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**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech. (Food Technology) 2023 Admission**  
**II Semester Final Examination – July 2024**

Pafe.1208

**Post Harvest Engineering (2+1)**

**Marks: 50**  
**Time: 2 hours**

**I Fill in the blanks**

**(10x1=10)**

1. The moisture content attained by a grain with respect to a set of atmospheric .....and .....is called EMC.
2. Drying is a process of .....and .....transfer.
3. In screw conveyor .....of screw should be equal to pitch of the screw.
4. ....conveyor is suitable for handling powdery and sticky materials.
5. The operating speed must be kept.....than the critical speed to achieve proper grinding.

**State True or False**

6. Sorting refers to the classification of cleaned products based on commercial values.
7. In ball mill, shear predominates at high speed while impact become more important at lower speed.
8. The rate of heat transfer inside a product during drying is limited by the heat transfer coefficient at the surface.
9. The temperature and humidity of air play an important role in milling process.
10. For conveying of grains in belt conveyor, the recommended belt speed is 2.5 to 2.8 m/s.

**II Write short notes on ANY FIVE of the following**

**(5x2=10)**

1. Explain size reduction.
2. What do you mean by degree of grinding?
3. Define drying and dehydration.
4. Importance of idlers in belt conveyor.
5. What do you mean by material handling?
6. Discuss about water activity of food.
7. What is effective belt tension?

**III Answer ANY FIVE of the following**

**(5x4=20)**

1. Differentiate between freeze drying and fluidized bed drying.
2. Explain the working principle of specific gravity separator with suitable neat sketch.
3. What is the importance of drying of the food grains?
4. Explain with flow diagram wet milling process of Pigeon pea.
5. Define Parboiling. Write advantages and disadvantages of parboiling of paddy.
6. 500 kg of paddy at 22 per cent moisture content (wb) is dried to 14 per cent moisture content (wb) for milling. Calculate the dry matter present in the paddy and amount of moisture removed during drying.
7. Write the points to be kept in mind while selecting the conveyor.

**IV Write an essay on ANY ONE of the following**

**(1x10=10)**

1. Describe the methods of size reduction. Explain working of ball mill with suitable labelled neat sketch.
2. Discuss about design criterion and working of a belt conveyor.

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