



KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Agrl. Engg.) 2019 Admission
V Semester Final Examination - January 2022

Fpme.3110

Farm Machinery and Equipment I (2+1)

Marks: 50
Time: 2hours

I Fill in the blanks

(10x1=10)

1. -----is the part of plough on which other components are fitted.
2. -----is one of the accessory of plough having a shape of an ordinary plough bottom.
3. The kind of implement whose weight is fully supported by tractor is called as -----.
4. -----is the force occurs between soil and metal when tillage implements works.
5. In-----type plough its single bottom can be changed from one side to other.
6. ----- is also called as vertical disc plough or one way disc plough.
7. The plough around strip of ploughed land is called-----.
8. ----- is the maximum clearance under the landside and the horizontal surface in the working position of MB plough.
9. Several seeds can be dropped with -----type metering device of planter
10. ----- is a seed drill used for wheat sowing without extra tillage operation.

II Write short notes on ANY FIVE of the following

(5x2=10)

1. Write a short note on: Zero tillage seed cum fertilizer drill
2. Write the procedure of draft measurement for trailed equipment.
3. The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare. No. of furrows = 4, Spacing between furrow= 30 cm, Diameter of drive wheel =0.8 m, Speed = 450 rpm, Seed collected = 15 kg
4. State common methods of seeding of crops. State the name of method where row to row and plant to plant distance is uniform.
5. Explain any two types of cultivators tynes or standards in brief.
6. Explain any two types of planters in brief
7. Write short note on power harrow.

III Answer ANY FIVE of the following

(5x4=20)

1. Write the main functions of a cultivator. Describe the working of a tractor mounted rigid tine cultivator.
2. Explain forces acting upon tillage implement with neat sketch.
3. How to estimate cost of machine operation? Explain in brief.
4. State the advantages of disc plough and enlist the different types of disc plough.
5. What is hardness of a surface? Describe the common methods used for increasing surface hardness of metals.
6. The total draft of four-bottom 40 cm MB plough when ploughing 17.5 cm deep at 5.5 km/h speed is 1700 kg. Field efficiency is 75%. Calculate:
 - (i) Unit draft
 - (ii) Actual Power requirement
 - (iii) Area covered/h
7. Enlist the factors to be considered for selection of farm machinery and explain any two in brief.

IV

Write an essay on ANY ONE of the following

(1x10=10)

1. Farm mechanization its scope, benefits and limitations
2. Soil tillage in agriculture; its types, ploughs, their types and utility of M.B. plough, its construction in length.
