.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

- In brief write down the three line system of hybrid seed production in rice.
- What do you mean by Intellectual property right? Discuss main objectives of protection of plant varieties and farmer rights act.
- Define male sterility. Write down the generalized scheme of hybrid seed production using A/B/R lines.
- Define seed quality. Discuss different parameters of seed quality.
- Define seed? Describe the production techniques for hybrid seed of pigeon pea.
- What is haploid plant? Mention the purpose of production of haploid plant in modern cultivation? Can a haploid plant produce viable seeds?

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