KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agrl. Engg.) 2021 Admission
VI Semester Final Examination – June 2024

Fpme.3213 **Farm Machinery and Equipment-II (2+1)** **Marks: 50**
Time: 2 hours

I **Fill in the blanks** **(10x1=10)**

1. Arrangement of harvested crop in the field by a VCR is called .....
2. Under dangerous machine act 1983, the .....has been declared as dangerous machine.
3. The grain damage increase with .....in cylinder speed.
4. For uniform spraying, the overlap required is .....
5. .....and .....are two adjustments which are very important for proper functioning of mower.

State True or False

6. Olpad thresher is operated by electric motor
7. Motorized knapsack sprayer is a hydraulic energy sprayer
8. Flooding nozzle results in lowest drift
9. Reel index is the ratio of reel peripheral speed to forward speed
10. Grass board is the part of combine harvester

II **Write short notes on ANY FIVE of the following** **(5x2=10)**

1. What is registration and alignment in a cutter bar?
2. A cotton picker is used for picking cotton bolls. The rotational speed of spindle is 1200 rpm at 2.5 km/h forward speed. Determine the revolution made by spindle of cotton picker in 500 m picking zone for chain belt arrangement.
3. Differentiate NMD and VMD.
4. Write the function of sprayer and enlist the basic components of power sprayer.
5. Potato digger shaker
6. What is the use of interculture and enlist the manually operated tools in interculture?
7. Explain the factors affecting performance of thresher.

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

1. A field sprayer having 18 nozzles, 40 cm apart moving at a speed of 3.4 kmph. The nozzles are set to a pressure of 11.6 kg cm^2 for an application rate of 1.12 m^2 h If 15% is lost in lines. Calculate the pump capacity.
2. Explain major units in a combine harvester with the help of a neat labelled diagram.
3. Explain different types of threshing cylinder with neat sketch.
4. A chaff cutter having 2 knives cut dry hay at 60 rpm giving 480 kg/h. If the throat site is 18 × 6 cm, find the effective density of dry hay for a theoretical length of cut of 25 mm.
5. Explain direct and indirect calorimetry for measurement of energy expenditure.
6. Explain the principle of spray atomization and enlist the factors affecting spray drift.
7. Explain the working of a reaper binder.

IV **Write an essay on ANY ONE of the following** **(1x10=10)**

1. Sugarcane harvester
2. Potato digger

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