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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech III Year I Semester Regular & Supplementary Examinations Nov/Dec 2019**
AGRICULTURAL PROCESS ENGINEERING
(AGE)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)**UNIT-I**

- 1 a What are the various parameters to be considered while designing an air screen grain cleaner? **6M**
- b With a line diagram, explain the working of a magnetic separator. Also write its various uses in the food industry. **6M**

OR

- 2 a With a neat diagram, explain the working of a hammer mill. **6M**
- b What are the differences among the three different theories that are available for calculating the minimum energy needed for size reduction? Explain. **6M**

UNIT-II

- 3 Derive a general expression for the terminal velocity. Write its importance in conveying of agricultural commodities. **12M**

OR

- 4 a With a neat diagram, explain the working of dough and paste mixers. **6M**
- b Write about the liquid mixing. Also write about the importance of powders mixing especially in meeting the legal requirements. **6M**

UNIT-III

- 5 a Write about the principle involved, working and design considerations of indented cylinder grader. **6M**
- b What is the difference between moisture content and equilibrium moisture content? Write the importance of equilibrium moisture content in grain storage. **6M**

OR

- 6 a Moisture content of cereals and fruits are expressed in two different ways. Why? Explain with some examples. **6M**
- b Desorption and adsorption curves are not same for the agricultural produce and we always observe hysteresis. Why? **6M**

UNIT-IV

- 7 a Draw a flow chart with various processes involved in modern rice milling. Explain each process in brief. **6M**
- b What are the main objectives of parboiling? Write about the three steps involved in parboiling. **6M**

OR

- 8 a With a neat diagram, explain the working of LSU dryer. **6M**
- b What are the differences between thin layer and deep bed drying? What are the applications of these drying methods? **6M**

UNIT-V

- 9 a** What are the applications of belt conveyors? Write about the types of idlers their cross-sectional load on the belt. **6M**
- b** What are the limitations of pneumatic conveyor? **6M**
- OR**
- 10** With neat diagrams, write about the principle, construction and working of a screw conveyor. **12M**

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