Course Code: 20AG0702 **R20**

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR (AUTONOMOUS)

Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code: Green House Technology (20AG0702) **Course & Branch: B.Tech (AGE)**

Year & Sem: II-B.Tech & I-Sem **Regulation: R20**

UNIT –I
INTRODUCTION TO GREENHOUSE

1	**a.** Define greenhouse and list the classification of greenhouse? **b.** Explain Controlled environment agriculture & Open field agriculture?	[L1][CO1] [L2][CO1]	[6M] [6M]
2	**a.** Explain briefly history of greenhouse? **b.** Write advantages of greenhouse?	[L2][CO1] [L2][CO1]	[6M] [6M]
3	**a.** Explain about greenhouse effect? **b.** Explain greenhouse based on shape?	[L2][CO1] [L2][CO1]	[6M] [6M]
4	**a**. Write about Shade nets? **b**. Explain types of greenhouses based on utility and construction?	[L1][CO1] [L2][CO1]	[6M] [6M]
5	**a.** Explain greenhouse based on covering materials? **b.** Write brief notes on cost deviations of greenhouse?	[L2][CO1] [L1][CO1]	[6M] [6M]
6	**a.** Write short note on glass type of greenhouse. **b.** Explain briefly about the classification of greenhouse. **c.** Write short note on ridge and furrow type of greenhouse?	[L1][CO1] [L2][CO1] [L1][CO1]	[2M] [7M] [3M]
7	**a.** Explain the crop requirements for plant growth in greenhouse environment? **b.** Explain briefly about the use of light for plant growth?	[L2][CO1] [L2][CO1]	[8M] [4M]
8	**a.** Explain about temperature, ventilation and carbon dioxide? **b.** Write about the carbon dioxide requirement to the crop.	[L2][CO1] [L1][CO1]	[6M] [6M]
9	**a.** Write about the wavelength property used for crop growth. **b.** Explain about photosynthesis reaction in light	[L1][CO1] [L2][CO1]	[6M] [6M]
10	**a.** Explain about the relative humidity? **b.** Write about the utility and covering material of greenhouse?	[L2][CO1] [L1][CO1]	[6M] [6M]

Course Code: 20AG0702 **R20**

UNIT –II

ENVIRONMENTAL REQUIREMENT FOR CROPS AND CONTROL INSIDE GREENHOUSE

1	Explain the different environmental requirements used for growing crops inside greenhouse?	[L2][CO2]	[12M]
2	a. Write about the types of vegetable crops grown based on temperature? b. What is DIF and write the role of DIF in plant growth? c. Explain about the temperature requirements of horticulture crops?	[L1][CO2] [L1][CO2] [L2][CO2]	[2M] [5M] [5M]
3	a. Write about the light requirement of horticulture crops in greenhouse. b. Write about the shading methods of horticulture crops.	[L1][CO2] [L1][CO2]	[6M] [6M]
4	Write about the greenhouse supplemental lighting systems and its uses.	[L1][CO2]	[12M]
5	a. Explain types of active summer cooling systems with neat diagram? b. Explain forced ventilation systems in detail?	[L2][CO2] [L2][CO2]	[7M] [5M]
6	Explain the types of active winter cooling systems with neat diagram.	[L2][CO2]	[12M]
7	**a.** What is greenhouse ventilation and explain natural ventilation with types? **b.** what is carbon dioxide enrichment?	[L1][CO2] [L1][CO2]	[10M] [2M]
8	**a.** Explain fan and pad cooling system with neat diagram? **b.** What is solid Co_2 and liquid Co_2 ?	[L2][CO2] [L1][CO2]	[10M] [2M]
9	**a.** Write in detail about microprocessor with neat diagram? **b.** Write the methods used for enrichment of carbon dioxide?	[L1][CO2] [L1][CO2]	[6M] [6M]
10	a. Write about the role of computers in greenhouse environment. b. Write the advantages and disadvantages of computers.	[L1][CO2] [L1][CO2]	[7M] [5M]

Course Code: 20AG0702 **R20**

UNIT –III
PLANNING OF GREENHOUSE FACILITY AND GREENHOUSE COVERING MATERIAL

1	**a.** Write about site selection and orientation of greenhouse. **b.** Explain about structural design of greenhouse with suitable diagram.	[L1][CO3] [L2][CO3]	[4M] [8M]
2	**a.** Explain the factors and types of covering materials for greenhouse. **b.** Write the properties for selecting covering for an ideal greenhouse?	[L2][CO3] [L1][CO3]	[8M] [4M]
3	**a.** Explain about the common constructional materials used for greenhouse? **b.** Write difference between hammered and tempered glass?	[L2][CO3] [L1][CO3]	[9M] [3M]
4	Explain about the polyethylene covering material.	[L2][CO3]	[12M]
5	Explain about the fiberglass reinforced plastic rigid-panel covering material.	[L2][CO3]	[12M]
6	**a.** Briefly explain about tefzal T^2 film **b.** Explain about acrylic and polycarbonate rigid panel.	[L2][CO3] [L2][CO3]	[6M] [6M]
7	**a.** Explain briefly about the glass constructional material used for greenhouse? **b**. Explain the different structural designs of greenhouse based on type of frames with suitable diagram	[L2][CO3] [L2][CO3]	[6M] [6M]
8	**a.** Write about the polyvinyl chloride film **b.** Write about polyvinyl chloride rigid film.	[L1][CO3] [L1][CO3]	[6M] [6M]
9	**a.** Explain briefly about galvanized iron, aluminum steel and RCC of constructional material **b**. Write about the design aspects of greenhouse?	[L2][CO3] [L1][CO3]	[6M] [6M]
10	Explain about selective covering material properties and write planning steps of greenhouse facility?	[L2][CO3]	[12M]

Course Code: 20AG0702 **R20**

UNIT –IV

GREENHOUSE HEATING AND ENERGY STORAGE AND IRRIGATION SYSTEMS

1	**a.** Explain the design criteria of construction of greenhouse. **b.** Write about the construction details of glass greenhouse.	[L2][CO4] [L1][CO4]	[4M] [8M]
2	Discuss in detail the procedure of construction of pipe framed greenhouse with neat diagram.	[L2][CO4]	[12M]
3	**a.** Explain the need of heating in greenhouse **b.** Explain about the modes of heat loss?	[L2][CO4] [L2][CO4]	[6M] [6M]
4	**a.** Explain in detail about heating systems **b.** Discuss about different heat distribution systems commonly used.	[L2][CO4] [L2][CO4]	[6M] [6M]
5	**a.** Explain solar heating system with neat diagram **b.** Write the materials required and structure members of pipe framed greenhouse	[L2][CO4] [L1][CO4]	[6M] [6M]
6	Write about water and rock storage with neat diagram?	[L1][CO4]	[12M]
7	**a.** Write the rules of application of greenhouse? **b.** Explain about the hand watering and boom watering.	[L1][CO4] [L2][CO4]	[6M] [6M]
8	**a.** Explain about drip irrigation with neat diagram? **b.** Explain about overhead sprinklers with neat diagram?	[L2][CO4] [L2][CO4]	[6M] [6M]
9	**a.** Define irrigation in greenhouse? **b**. Explain perimeter watering, boom watering, overhead sprinkler?	[L1][CO4] [L2][CO4]	[3M] [9M]
10	Explain different heating systems and modes of heat loss?	[L2][CO4]	[12M]

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UNIT –V
GREENHOUSE UTILIZATION IN OFF SEASON AND ECONOMICS OF GREENHOUSE PRODUCTION

1	Discuss briefly about utilization of greenhouse in off-season.	[L2][CO5]	[12M]
2	**a.** Write in detail about drying of agriculture produce? **b.** Explain the importance of row covers in detail?	[L1][CO5] [L2][CO5]	[6M] [6M]
3	**a.** Enlist the types of row covers b. Explain about perforated plastic tunnels with neat sketch.	[L1][CO5] [L2][CO5]	[3M] [9M]
4	Write about the air supported row crops with neat sketch.	[L1][CO5]	[12M]
5	a. Write about silted row crops with neat sketch. b. Explain briefly the economic analysis of greenhouse production.	[L1][CO5] [L2][CO5]	[8M] [4M]
6	a. Explain the capital requirements with flowchart for protected agriculture. b. Explain how the greenhouse economy be improved.	[L2][CO5] [L2][CO5]	[8M] [4M]
7	Explain about the floating row covers with neat sketch	[L2][CO5]	[12M]
8	a. Explain about economics of production and condition influencing returns b. Explain the factors contributing to lower cost of greenhouse crop production	[L2][CO5] [L2][CO5]	[8M] [4M]
9	a. Explain about the hydroponic system. b. Write about the nutrient film technique.	[L2][CO5] [L1][CO5]	[6M] [6M]
10	Write in detail about curing of tobacco and grains in greenhouse during off-season	[L1][CO5]	[12M]

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