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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2020
AGRICULTURAL PROCESS ENGINEERING

(Agricultural Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a With a neat diagram, explain the working of indented cylinder grader. **6M**
b Write the working principle of specific gravity separator. **6M**

OR

- 2 a Energy point of view, size reduction of cereals is very inefficient process. It also results in quality deterioration especially in the case of spices. Write about how energy wastage can be minimized. Also write about the best method of size reduction for spices so that better quality spice powders can be produced. **6M**
b Sugar is ground from crystals of which it is acceptable that 80% pass a 500 μm sieve, down to a size in which it is acceptable that 80% passes a 88 μm sieve, and a 5 HP motor is found just sufficient for the required throughput. If the requirements are changed such that the grinding is only down to 80% through 125 μm sieve but the throughput is to be increased by 25% would the existing motor have sufficient power to operate the grinder? Assume Bond's equation. **6M**

UNIT-II

- 3 What is a drag coefficient? Draw the forces acting on a body immersed in fluid. Write its importance in conveying of fruits and vegetables in food industry. **12M**

OR

- 4 a With a neat diagram, explain the working of tumbling mixers. Write the uses of tumbling mixers. **6M**
b Define the mixing index. Write the different parameters on which mixing depend. **6M**

UNIT-III

- 5 a Write about the winnowing operation in cereal processing. Also write the developments in the winnowing. **6M**
b The moisture content of the paddy in dry basis is 15%. Calculate the moisture content of the above paddy in percent wet basis. **6M**

OR

- 6 a Write the differences between the water activity and moisture content? How they are helpful in different situations? 6M
- b Write the reasons for hysteresis in biological materials. 6M

UNIT-IV

- 7 a List out various advantages and disadvantages of parboiling paddy. 6M
- b With a neat diagram, explain the working of plate and frame filter press. Also write its various uses. 6M

OR

- 8 a With a neat diagram, explain the working of Fluidized bed dryer. 6M
- b Write about any two modern parboiling methods. 6M

UNIT-V

- 9 a What are the different principles involved in selection of suitable conveying system for conveying food materials in the processing industry? 6M
- b Explain the working of pneumatic conveyor. 6M

OR

- 10 With a neat diagram, write about the principle, construction and working of a bucket elevator. 12M

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