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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18AT2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **POST- HARVEST ENGINEERING OF CEREALS, PULSES AND OILSEEDS** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (20 X 1 = 20 MARKS)** | | | |
| **Choose the best answer:** | | | |
| 1. | The LSU is a \_\_\_\_\_\_\_\_\_\_\_.  (a) Evaporator (b) Washer (c) dryer (d) polisher | CO3 | 1 |
| 2. | Bulgur is the product of the \_\_\_\_\_\_\_\_\_\_\_.  (a) Wheat (b) rice (c) corn (d) pulse | CO1 | 1 |
| 3. | In which unit operation, germ is detached from the corn kernel.  (a) Tempering (b) rolling (c) flaking (d) degerming | CO1 | 1 |
| 4. | In CFTRI method of pulse milling, preconditioning is done at a temperature of \_\_\_\_\_\_\_\_\_\_\_.  (a) 120°C (b) 110°C (c) 125°C (d) 100°C | CO2 | 1 |
| 5. | Bran oil is a rich source of \_\_\_\_\_\_\_\_\_\_\_.  (a) Tocopherol (b) riboflavin (c) vitamin E (d) Vitamin D | CO1 | 1 |
| **Match the following:** | | | |
| 6. | Glazing - Lye peeling | CO1 | 1 |
| 7. | Wet milling of corn - Rice bran oil | CO1 | 1 |
| 8. | Bulgur production - Red earth | CO2 | 1 |
| 9. | Pulse milling - Talc powder +glucose solution | CO2 | 1 |
| 10. | Solvent extraction - Corn steep liquor | CO1 | 1 |
| **Write True or False:** | | | |
| 11. | Parboiled rice is less tastier than raw rice. | CO1 | 1 |
| 12. | Wet milling method of pulses is mostly practiced in South India. | CO1 | 1 |
| 13. | In wheat mills, the rolls that have smooth surface are reduction rolls. | CO3 | 1 |
| 14. | Corn grit is the main product of wet milling. | CO2 | 1 |
| 15. | Defatted bran is used as an ingredient in bakery products. | CO2 | 1 |
| **Fillin the blanks:** | | | |
| 16. | The steps involved in parboiling are soaking, \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_. | CO2 | 1 |
| 17. | Pulses contain \_\_\_\_\_\_\_\_\_\_\_ % of protein. | CO1 | 1 |
| 18. | \_\_\_\_\_\_\_\_\_\_\_ is coarsely ground endosperm of durum. | CO1 | 1 |
| 19. | Corn oil is extracted from \_\_\_\_\_\_\_\_\_\_\_ portion of maize/corn. | CO2 | 1 |
| 20. | The process of mechanically pressing oil containing oil seeds is called as \_\_\_\_. | CO3 | 1 |

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| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Outline the flow chart for modern rice milling process. | CO1 | 5 |
| 22. | Discuss the various parboiling methods. | CO3 | 5 |
| 23. | Sketch the rice grading process using reelgrader and indented cylinder separator. | CO3 | 5 |
| 24. | Describe the Bulgar production method using continuous process. | CO1 | 5 |
| 25. | List out the different products from wheat milling industry. | CO1 | 5 |
| 26. | Explain the dry milling method for corn. | CO2 | 5 |
| 27. | Indicate the important unit operations involved in pulse milling process. | CO2 | 5 |
| 28. | Define - CFTRI method for milling pulses. | CO1 | 5 |
| 29. | Prioritize the need for stabilization of rice bran. | CO3 | 5 |
| 30. | Point out the uses of bran, bran oil and various constituents. | CO3 | 5 |
| 31. | Analyze the changes taking place during extrusion cooking. | CO3 | 5 |
| 32. | Discuss the factors affecting pulse milling efficiency. | CO2 | 5 |

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| **PART – C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
| 33. | a. | Describe the construction and working of Engleberg huller and rubber roll sheller with a neat sketch. | CO1 | 8 |
| b. | Demonstrate the wheat flour milling process with a detailed flow chart. | CO2 | 7 |
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| 34. | a. | Generalize the concept of wet milling of corn. | CO3 | 8 |
| b. | Discuss the various pulse milling equipments. | CO2 | 7 |
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| 35. |  | Summarize the extraction and refining of rice bran oil and mention its uses. | CO3 | 15 |