**B.Tech Odd Semester (CBCS) Exam.,
December—2016**

AGRICULTURAL ENGINEERING

(3rd Semester)

Course No. : AECC–05

(Farm Machinery)

Full Marks : 50
Pass Marks : 15

Time : 2 hours

Note : 1. Attempt *any* **five** questions.

2. Begin each answer in a new page.

3. Answer parts of a question at a place.

4. Assume reasonable data wherever required.

5. The figures in the margin indicate full marks for the questions.

1. What is primary tillage? Enlist the primary tillage implements and explain any one of them with neat sketch. 3+7=10

2. Enlist and explain the different methods of sowing. 10

3. What is secondary tillage? Enlist the secondary tillage implements and explain any one of them with neat sketch. 2+8=10

4. Calculate the area covered per day of 8 h by a two bottom 360 mm size tractor drawn mouldboard plough. Forward speed of tractor in field operation is 5 km/h. Time lost in turning is 9 percent. 10

5. A farmer purchased a 25 kW tractor at a total cost of ₹ 5,00,000 and three bottom plough of 30 cm bottom width at ₹ 40,000. The fuel consumption of the tractor was 6 litre per hour at the ploughing speed of 5 km/h.

(a) Calculate the area ploughed per hour.

(b) Determine the cost of ploughing per hectare. Make necessary assumptions if any. 5+5=10

6. The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare : 10

No. of furrow openers—8
Spacing between furrows—15 cm
Diameter of drive wheel—1·5 m
RPM of the drive wheel—800
Seed collected—35 kg

7. Maximum yield of maize is obtained with a population of 30000 plants per hectare. The rows are 140 cm apart and an average emergence rate of 80% is expected.

   (a) How many seeds per hill should be planted if hills are 140 cm apart?

   (b) What would be seed spacing if crop is drilled?   5+5=10

8. What is sprayer? Enlist the sprayer. Explain any sprayer with neat sketch.   10

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