

Code No: RT31353

R13**SET - 1****III B. Tech I Semester Supplementary Examinations, May - 2019****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 compulsory3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

- |   |    |                                                              |      |
|---|----|--------------------------------------------------------------|------|
| 1 | a) | Define fineness modulus.                                     | [3M] |
|   | b) | Explain the mixtures for dry powders and particulate solids. | [4M] |
|   | c) | Differentiate between frictional and profile drag.           | [4M] |
|   | d) | What is equilibrium moisture content?                        | [4M] |
|   | e) | What are the steps involved in parboiling of paddy.          | [4M] |
|   | f) | What is belt tripper?                                        | [3M] |

**PART -B**

- |   |    |                                                                        |      |
|---|----|------------------------------------------------------------------------|------|
| 2 | a) | Explain different types of jaw crushers.                               | [4M] |
|   | b) | Explain the working of hammer mill with a neat sketch.                 | [8M] |
|   | c) | Explain kick's law for energy and power requirement in size reduction. | [4M] |
| 3 | a) | What are the different mixtures for cohesive solids?                   | [3M] |
|   | b) | Explain different mixtures for dough, pastes and viscous materials.    | [8M] |
|   | c) | Explain rate of mixing and mixing index.                               | [5M] |
| 4 | a) | Derive an expression for terminal velocity of spherical particles.     | [8M] |
|   | b) | Explain the working of pneumatic separator.                            | [4M] |
|   | c) | Explain the working of cyclone separator with a neat sketch.           | [4M] |
| 5 | a) | Explain falling and constant rate drying periods using drying curves.  | [8M] |
|   | b) | Explain the working of fluidized bed dryer.                            | [8M] |
| 6 | a) | Explain the working of continuous rotary filters.                      | [8M] |
|   | b) | Explain different modern parboiling methods.                           | [8M] |
| 7 | a) | Explain different discharge methods of bucket elevators.               | [8M] |
|   | b) | Explain design considerations of a screw conveyor with a neat sketch.  | [8M] |

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