KERALA AGRICULTURAL UNIVERSITY
B.Tech. (Ag. Engg.) 2016 Admission
V Semester Final Examination-January 2019

Fpme 3110 **Farm Machinery and Equipment - I (2+1)**

Marks: 50
Time: 2 hours

I **Define the following.** **(10x1=10)**

1 Theoretical field capacity
2 Disc angle
3 Sowing
4 Side draft
5 Tilt angle

Fill in the blanks

6 The draft per unit cross section area is called _____
7 The size of the seed drill is expressed as number of furrow opener X _____
8 _____is the maximum clearance under the landside and the horizontal surface in the working position of MB plough.
9 The set of disc, which are mounted on common shaft is called _____
10 _____ is the part of M.B. Plough to which other components are attached .

II **Write Short notes on any FIVE of the following** **(5x2=10)**

1 State common methods of seeding of crops. State the name of method where row to row and plant to plant distance is uniform.
2 Different parts of rotavator and explain its working in brief
3 Advantages of disc plough.
4 Different types of shovels and sweeps. State their uses.
5 What power is necessary for pulling a harrow with 50 tines, each giving a resistance of 1 kg, when the speed of harrow is 5 km/h.
6 Various items to be considered for estimating cost of operation of farm equipments.
7 Procedure for draft measurement of tractor drawn tillage equipment.

III **Answer any FIVE of the following.** **(5x4=20)**

1 Discuss the strip till drilling concept and constructional details of strip till drill.
2 Describe forces acting upon a tillage implement with neat sketch
3 Enlist the factors to be considered for selection of farm machinery. Describe in brief.
4 What are the main functions of cultivator? Describe working of tractor mounted rigid tine cultivator
5 What is hardness of a surface? Describe the common methods used for increasing surface hardness of metals.

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6 Enlist the different parts of manual rice transplanter and write in brief about its working

7 The total draft of four-bottom 40 cm MB plough when ploughing 17.5 cm deep at 5.5 km/h speed 1700 is kg. Field efficiency is 75%. Calculate: (i) Unit draft (ii) Actual Power requirement (iii) Area covered/h.

IV **Answer any ONE of the following** **(1x10=10)**

1 Discuss the scope, benefits, constraints of agricultural mechanization in the country and give suggestions for improvement

2 Discuss the importance and objectives of tillage. Describe two different classes and types of tillage. Also suggest suitable equipments/implements.

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