Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Agriculture
End Sem Examination Dec 2024
AG3CO38 Crop Improvement -I (Kharif Crops)

Programme: B.Sc. (Hons.) Branch/Specialisation: Agriculture

Duration: 3 Hrs. **Maximum Marks: 50**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

			Marks	BL	PO	CO	PSO
Q.1	i.	N. I. Vavilov for the first time given concept of- (a) Mutation (b) Centre of Origin (c) Segregation (d) Gene	**1**	1	1	1	1
	ii.	Centre of origin of chickpea is- (a) China (b) India (c) Russia (d) America	**1**	1	1	1	1
	iii.	Qualitative traits are governed by- (a) Few genes (b) Many genes (c) Environmental factors (d) All of these	**1**	2	1	2	1
	iv.	Scientific name of lentil is- (a) Lens ervioda (b) Lens orientalis (c) Lens nigriceus (d) Lens culinaris	**1**	1	1	2	2
	v.	Gene for gene hypothesis was given by- (a) Mendel (b) Flor (c) Vander plank (d) Bateson	**1**	1	1	3	2
	vi.	Progeny of nucleus seed is- (a) Certified seed (b) Registered seed (c) Foundation seed (d) Breeder seed	**1**	2	1	3	2
	vii.	A line is a- (a) Male fertile (b) Male sterile (c) Inbred (d) Hybrid	**1**	2	1	4	2

	viii.	B line is a- (a) Male fertile (b) Male sterile (c) Composite (d) Double Hybrid	**1**	2	1	4	2
	ix.	Ideotype is concerned with- (a) Plant geometry (b) Hybrid (c) Plant height (d) All of these	**1**	2	1	5	2
	x.	Synchronous maturity refers maturity at- (a) Different period (b) 15 days Interval (c) One time (d) All of these	**1**	2	1	5	2
Q.2	i.	Write names of two wild relatives of lentil.	**2**	2	1	1	1
	ii.	Describe the main eight centre of origin along with examples.	**6**	2	1	1	1
OR	iii.	Write short note on gene bank of wheat, rice, potato, cotton, pulses, oilseed crops.	**6**	2	1	1	1
Q.3		Attempt any two:					
	i.	Write about important concepts promoting self-pollination.	**4**	2	1	2	1
	ii.	Explain genetics of qualitative and quantitative traits in brief.	**4**	2	1	2	1
	iii.	Describe in brief about the mechanism promoting cross pollination.	**4**	3	1	2	2
Q.4	i.	Write major breeding objectives.	**2**	2	1	3	2
	ii.	Describe in brief the steps for the development of hybrid and varieties.	**6**	3	1	3	2
OR	iii.	Explain DUS, characterization using suitable example.	**6**	3	1	3	1
Q.5	i.	What do you understand by intra-specific and inter-specific hybrids?	**2**	2	1	4	2
	ii.	Explain A line, B line, R line and outline the hybrid seed production.	**6**	3	1	4	2
OR	iii.	Describe hybrid production technology in maize.	**6**	3	1	4	2

Q.6		Attempt any two:					
	i.	Briefly explain the ideotypes using suitable example.	**4**	3	1	5	1
	ii.	Explain suitable varieties for climate resilient crops.	**4**	2	1	5	1
	iii.	Describe ideotypes characteristics of pigeonpea.	**4**	2	1	5	1

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Marking Scheme
AG3CO38 - Crop Improvement-I (Kharif Crops)

Q.1	i)	(b). Centre of Origin	**1**
	ii)	(b). India	**1**
	iii)	(a). Few genes	**1**
	iv)	(d). Lens cullinaris	**1**
	v)	(b). Flor	**1**
	vi)	(d). Breeder seed	**1**
	vii)	(b). Male Sterile	**1**
	viii	(a). Male Fertile	**1**
	ix)	(a). Plant geometry	**1**
	x)	(c). One time	**1**
Q.2	i.	Write names of two wild relatives of lentil 1+1	**2**
	ii.	Describe the main eight centre of origin along with examples 3+3	**6**
OR	iii.	gene bank of wheat, rice, potato, cotton, pulses, oilseed crops **1 mark each**	**6**
Q.3		Attempt any three	
	i.	Write important concepts promoting self-pollination. **One mark each**	**4**
	ii.	Explain genetics of qualitative and quantitative traits in brief. **One mark each**	**4**
	iii.	Describe in brief the mechanism promoting cross pollination **One mark each**	**4**
Q.4	i.	Write major breeding objectives **One mark each**	**2**
	ii.	Describe in brief the steps for the development of hybrid and varieties **3+3**	**6**
OR	iii.	Explain DUS, using suitable example. **2 marks each**	**6**
Q.5	i.	What do you understand by intra-specific and inter-specific hybrids **1 mark each**	**2**
	ii.	Explain A line, 1M B line, 1M R line 1M outline the hybrid seed production. 3M	**6**
OR	iii.	Describe hybrid production technology in maize **2 marks for each step**	**6**
Q.6		Attempt any two	
	i.	Briefly explain the ideotypes using suitable example. **2 marks each**	**4**
	ii.	Explain suitable varieties for climate resilient crops. **1 mark each**	**4**
	iii.	Describe ideotypes characteristics of pigeon pea. **Ideotype 1 mark, characteristics 3 marks**	**4**