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

Enrollment No.....

Faculty of Agriculture

End Sem (Even) Examination May-2022

AG3CO44

Protected Cultivation & Secondary Agriculture

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.

Q.1 i. Greenhouse is the most practical method of achieving the objectives of protected agriculture by: **1**

(a) The modification of natural environment
(b) Use of sound engineering principles
(c) Achieves optimum plant growth and yields
(d) All of these

ii. The textbook entitled, green house: Science and Technology. 2016 has been authored by: **1**

(a) Kothari S (b) S. C. Kaushic
(c) A. N. Mathur (d) All of these

iii. The textbook entitled, Green House Technology- application and practice, 2006 has been authored by: **1**

(a) Sharma A (b) V. M. Salokhe
(c) Both (a) and (b) (d) None of these

iv. The phenomenon of increase in the ambient temperature, due to the formation of the blanket of carbon dioxide is known as: **1**

(a) Greenhouse effect (b) Cooling effect
(c) Heating effect (d) None of these

v. The textbook entitled, Principles of Agricultural Engineering, Vol. I. 2012 has been authored by: **1**

(a) Michael A.M. (b) T. P. Ojha.
(c) Both (a) and (b) (d) None of these

P.T.O.

vi. Irrigation systems used in greenhouses are: **1**
(a) Easier than field irrigation
(b) Difficult than field irrigation
(c) Cannot say
(d) None of these

vii. Cost estimation and economic analysis deals with important engineering properties such as: **1**
(a) Physical properties of cereals, pulses and oilseeds
(b) Thermal properties of cereals, pulses and oilseeds
(c) Aero & hydrodynamic properties of cereals, pulses and oilseeds
(d) All of these

viii. PHT (Post Harvest Technology) implies: **1**
(a) Parboiling of rice (b) Cotyledon splitting for dal making
(c) Wheat flour making (d) All of these

ix. EMC stands for: **1**
(a) Estimated Moisture Content
(b) Essential Moisture Content
(c) Both (a) and (b)
(d) None of these

x. Commercial grain dryer includes: **1**
(a) Deep bed dryer and flatbed dryer
(b) Tray dryer and fluidized bed dryer
(c) Recirculatory dryer and solar dryer
(d) All of these

Q.2 i. Define greenhouse technology. **1**
ii. Enumerate different types of greenhouses. **2**
iii. Describe various types of greenhouses with examples. **5**
OR iv. Prepare a plan to establish one model green house with their prerequisites. **5**

Q.3 i. Make a simple design of greenhouse. **1**
ii. List greenhouse equipment's, materials which are easily available. **3**
iii. How can you prepare a low cost greenhouses? **4**

OR iv. Briefly describe the Design Criteria of green house for cooling and heating purposes. **4**

Q.4 i. Explain the irrigation systems used in the green houses. **2**
ii. Describe passive solar green house and hot air greenhouse systems. **6**
OR iii. Describe the various procedures and advantages of greenhouse drying. Is there any disadvantages of the greenhouse drying? If yes then enumerate at least four major disadvantages. **6**

Q.5 i. Enumerate the rules of watering. **2**
ii. Briefly describe overhead sprinklers. **2**
iii. Describe boom watering, drip irrigation with diagram. **4**
OR iv. Describe water and rock storage in details. **4**

Q.6 Attempt any two:
i. What do you understand by drying theory? What are the types of drying rate periods? Describe mechanism of drying process. **4**
ii. Describe thin layer drying and deep bed drying with diagram. **4**
iii. What do you mean by Baffle dryer? Describe mixing type baffle dryer and recirculatory batch dryer. **4**

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Marking Scheme

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Q.1	i.	Greenhouse is the most practical method of achieving the objectives of protected agriculture by: (d) All of these		**1**
	ii.	The textbook entitled, green house: Science and Technology. 2016 has been authored by: (d) All of these		**1**
	iii.	The textbook entitled, Green House Technology- application and practice, 2006 has been authored by: (c) Both (a) and (b)		**1**
	iv.	The phenomenon of increase in the ambient temperature, due to the formation of the blanket of carbon dioxide is known as: (a) Greenhouse effect		**1**
	v.	The textbook entitled, Principles of Agricultural Engineering, Vol. I. 2012 has been authored by: (c) Both (a) and (b)		**1**
	vi.	Irrigation systems used in greenhouses are: (a) Easier than field irrigation		**1**
	vii.	Cost estimation and economic analysis deals with important engineering properties such as: (d) All of these		**1**
	viii.	PHT (Post Harvest Technology) implies: (d) All of these		**1**
	ix.	EMC stands for: (d) None of these		**1**
	x.	Commercial grain dryer includes: (d) All of these		**1**
Q.2	i.	Define greenhouse technology.	1 Mark	**1**
	ii.	Two types of greenhouses.	1 Mark each (1 Mark*2)	**2**
	iii.	5 Types of greenhouses with examples.	1 Mark each (1 Mark*5)	**5**
OR	iv.	As per the explanation	5 Marks	**5**
Q.3	i.	Simple design of greenhouse.	1 Mark	**1**
	ii.	5 List greenhouse equipment's, materials which are easily available	3 Marks	**3**
	iii.	As per the explanation	4 Marks	**4**
OR	iv.	As per the explanation	4 Marks	**4**
Q.4	i.	Irrigation systems used in the green houses	2 Marks	**2**
	ii.	Describe passive solar green house Hot air greenhouse systems.	3 Marks 3 Marks	**6**
OR	iii.	Describe the various procedures Advantages of greenhouse drying. Is there any disadvantages of the greenhouse drying If yes then enumerate at least four major disadvantages.	1 Mark 1 Mark 2 Marks 2 Marks	**6**
Q.5	i.	Rules of watering.	2 Marks	**2**
	ii.	Describe overhead sprinklers.	2 Marks	**2**
	iii.	Describe boom watering Drip irrigation with diagram.	2 Marks 2 Marks	**4**
OR	iv.	Describe water Rock storage in details.	2 Marks 2 Marks	**4**
Q.6		Attempt any two:		
	i.	What do you understand by drying theory What are the types of drying rate periods Describe mechanism of drying process.	2 Marks 1 Mark 1 Mark	**4**
	ii.	Describe thin layer drying Deep bed drying with diagram.	2 Marks 2 Marks	**4**
	iii.	What do you mean by Baffle dryer Describe mixing type baffle dryer and recirculatory batch dryer.	2 Marks 2 Marks	**4**

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