



**GIET UNIVERSITY, GUNUPUR – 765022**

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

**PB-364 – Crop Improvement II (Rabi crops)**

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)**

- Source of dwarfing gene in wheat \_\_\_\_\_
- Primary centre of origin of Groundnut is \_\_\_\_\_
- Dalang Maiden at Lahaul-Spiti, Himachal Pradesh is an important off season nursery of \_\_\_\_\_ crop
- Scientific name of barley is \_\_\_\_\_
- The only cereal containing a globulin or legume-like protein, avenalin is \_\_\_\_\_ crop
- The wild progenitor of chickpea is \_\_\_\_\_
- Pea is strictly self-pollinated in nature due to \_\_\_\_\_ mechanisms
- Low erucic acid and low glucosinolate are called \_\_\_\_\_ varieties,
- The scientific name of safflower is \_\_\_\_\_
- \_\_\_\_\_ crop is important commercial crop used for large scale production of sugar in the world.

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

**(1 x 5 = 5 Marks)**

- Synthetic hexaploid wheat
- Nobilization of sugarcane
- Pseudo-self-compatibility
- U'S triangle
- Speed breeding

**Q3. Match the following**

**(0.5 x 10 = 5 Marks)**

Column – A		Column – B	
(a)	Foxtail millet	(i)	<i>Lens culinaris</i>
(b)	Napiergrass	(ii)	<i>Helianthus annuus</i>
(c)	Alfalfa	(iii)	<i>Coriandrum sativum</i>
(d)	Berseem	(iv)	<i>Plantago ovate</i>
(e)	lentil	(v)	<i>Pennisetum purpureum</i>
(f)	Sunflower	(vi)	<i>Medicago spp</i>
(g)	Fenugreek	(vii)	<i>Setaria italic</i>
(h)	Fennel	(viii)	<i>Trigonella foenum graecum</i>
(i)	Isabgol	(ix)	<i>Foeniculum vulgare</i>
(j)	Coriander	(x)	<i>Trifolium alexandrium</i>

**Q4. Write True or False against each statement**

**(0.5 x 10 = 5 Marks)**

- a. *T. timopheevii* is the source of cytoplasmic male sterility (CMS) gene in oat.
- b. *T. turgidum*, is valued for its high gluten content and widely used for pasta, semolina and bread flours.
- c. Barley is cross pollinated crop.
- d. A oat variety Kent is an introduction from USA.
- e. The *desi* types of chickpea, also known as “macrosperma” and are characterised by large pods.
- f. Pusa jaykisan is a somoclonal variety of field pea.
- g. First hybrid sunflower is BSH 1.
- h. The inflorescence of safflower called capitulum or simply a head.
- i. The inflorescence of sugarcane is consists of an open branched panicle known as the fuzz.
- j. Self incompatibility is common in many forage species.

**PART – B**

**Attempt ANY FIVE questions. All question carries equal marks**

**(6 x 5 = 30 Marks)**

5. Write the botanical name, somatic chromosome number and center of origin of three important cereal crops? Write the breeding objectives of wheat crops?
6. Describe different kinds of species of sugarcane and breeding objective of sugarcane?
7. Breeding forage crops is more difficult than breeding cultivated crops, Justify the statement? Differentiate between kabuli and deshi type chickpea?
8. Explain the classification and quality breeding of rapeseed and mustard and mention four different species of the genus *Triticum*?
9. Describe about the breeding procedure of barley and mention four important varieties of barley?
10. Describe about the papilionaceous flowers and write the floral biology of sunflower?

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