

Code No: RT32352

**R13****SET - 1****III B. Tech II Semester Regular/Supplementary Examinations, April - 2018****FARM MACHINERY AND EQUIPMENT –I**

(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) Write the classification of Farm machines? [3M]
- b) Explain standard disc plough with neat sketch. [4M]
- c) Explain the procedure involved in measuring the draft of tillage implement. [4M]
- d) What is earth moving machine? Write its applications in agriculture? [4M]
- e) Write about adjustments in the seed drills with examples? [4M]
- f) Write about commonly used fertilizer metering mechanisms? [3M]

**PART -B**

- 2 a) What is Farm Mechanization? What are benefits of Farm Mechanization? [4M]
- b) Explain about various Heat treatments of metals. [6M]
- c) Explain how to calculate the cost of operation of an implement with example. [6M]
- 3 a) Enumerate the benefits of Primary tillage operation. [6M]
- b) Explain different types of mould boards with neat sketch. [4M]
- c) How many acres can be covered by a harrow of 1.5m width in a day of 8 hours with bullock power. If each spike of the arrow is giving 1 kg resistance when there are 50 spikes. What power would be necessary for the bullocks to pull the harrow? Assume Speed of the bullock is 4 km/h. [6M]
- 4 a) A plot of 1000X800 m is to be drilled by a corn planter. The planter is having 6 rows with spacing of 120 cm. The speed of travel of planting is 5 kmph. Assume that the time lost in each turn is 10s and time lost in filling the seed hopper is 10 min per hectare. Take an overlap of 15 cm in each run. Find the field efficiency of the machine. [8M]
- b) Explain forces acting upon tillage implement with neat sketch. [8M]
- 5 a) Explain the construction and their working principle of Earthmoving machinery. [6M]
- b) With neat sketch explain about wheel type trenching machine. [4M]
- c) Explain about different types of bulldozer blades. [6M]
- 6 a) Write about working of tractor operated sugarcane cutter planter with conceptual drawing. [8M]
- b) Calculate the seed rate per hectare of a 8X15 cm seed drill, wheel main drive is 125 cm diameter and total weight of grain collected in 30 revaluations is 0.5kg. [4M]
- c) Explain the different types of sprayers. [4M]
- 7 a) With neat sketch explain about manual operated paddy transplanter [8M]
- b) Explain the working principle and adjustments in transplanter [8M]

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