KERALA AGRICULTURAL UNIVERSITY

B.Tech.(Agri. Engg) 2015 Admission

VII Semester Final Examination-January-2019

Phpt.4108 **Storage Engineering (2+0)**

Marks:50

Time: 2 hours

I **Fill in the blanks:** **(10x1=10)**

1. Storage of food grains is inevitable both in times of _____and_____
2. Trogoderma granariam is a grain borer also known as _____
3. Bukhari structure s generally have capacities between _____to _____ tonnes.
4. 2 Tonne Pusa bin size is base _____x _____cm, Height _____cm
5. Jenssen formula for deep bins_____
6. Morai type storage structures generally constructed in _____
7. The dead load of the conveyor should be _____in relation to the weight of transported product.
8. The belt width is 1500 mm and have a 45° troughing angle so the belt speed is should be around _____
9. In CA storage system oxygen concentration is generally lowered _____and carbon dioxide is increased by _____
10. One tone of refrigeration= _____

II **Write Short notes on ANY FIVE of the following** **(5x2=10)**

1. Direct and indirect damages of grains
2. Bulk and true density
3. Air tight storage structure
4. Kothar silo
5. Bucket elevator
6. CAP
7. Fumigation

III **Answer ANY FIVE of the following** **(5x4=20)**

1. 110 kg of lean poultry is first cooled from 20 to 4° C, there after it is further cooled and frozen to -20°C . Specific heat of poultry is 3.21KJ/Kg °C and below freezing point is -1.71 KJ/Kg °C. the Freezing point of poultry is -2.8 KJ/Kg °C. and the latent heat of fusion is 246.8 KJ/Kg. Calculate the heat load.
2. Types and causes of spoilage in storage
3. Modified atmospheric storage and control of its environment
4. Silos - types and importance
5. Storage conditions for apple and banana
6. Hermetically sealed products and its demerits
7. The capacity of a toughened belt conveyor is 60 m^3/hr. Calculate the belt width and belt speed. Assume required data

IV **Answer ANY ONE of the following** **(1x10=10)**

1. Storage conditions for various fruits and vegetables under cold storage system
2. Warehouse - design and control of environment

****