

## MODEL QUESTIONS

- Write down the procedure for sprayer calibration.
- What are the different factors affecting uniformity of distribution of a sprayer.
- Write down the different factors affecting droplet size of a sprayer.
- What is drift? Write down the different factors affecting drift.
- Write briefly about agitation of spray material.
- What are the means of expressing droplet size of a sprayer and define VMD and NMD.
- Write briefly about sprayer classification according to volume of spray and mention their application rate.
- Describe different types of pump used in sprayer.
- What is nozzle? Write its function and describe different types of nozzle briefly.
- Describe different types of sprayer with neat sketch.
- The cheapest source of energy is -----
  
- Power available from a farm labour is -----hp
- Solar energy is a ----- energy
- State the merits and demerits of different sources of energy used in farm.
- List the advantages of diesel engine.
- Mention the basic components of an IC Engine
- List the types of engine classification
- Mention the four strokes of IC engine with a neat sketch and explain their role
- Differentiate petrol and diesel engine
- Mention merits and demerits of different farm power sources.
- Differentiate IHP and BHP
- Write about the working of four stroke cycle engine
- Write about the working of two stroke cycle engine
- Compare four stroke cycle engine with two stroke cycle engine
- Compare spark ignition engine with compression ignition engine.
- A three bottom 40 cm M.B plough is working at a speed of 4 km/h . Calculate the effective field capacity if the field efficiency is 80 percent.
- A four bottom 30 cm M.B plough is working at a speed of 4.5 km/h. Calculate the actual field capacity if the field efficiency is 70 percent.
- List the animal drawn primary tillage implements .
- Define Theoretical field capacity.
- Define Effective field capacity.
- Define field efficiency

- List the objectives of Tillage
- Differentiate casting and gathering.
- With neat diagram mention the furrow terminologies
- What do you mean by soil pulverization?
- Define conservation tillage
- Define mulch tillage
- Preparation of soil in such a way that crop residues and other mulching materials are left on the surface is called
  - minimum tillage b. strip tillage c. rotary tillage d. mulch tillage
- The open trench left in between two adjacent strips of land after finishing the ploughing is called
  - dead furrow b. back furrow c. head land d. crown
- Theoretical field capacity of a double action disc harrow is 1.0 ha/h. Field efficiency is 80 %. What is the actual field capacity?
  - 1.0 ha/h b. 1.5 ha/h c. 0.5 ha/h d. 0.8 ha/h
- Soil tillage consists of breaking compact surface of soil to certain depth and loosening the soil True / False
- Whenever a plough works round a strip of un ploughed land it is called casting
  - True / False
- When a plough works round a strip of ploughed land it is called as Casting
  - True / False
- List the types of mould boards and mention their advantages.
- Mention the advantages of mould board plough over country plough.
- Define horizontal suction.
- Define draft.
- Define side draft
- List types of share and their applicability
- Differentiate turn wrest plough and reversible plough.
- Mention the components of mould board plough with a neat sketch and explain their importance
- What do you mean by unit draft.
- Explain different types of disc ploughs
- List the advantages of disc plough over mould board plough
- Mention the conditions where in you will use disc plough
- Define disc angle.
- Define tilt angle.
- Define concavity
- List the types of disc plough
- Differentiate disc and tilt angles.

- Mention the components of disc plough with a neat sketch and explain their Importance.
- Explain about construction , use and advantage of rotary tiller
- Explain about construction , use and advantage of chisel plough
- Explain about construction , use and advantage of subsoiler
- List the advantages of chisel plough
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- Mention the conditions where in you will use sub soil plough
- List the types of rotary blades
- Mention the components of tractor drawn rotary tiller with a neat sketch and explain their importance
- Land side helps to resist side pressure exerted by furrow slice on the mould board plough True / False
- In mould board plough land side helps to resist side pressure exerted by furrow slice True / False
- Which one of the following is an accessory to mould board plough?
- Share b. mould board c. frog d. jointer
- Horizontal suction allowed in mould board plough is
- 5 mm b. 10-12 mm c. 15 mm d. 20 mm
- Horizontal component of pull is called
- Pull b. draft c. unit draft d. None
- Total draft of a 4 bottom mould board plough is 1600 kg. What is the draft of a single bottom
- 1600 kg b. 1200 kg c. 800 kg d. 400 kg
- In disc ploughs tilt angle varies between
- 15-25° b. 25-35° c. 35-45° d. 45-50°
- Width of operation of a 2 x 30 cm disc plough is
- 30 cm b. 60 cm c. 90cm d. 120 cm
- Disc angle in a standard disc plough varies from
- 25-35 ° b. 40-45 ° c. 45-55 ° d. 55-65 °
- In stony and rocky fields mould board plough works better than disc plough true/false
- A disc plough can be forced to penetrate into the soil which is too hard and dry for working with a mouldboard plough. true/false
- Disc plough leaves the soil in rough and more cloddy condition than that of mouldboard plough. true/false
- Differentiate rotary tiller and chisel plough.

- A levelling board is attached to the rear side of the unit for levelling the tilled soil.
- True / False
- Deep tillage shatters compacted sub soil layers and aids in better infiltration and storage of rainwater in the crop root zone. True / False
- Chisel ploughing reduces the bulk density of soil True / False
- Rotary tiller combines both primary and secondary tillage Operations True / False
- Rotavator combines primary and secondary tillage operations
- True / False
- Compacted areas prevent the natural drainage of the soil and also inhibit the passage of air and nutrients through the soil structure .True / False
- A country plough cuts a trapezoidal furrow having 8 cm top width and 3 cm bottom width. The depth of furrow is 8 cm. assume average soil resistance to be 0.6 kg/cm<sup>2</sup>/. Calculate the pull exerted by the bullocks if the chain forms an angle of 30° with horizontal
- Two bullocks weighing 400 kg each are pulling an implement with a speed of 3 km/h. The depth of furrow is 8 cm.. Assume soil resistance to be 0.6 kg/cm<sup>2</sup>.
- Calculate the pull exerted by bullocks if the chain forms an angle of 30° with the horizontal.
- A three bottom 40 cm mouldboard plough has a working depth of 15 cm, draft is 1200 kg, fuel efficiency is 80 %, and working speed is 4 km/h. calculate
- Unit draft
- Power required
- actual field capacity
- State the requirements of perfect sowing
- Compare broadcasting with drill sowing
- Compare check row planting with transplanting
- What are the functions of a seed drill?
- State the advantages of using seed drills.
- List the types of seed metering mechanisms
- Mention the components of a seed drill with a neat sketch and explain their importance.
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- List the types of seed metering mechanisms
- Mention the components of a seed drill with a neat sketch and explain their importance
- Differentiate seed drill and seed planter.
- Mention the different types of furrow openers and their uses.
- What is calibration of seed drill
- The following observations are recorded while calibrating the seed drill.
- Number of furrows = 10
- Spacing between the furrows = 20 cm
- Diameter of the ground wheel = 1.5 m
- Speed of rotation of ground wheel = 500
- Weight of seed collected = 20 kg.
- Calculate the seed rate.
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- Calculate the seed rate.
- Seed metering mechanism used in cultivator seed drill is
  - Fluted rollers                      b. Cup feed mechanism
  - c. Brush feed mechanism        d. Auger feed mechanism
- In most of the seed drills drive for seed metering mechanism is taken from
  - a. PTO shaft b. Engine c. Hydraulic system d. Ground wheel
- A five row 20 cm manual transplanter is pulled at a speed of 1.0 km/h. How much area will be planted in one day of 8 hours if field efficiency is 80 %

- 0.50 ha b. 0.60 ha c. 0.64 ha d. 0.70 ha
- Knock out mechanism is a device which knocks out the seeds from the cells Or picker heads of the mechanism. True/False
- Dropping of seeds in furrow lines in a continuous flow and covering them with soil is called as
  - Hill dropping b. check row planting c. drilling d. Broadcasting
- The mechanism used to meter fertilizer in seed cum fertilizer drill is
  - Fluted rollers b. Cup feed mechanism
  - edge drop rotor d. Auger feed mechanism
- In most of the seed drills drive for seed metering mechanism is taken from
  - PTO shaft b. Engine c. Hydraulic system d. Ground wheel
- In seed metering mechanisms used in planters the device which knocks out the seeds from the cells is called
  - Fluted rollers                      b. Cut-off mechanism
  - Knock-out mechanism      d. Drive wheel
- Knock out mechanism in the seed metering system of a planter brushes out excess seeds from the rotor true/false
- Calculate the cost of seeding one hectare of land with bullock drawn seed drill of size 5x22 cm. the speed of bullocks is 3 km/h. Hire charges of bullocks is Rs. 150/day. Hire charges of seed drill is Rs. 100/day. Of 8 hours.
- A fluted feed seed drill has 8 furrow openers of single disc type. The furrow openers are spaced 25 cm apart and the main drive wheel has a diameter of 120 cm. How many turns of main drive wheel would occur when the seed drill has covered 1.0 ha of land.
- Define inter cultivation in agriculture. Mention some tools and implement used in inter cultivation
- Explain about blade harrow
- Explain about junior hoe
- Explain about engine operated weeder
- Mention the conditions where in you will use junior hoe
- Name two implements used for conserving soil moisture in dry lands
- List the types of weeders
- Mention a neat sketch and explain the components of cono weeder their
- Differentiate star and peg type weeders.
- state the advantages of long handled weeder
- Junior hoe is primarily used for
  - breaking clods b. seed bed preparation
  - weeding d. none
- The main advantage of using long handle weeders is
  - Less drudgery to operator b. Less area of coverage

- Cheaper cost of weeder d. Traditional tool
- State the functions of sprayer
- Furnish the classifications of sprayers
- List the advantages of sprayers
- Mention the components and operation of hand sprayer
- Mention the components and operation of power sprayer
- Explain about different types of nozzles
- Mention the components of rocker sprayer with a neat sketch and explain their Importance When several nozzles are fitted in a pipe it is called as Spray gun
  - True / False
- In battery operated sprayers the component which breaks the chemical Solution in to fine particles is called
  - spray gun b. nozzle c. spinning disc d. none
- The chemical solution requirement of a sprayer is 80 lit/ha. The sprayer can be classified under
  - high volume sprayer b. low volume sprayer
  - ultra low volume sprayer d. none
- Sprayers can be used to apply
  - herbicide b. fungicide c. insecticide d. all the three chemicals
- Which of the following components of a sprayer is very important?
  - Spray gun b. Cut-off lever c. Nozzle d. Strainer
- Cut off valve is fitted between pump and nozzle of a sprayer and is used to control the flow of chemical solution to the nozzle True / False
- Explain the components and working of motorized knap sack Sprayers
- State the advantages of knapsack motorized mist blower compared to hand sprayer .Explain the parts and working of battery operated sprayer
- How will you convert a mist blower into a duster?
- Differentiate compression sprayer and battery operated sprayer.
- Calculate the water power which is required to discharge liquid @ 30 lit/min at 30 kg/cm<sup>2</sup> pressure
- In a pump, suction volume is 25 lit/min and pump efficiency is 85%. Calculate the shaft power at a pressure of 35 kg/cm<sup>2</sup>
- List the types of mowers .
- Mention the basic components a mower
- Explain with a neat sketch the working of a cutter bar .
- List the types of harvesting methods .
- List the advantages of harvesters .
- Mention the components of paddy harvester with a neat sketch and explain their importance .

- Define registration and alignment
- Differentiate plain and serrated sickle.
- The machine which cuts the crops and ties them into a neat and uniform sheaves is known as a. reaper binder b. mower c. harvester d. none
- A mower knife is said to be in proper *registration* when the knife section stops in the centre of its guard on every stroke True/False
- The material as left by the harvesting machine. Is called swath True/False
- The machine used to cut herbage crops is called a. reaper b. windrower c. mower d. harvester
- Swinging knives are used in a. cylindrical mower b. horizontal rotary mower c. flail mower d. reciprocating mower.
- Mention the components of combine harvester with a neat sketch and explain their importance
- Calculate total time required to harvest 2.5 ha of grass by means of a 2m mower being operated at 4 Km/h. Take field efficiency as 80%
- How many hectares of land can be cut by a combine with 4 m cutter bar, when it is operating at 4km/h