Reg. No.										

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Sc. (Ag.) (Fifth Semester - Regular) Examinations, November – 2025

PBG-314 - Crop Improvement-I (*Kharif* Crops)

Time: 2 hrs | Maximum: 50 Marks

PART – A

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

a. Progenitor of pigeonpea is _____ .

b. Male inflorescence in maize is known as _____.

c. Dr. N.G.P. Rao is known as father of _____ .

d. International Crop Research Institute for Semi arid Tropics (ICRISAT) is situated at _____.

e. Soybean is a _____pollinated crop.

f. According to monophyletic origin of rice both Asian rice and African rice arose from a common parent i.e. _____ .

g. Botanical name of blackgram is _____.

h. *Gossypium arboreum* and _____ comes under Asiatic cotton.

i. The first CGMS line in bajra is _____.

j. Directorate of Soybean Research is situated at _____. .

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

a. Inbreeding depression

b. Double cross hybrid

c. 'B' line in hybrid seed production.

d. Isolation distance

e. Primary gene pool

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

	Column – A		Column – B
(a)	*Sorghum bicolor*	(i)	Cotton variety
(b)	Groundnut	(ii)	Self pollinated crop
(c)	Blackgram	(iii)	Diploid cotton
(d)	Centre of origin of green gram	(iv)	Soybean variety
(e)	Pureline selection	(v)	*Arachis hypogaea*
(f)	Mass selection	(vi)	Tetraploid Cotton
(g)	MACS-1460	(vii)	India
(h)	*Gossypium hirsutum*	(viii)	Cross pollinated crop
(i)	*Gossypium arboreum*	(ix)	Jowar
(j)	BS 30	(x)	Fabaceae

Q4. Write True or False against each statement **(0.5 x 10 = 5 Marks)**

a. Chromosome number of soybean 2n=40

b. Synthetics varieties are produced by crossing in isolation a number of inbred lines which are already tested for their GCA.

c. In cotton crop the fruiting branches are otherwise known as monopodial branches.

d. Clonal selection is generally followed in vegetatively propagated crops.

e. Reduced anthesis-silking interval is one of the morphological traits associated with drought tolerance in maize crop.

f. YMV is a serious disease in greengram and blackgram.

g. In cotton only one carpel is present in gynoecium.

h. African ragi has got short fingers.

i. In groundnut flower, extension of calyx is called as hypanthium.

j. A double cross hybrid is the progeny from a cross between one inbred and single cross.

PART – B

Attempt *ANY FIVE* questions. All question carries equal marks **(6 x 5 = 30 Marks)**

5. Describe different kinds of germplasm.

6. Write a note on commercial hybrid seed production in maize.

7. Describe different breeding objectives in rice.

8. Explain gene for gene hypothesis with example.

9. Write notes on breeding methods in sorghum crop.

10. Describe the anthesis behaviour and pod formation in groundnut crop.

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