

Code No: RT31353

R13**SET - 1**

III B. Tech I Semester Regular/Supplementary Examinations, October/November - 2017
AGRICULTURAL PROCESS ENGINEERING
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- |   |    |                                                                             |      |
|---|----|-----------------------------------------------------------------------------|------|
| 1 | a) | What are the principles of size reduction?                                  | [4M] |
|   | b) | Define mixing and mixing index.                                             | [3M] |
|   | c) | Explain specific gravity separator.                                         | [4M] |
|   | d) | What are the types of moisture?                                             | [4M] |
|   | e) | Draw the flowchart for showing the process of wet milling method of pulses. | [3M] |
|   | f) | Write the importance of material handling devices.                          | [4M] |

**PART -B**

- |   |    |                                                                                                                             |      |
|---|----|-----------------------------------------------------------------------------------------------------------------------------|------|
| 2 | a) | With a neat sketch explain the working principle of hammer mill. Enumerate the advantages and disadvantages of hammer mill. | [8M] |
|   | b) | Explain the factors affecting nature of the material to be conveyed.                                                        | [8M] |
| 3 | a) | With neat sketch explain the propeller agitators.                                                                           | [8M] |
|   | b) | Explain the criteria of mixer effectiveness and mixing index for granular solids.                                           | [8M] |
| 4 | a) | Explain aerodynamic properties of agricultural products.                                                                    | [8M] |
|   | b) | With a neat diagram explain briefly about cyclone separator along with related equations.                                   | [8M] |
| 5 | a) | With a neat sketch explain deep bed drying.                                                                                 | [8M] |
|   | b) | Explain hysteresis effect.                                                                                                  | [3M] |
|   | c) | Explain static and dynamic methods of EMC.                                                                                  | [5M] |
| 6 | a) | With a neat sketch explain plate and frame filter press.                                                                    | [8M] |
|   | b) | Explain briefly the parboiling operations of paddy.                                                                         | [8M] |
| 7 | a) | What is the principle of operation of chain conveyor? Enumerate the advantages and disadvantages of chain conveyor.         | [8M] |
|   | b) | Explain principle of operation of screw conveyor with a neat sketch.                                                        | [8M] |

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