

B.Sc. (Ag.) Honours Semester-V Examination, 2016
Course No.: AEG-311
(Protected Cultivation and Post Harvest Technology)
(New Syllabus)

Signature of Centre Superintendent

Roll No.: (in figure) _____ (in words) _____
Student Index No. _____ Regn. No. _____ of _____

Time: Two Hours

Full Marks: 40

Questions are of value as indicated in the margin

Part-I
(Objective and Short Answer Type)
(Use only ball point pen)

Time: 20 minutes

Full Marks: 10

Note: 1. Answer in question paper itself.

2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. State True (T) or False (F) in respect the following statements:

0.5×5=2.5

- i) LSU dryer is a continuous flow mixing type of dryer.
- ii) Rubber roll sheller consists of two rubber rolls rotating in same direction.
- iii) In constant rate period, drying takes place by surface evaporation.
- iv) Electrical light, in addition to sunlight can be an additional source of light in Greenhouse cultivation.
- v) Thermal conductivity of single grain is less than the bulk grain.

2. Fill in the blanks with appropriate Word (any ten):

0.5×10=5.0

- i) Spiral separator separates the grain based on their _____.
- ii) _____ separates the grains as per their surface roughness.
- iii) The husk content of paddy grain is _____ of its weight.
- iv) Soaking, steaming and drying are the steps of _____ process.
- v) Suitable level of CO₂ for crop growth in greenhouse is _____.
- vi) In gree houses mostly _____ irrigation is used.
- vii) In thin layer drying grain depth is limited upto _____.
- viii) Optimum moisture content for milling of paddy is _____.

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Part - II
(Descriptive Type)

Time: 100 Minutes

Full Marks: 30

Questions are of value or as indicated in the margin

Answer any four questions from the following:

4. Write short notes on the following:
 - a. Theory of grain drying. 2.5
 - b. Parboiling of paddy. 2.5
 - c. Continuous flow dryers. 2.5

 5.
 - a. Classify greenhouses based on construction and covering materials. 4.0
 - b. Explain the criteria for site selection of greenhouses. 3.5

 6.
 - a. What are the constraints faced in green house cultivation? 3.5
 - b. Explain the rules followed for water application in greenhouses. 4.0

 7.
 - a. Explain the working principle of rubber roll sheller, with neat diagram. 4.0
 - b. Write about Frictional, Physical and Thermal properties of biological materials. 3.5

 8.
 - a. What is the importance of EMC in grain drying? Write any one empirical equation for determination of EMC. 2.5
 - b. Briefly explain the working principle of air screen cleaner and cyclone separator with the help of neat diagram. 5.0

 9.
 - a. Describe construction and working of LSU drier with neat diagram. 3.5
 - b. Explain how temperature and moisture changes take place in storage structures. 2.0
 - c. 1200 kg of paddy is to be dried from 18% to 13% (w.b.). Calculate the amount of moisture to be evaporated. 2.0
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- ix) Dead load of greenhouse consists of unit weight of _____.
- x) In _____ gree houses, mechanical energy is not generally required to move fluids for their operation.
- xi) Under normal conditions about _____ percent of relative humidity should be maintained in the greenhouse for better plant growth.
- xii) The angle of repose is _____ for cohesive materials.

3. Tick (4) the correct answer:

0.5×5=2.5

- i. Pneumatic separation is based on
 - a) Difference in relative length
 - b) Difference in aerodynamic properties
 - c) Difference in density
 - d) Difference in roundness
- ii. Development of drying equation for cooling or heating is based on
 - a) Newton's law
 - b) Arrhenius equation
 - c) Henderson equation
 - d) Kick's law
- iii. Most of the heat in greenhouse is lost through
 - a) Covering materials
 - b) Air infiltration
 - c) Radiation
 - d) Water circulation
- iv. When the land is not leveled, such as those near the side of a hill, which type of greenhouse is preferred
 - a) Lean- to design
 - b) Even span design
 - c) Uneven-span Design
 - d) Ridge and furrow design
- v. Terminal Velocity of the food grains is applied for design of
 - a) Spiral separator
 - b) Magnetic separator
 - c) Inclined belt separator
 - d) Pneumatic separator