



I Fill in the blanks

- 1 The tank of **Knap-sack** sprayer is usually made of _____
- 2 ASPEE is the manufacturer of _____
- 3 Distance between the driver seat and brake pedal for a tractor should be _____
- 4 Nozzle used in foam spraying is _____
- 5 Flame gun is used for killing the _____
- 6 When knife and pitman run in straight line then cutter bar is in _____

State True/False

- 7 Throughput capacity of combine can be defined as total material entering the combine per unit time
- 8 To reduce the ground speed on a combine, the engine speed should be slowed down.
- 9 The cotton stripper is used for Ginning
- 10 The root crop harvesting equipment should cut the vines below the tuber zone, say at a depth of 7 to 10 cm, lift all vines, shake off the soil and put them in a windrow in single operation.

II Write Short notes on any FIVE of the following

(5x2=10)

- 1 VCR & Reaper
- 2 Rotary cutter and flail mover
- 3 Registration and cutter bar lead
- 4 Anthropometric dimensions required for designing tractor operator's seat.
- 5 Heart rate vs time curve
- 6 Potato digger shaker
- 7 Spike & rasp bar cylinder

III Answer any FIVE of the following.

(5x4=20)

- 1 Write short notes on
(a) Oscillating potato digger (b) Pedal operated paddy thresher
(c) Losses in combine operation
- 2 A hand operated chaff cutter with 2 knives has a throat having an average cross section area of $20 \times 15 \text{ cm}^2$. The knife for cutting through the entire throat area rotates at 60 rpm. The length of chopped piece is 12.5 mm. Calculate the capacity of the chaff cutter assuming the particle density of the forage is 200 kg/m^3 .
- 3 Explain various parameters on which performance of cotton pickers depends.
- 4 List and explain various points to be considered for selection of power thresher.
- 5 Write a note on Anthropometry and types of anthropometric data
- 6 Explain constructional details of Hydraulic Energy Nozzle.
- 7 List methods for determining spray droplet density. Explain any one.

IV Answer any ONE of the following

(1x10=10)

- 1 Explain working of a combine harvester with the help of a neat sketch and flow diagram
- 2 Explain constructional details and working of a vertical conveyor reaper with the help of a