

Model Question Paper 2021-2022
Class-XI
Agricultural Engineering
Fourth Paper
(Only for the candidates of Agriculture Part-1)

Time-3:15 Hours

MM:50

Note-First 15 minutes are allotted for the candidates to read the question paper.

Instructions:

- i. Answer all the questions.
- ii. Question Number 1 is Multiple choice type and Question Nos.2 to 6 are Definite answer type.
- iii. Question Nos. 7 to 11 are Very Short answer type. Write the answers within 20 words each.
- iv. Question Nos. 12 to 14 are Short answer type. Write the answers within 200 words each.
- v. Question Nos. 15 to 17 are Long answer type. Write the answers within 300 words each.
- vi. Marks allotted to the questions are given against them.

(Multiple Choice Type Questions)

1. Four options are given for each part of this question. Select the correct answer and write it in your answer-book serially.

- a)After hardening steel becomes- 1
- i. elastic
 - ii. ductile
 - iii. brittle
 - iv. malleable
- b) Harrow is used for- 1
- i. pulverizing the soil
 - ii. shallow digging of the soil
 - iii. adding manure to the soil
 - iv. all of these
- c) Seed Drill does not control- 1
- i. seed rate
 - ii. depth of the seed
 - iii. distance between two rows
 - iv. distance between two seeds
- d) The draft of plough is not affected by- 1
- i. area of the land
 - ii. breadth of the furrow
 - iii. field resistance
 - iv. depth of the furrow
- e) Land side is used in - 1
- i. Cultivator
 - ii. Hoe

- iii. Mould board plough
- iv. Disc harrow

Definite Answer Type Questions-

- | | |
|--|---|
| 2. Which metal is used for making nuts and bolts? | 1 |
| 3. Which instrument is used to measure the draft of machines? | 1 |
| 4. Name the largest roller in the sugarcane crusher. | 1 |
| 5. How many litres of water are there in two hectare centimeter? | 1 |
| 6. What metal is the share of priza plough made up of? | 1 |

Very Short Answer Type Question

- | | |
|---|---|
| 7. Write the classification of steel. | 2 |
| 8. Write the advantages of power transmission in gears. | 2 |
| 9. Distinguish between plough and harrow. | 2 |
| 10. What is the difference between sprayer and duster? | 2 |
| 11. What do you mean by 'tillage'? | 2 |

Short Answer Type Questions-

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|--|---|
| 12. Draw a neat and labelled diagram of plough plane of a mould board plough. | 4 |
| 13. A centrifugal pump discharges 1500 litres of water per minute and 10% of the water is lost due to various reasons. Calculate the time required to irrigate one hectare of crop which needs 7 hectare centimeter of water using the pump. | 4 |
| 14. Differentiate between mild steel, medium carbon steel and high carbon steel. | 4 |

Long Answer Type Questions-

- | | |
|---|---|
| 15. Describe the working of two stroke engine and four stroke engine. | 6 |
| 16. A driver pulley of 30cm diameter rotates at the speed of 300 rotation per minute and drives a pulley of 45cm diameter mounted on a counter shaft. Another pulley of 40cm diameter is mounted on the same counter shaft by which a pulley of 20cm diameter of a machine is being run. Determine the speed of the machine pulley and also draw the diagram. | 6 |
| 17. A mould board plough of three bottom, each of which is 30cm wide and 20cm deep, plowing with a speed of 5km/hr. The soil resistance of the land is 0.5kg/cm ² . Calculate the total pull of the plow and the horse power required to pull the plow. | 6 |

OR

A mould board plough of three bottom of 30cm is plowing 15cm deep. If the speed of the tractor is 6km/h then how much area will it be able to plow in two hours? 10% of the time is being wasted in moving around the edges of the field.