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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Agriculture Engineering) (Sem.-3)

FARM MACHINERY

Subject Code : BTAG-302-19

M.Code : 78588

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Answer briefly :**

- 1) How a plough size is expressed?
- 2) What is a disc angle and its purpose in disc plough?
- 3) What is one way and a two-way plough?
- 4) Name the machine factors which affect soil pulverization by rotavator?
- 5) How will you designate the size of seed drill?
- 6) What are the basic jobs performed by a sprayer nozzle?
- 7) What are the differences between mowers and windrowers?
- 8) What are the differences between reaper and reaper binder?
- 9) What effect on seed rate occurs, if the speed of travel of tractor operated seed drill is double?
- 10) What is dibbler?

SECTION-B

- 11) What is the need for heat treatment? Describe the process of annealing and its objectives.
- 12) What are the different types of seed metering mechanism? Explain the working of Fluted feed type and internal double run type metering mechanism.
- 13) What are the different weed control techniques adopted by Indian farmers? Explain any two mechanical weeding equipment with a neat sketch.
- 14) What are the main functions of a cultivator? A tractor is attached with a 9 tine cultivator. While field testing, the drawbar dynamometer shows an average pull of 14000 N. The speed of the tractor is 6 km per hour. Find the power of the tractor.
- 15) A chaff cutter having two knives cut dry hay at 60 rev/min giving 500 kg per hour. If the throat size is 18 cm × 6 cm, find the effective density of dry hay for a theoretical length of cut 2.5 cm.

SECTION-C

- 16) What is the seed drill? Describe the process of calibration of the seed drill. Calculate the seed rate/hectare of an 11 × 23 cm seed drill, whose main drive wheel is 125 cm diameter and the total weight of grain collected in 20 revolutions is 0.450 kg.
- 17) Explain the construction and working principle of scraper and digger and their use in agriculture. How they differ from each other?
- 18) Describe the working principle of a combine. Name the important parts of a combine. Give a grain flow diagram of a combine.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.