



Phpt.4108

Storage Engineering (2+0)

Marks: 50

Time: 2 hours

(10x1=10)

I Fill in the Blanks

- 1 The safe moisture content of paddy for storage over one year -----
- 2 1 ton of refrigeration is equal to -----
- 3 The recommended belt speed for grain conveying ranges from -----
- 4 In the Pusa bin, the thickness of PE sheet used to prevent moisture entry into grain is-----
- 5 -----is the process of ventilating stored grain at low air flow rates to maintain uniform grain temperature.

State True or False

- 6 With the increase in temperature, the amount of relative moisture in the atmosphere increases.
- 7 Aerobic respiration leads to loss of moisture, rise in carbon-dioxide and increase of temperature of grain.
- 8 Controlled atmosphere has more oxygen than carbon dioxide.
- 9 Adsorption of CO₂ on the surface of grains is a reversible process.
- 10 'V' shaped trough is most commonly used in screw conveyor

II Write Short notes on any FIVE of the following

(5x2=10)

- 1 What is Food Security?
- 2 What is the Necessity of storage?
- 3 Advantages of metal storage structures?
- 4 Principle of hermetic storage and its advantages.
- 5 Distinguish between deep and shallow bin?
- 6 What are all the benefits of aeration?
- 7 Explain working principle of screw conveyor briefly.

III Answer any FIVE of the following.

(5x4=20)

- 1 Pros and Cons of bag and bulk storage methods in India
- 2 Describe modified and controlled atmospheric storage of perishables
- 3 Temperature and moisture changes in storage structures
- 4 Draw flow patterns when emptying a vertical silo
- 5 Describe Cover and Plinth storage?
- 6 Considerations for selecting a proper conveying system.
- 7 In a screw conveyor, if the diameter of the screw flight and shaft are 0.16m and 0.02m, respectively and the pitch is 16 cm, then calculate the conveying capacity of the screw conveyor at 40 rev/min?

IV Write an essay on any ONE of the following

(1x10=10)

- 1 Illustrate any two grain conveying systems in detail.
- 2 Describe management of bag storage structure and draw layout of warehouse and stack arrangement.
