

Dr. PANJABRAO DESHMUKH KRISHI VIDYAPEETH, AKOLA**SEMESTER END THEORY EXAMINATION**

B.Sc. (Hons.) Agriculture

Semester	:	VI (New)	Term	:	II	Academic Year	:	2020-21
Course No.	:	ENGG 364	Title	:	Protected Cultivation and Secondary Agriculture			
Credits	:	(1+1)						
Day & Date	:	11/6/2021	Time	:	3.00-4.00 PM	Total Marks	:	40

Note : 1) Solve ANY FOUR questions from SECTION-A
2) Solve ANY SIX questions from SECTION-B
3) ALL questions from SECTION-C are compulsory
4) Send the PDF file of answer sheet to the email id of respective course teacher

SECTION-A**(Write the answers in 4-5 sentences only. Each question carries 4 marks)**

Q. 1 Ans-	Advantages of Greenhouses (Any Four points) The following are the different advantages of using the green house for growing crops 1. Throughout the year four to five crops can be grown in a greenhouse due to the availability of required plant environmental conditions. 2. The productivity of the crop is increased considerably. 3. Superior quality produce can be obtained as they are grown under suitably controlled environment. 4. Gadgets for efficient use of various inputs like water, fertilizers, seeds and plant protection chemicals can be well maintained in a greenhouse. 5. Effective control of pests and diseases is possible as the growing area is enclosed. 6. Percentage of germination of seeds is high in greenhouses. 7. The acclimatization of plantlets of tissue culture technique can be carried out in a greenhouse. 8. Agricultural and horticultural crop production schedules can be planned effectively to take advantage of the market needs. 9. Different types of growing medium like peat mass, vermiculate, rice hulls and compost that are used in intensive agriculture can be effectively utilized in the greenhouse. 10. Export quality produce meeting international standards can be produced in a greenhouse. 11. When the crops are not grown, drying and related operations of the harvested produce can be taken up utilizing the entrapped heat. 12. Greenhouses are suitable for automation of irrigation, application of other inputs, and environmental controls by using computers and artificial intelligence techniques. 13. Self-employment for educated youth on farm can be increased.
Q. 2 Ans-	Electrical resistance method <ul style="list-style-type: none">• Resistance type moisture meter measures the electrical resistance of a measured amount of grain sample at a given compaction (bulk density) and temperature.• The electrical resistance varies with moisture, temperature and degree of compaction.• The universal moisture meter (U.S.A), Tag-Happenstall moisture meter (U.S.A) and Kett moisture meter (Japan) are some of the resistance type moisture meters.• They take only 30 seconds for the moisture measurement.
Q. 3 Ans-	Irrigation methods used in green house: <ol style="list-style-type: none">1. Hand watering2. Perimeter watering3. Overhead sprinklers4. Boom watering5. Drip irrigation

Q. 4 Ans-	Types of Green houses – A) Based on shape a. Lean-to type greenhouse b. Even span type greenhouse c. Uneven span type greenhouse d. Ridge and furrow type greenhouse e. Saw tooth type Greenhouse f. Quonset greenhouse B) Based on Utility a. Greenhouses for active heating b. Greenhouses for active cooling
Q. 5 Ans-	Selection of material Handling machines and Conveyors The selection of proper conveying system is important for ease in operation and getting desired capacity for a particular product. Principles based on which the material handling equipment is selected: • Based on the characteristics of the products being conveyed • Working and climatic conditions. • The capacity of conveying • In a conveying system possibility of use of gravity. • The capacity of handling / conveying equipment should match with the capacity of processing unit or units. • Spillage of conveyed products should be avoided. • Pollution of the environment due to noise or dust by the conveying system should also be avoided.
SECTION-B	
(Write the answers in one sentence only. Each question carries 2 marks)	
Q. 6	<p>(Answer in one sentence/Do as directed/Define)</p> <p>a) Specific heat of a substance is defined as the amount of heat required to raise the temperature of unit mass through 1°C. In mathematical form, specific heat C_p, is written as $C_p = Q/m \cdot dT$ where Q is the amount of heat, m is the mass of material, and dT is the change in temperature.</p> <p>b) The phenomenon of increase in the ambient temperature, due to the formation of the blanket of carbon dioxide is known as greenhouse effect</p> <p>c) (i) Wood, (ii) Bamboo, (iii) Steel, (iv) Galvanized iron pipe, (v) Aluminum and (vi) Reinforced concrete (RCC). (vii) Glass</p> <p>d) Sphericity may be defined as the ratio of the diameter of a sphere of the same volume as that of the particle and the diameter of the smallest circumscribing sphere or generally the largest diameter of the particle.</p> <p>e) When the heat for drying is transferred to the wet solid mainly by conduction through a solid surface (usually metallic), the phenomenon is known as conduction or contact drying.</p> <p>f) Conveyor- 1. Belt conveyor 2. Screw conveyor Elevator - Bucket elevator</p> <p>g) Thin layer drying refers to the grain drying process in which all grains are fully exposed to the drying air under constant drying conditions, i.e., at constant temperature, and humidity. Generally, up to 20 cm thickness of grain bed is taken as thin layer.</p>
SECTION-C	
(Choose the correct option. Each question carry 1 mark)	
Q. 7	1) (a) 6.4-6.6 2) (c) 345 3) (d) 4 mm 4) (a) Lux 5) (b) Hammer mill 6) (c) 400-700

PTO

	7) (b) 130
	8) (a) 2-3 years
	9) (c) Specific heat
	10)(c) 12%
	11) (c) Uneven span type
	12)(a) Recirculatory batch type (RPEC)

Signature of the course teacher

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