Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec– 2017**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **14FP2025** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CEREALS AND PULSES TECHNOLOGY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | List out the various steps and equipments involved in modern rice milling process. | CO1 | 10 |
| b. | Discuss the various paddy parboiling methods. | CO1 | 10 |
| (OR) | | | | |
| 2. |  | Summarize the concept of whitening / polishing of brown rice with a neat sketch. | CO1 | 20 |
|  | | | | |
| 3. | a. | Sketch the LSU dryer and describe the construction, working and application. | CO1 | 10 |
|  | b. | Discuss the various products and by-products of paddy processing | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the wet and dry milling of pulses with a flow chart. | CO2 | 10 |
|  | b. | In pigeon pea milling with concentric abrasive milling process the following observations were made   1. Amount of unhulled grains – 2.5% 2. Recovery of whole split kernels after milling – 71.4% 3. Amount of crushed kernels – 3.6% 4. Amount of powder generated – 11% 5. Amount of husk removed – 11.5%   The cotyledon to grain ratio is 86.5% and theoretical husk content of pigeon pea – 13%. Calculate the milling efficiency of the process. | CO2 | 10 |
|  | | | | |
| 5. | a. | Generalize the concept of wet milling methods of maize. | CO2 | 10 |
|  | b. | Deduce the process flow chart for the manufacturing of semolina and brewer’s grit, mention their applications. | CO2 | 10 |
| (OR) | | | | |
| 6. |  | A RCC cylindrical grain storage bin has an internal diameter of 4m and is 24m deep. It is completely filled with wheat weighing 740kg/m3. The angle of internal friction for wheat is 28° while the angle of friction between wheat and bin wall is 25°. The ratio of horizontal and vertical pressure intensity ‘k’ is 0.4. Calculate the lateral pressure intensity at 3m intervals. | CO3 | 20 |
|  | | | | |
| 7. | a. | Interpret the moisture and temperature changes inside the storage structure with a diagram. | CO3 | 8 |
|  | b. | Design a bag storage for storing 250 tonnes of paddy. Assume the data wherever necessary. | CO3 | 12 |
| (OR) | | | | |
| 8. | a. | Extend your knowledge on various improved storage structures with a neat sketch. | CO3 | 14 |
|  | b. | Sorghum weighing 750kg/m3 is loaded in a circular concrete silo of 4m internal diameter and a clear height of 8m. The angle of internal friction for sorghum is 26° and that for sorghum and concrete is 24°. Apply Airy theory and find out the maximum lateral pressure at the bottom of bin section. | CO3 | 6 |
|  | | | | |
|  | | **Compulsory**: |  |  |
| 9. | a. | Identify the material handling system for long distance transport in a food industry and analyze the design criteria in detail. | CO3 | 14 |
|  | b. | List out the advantages and limitations of pneumatic conveying system. | CO3 | 6 |

ALL THE BEST