Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **18AT2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **FARM MACHINERY AND EQUIPMENT-I** | **Max. Marks :** | **100** |

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| **Q. No.** | **Questions** | **Course Outcome** | **Marks** |
| **PART – A (20 X 1 = 20 MARKS)** | | | |
| 1. | Name the different sources of Farm Power in Agriculture. | CO1 | 1 |
| 2. | Classify Farm machinery based on their usage. | CO1 | 1 |
| 3. | Define Primary tillage. | CO1 | 1 |
| 4. | Define Dog clutch. | CO2 | 1 |
| 5. | Define Disc angle. | CO1 | 1 |
| 6. | Write the methods of Land leveling. | CO2 | 1 |
| 7. | List out the methods of increasing surface hardening of metals. | CO3 | 1 |
| 8. | Define Vertical suction. | CO2 | 1 |
| 9. | Define Draft. | CO2 | 1 |
| 10. | Write the formula to find the Depreciation. | CO1 | 1 |
| 11. | List the different types of Harrows. | CO2 | 1 |
| 12. | Name any four Secondary tillage implements. | CO2 | 1 |
| 13. | Define Casting method. | CO3 | 1 |
| 14. | List out the types of shovels present in cultivator. | CO3 | 1 |
| 15. | Define Trailed type implement. | CO2 | 1 |
| 16. | Write the formula to find theoretical field capacity. | CO3 | 1 |
| 17. | Define Pascal’s law. | CO3 | 1 |
| 18. | Name any two Wet Land equipments. | CO2 | 1 |
| 19. | List the functions of Mould board plough. | CO3 | 1 |
| 20. | Define Alloy steel. | CO3 | 1 |

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| **PART – B (10 X 5 = 50 MARKS)**  **(Answer any 10 from the following)** | | | |
| 21. | Explain the types of Furrow openers. | CO1 | 5 |
| 22. | Compare Mould board plough with Disc plough. | CO1 | 5 |
| 23. | Calculate the seed rate of 7 x 17 cm seed drill whose main drive wheel diameter is 124 cm and total weight of grain collected in 20 revolutions is 0.423 kg. | CO2 | 5 |
| 24. | Explain the types of Seed metering mechanism. | CO1 | 5 |
| 25. | Explain the types of Share. | CO2 | 5 |
| 26. | Criticize the advantages and disadvantages of Machinery ownership. | CO3 | 5 |
| 27. | Calculate the power required to pull 3 bottom 35 cm plough, the depth of plough is 20 cm, tractor operating speed 3 km/h and soil resistance is 0.7. | CO3 | 5 |
| 28. | Explain the properties of Ferrous and Non Ferrous metals. | CO3 | 5 |
| 29. | Explain the working of Rotavator. | CO3 | 5 |
| 30. | The following results were obtained while calibrating a seed drill. Calculate the seed rate per hectare. (i) No. of furrows (ii) spacing between furrows = 20 cm (iii) diameter of drive wheel = 1.5 m (iv) revolutions of ground wheel rotated seed delivery = 500 (v) seed collected = 20 kg. | CO2 | 5 |
| 31. | Explain the stepwise procedure for computation of HP range of tractor. | CO3 | 5 |
| 32. | Explain Vertical Hitching of pull type implements. | CO3 | 5 |

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| **PART – C (2 X 15 = 30 MARKS)**  **(Answer any 2 from the following)** | | | | |
| 33. | a. | Explain the calibration of seed drill. | CO2 | 7.5 |
| b. | Discuss the different types of secondary tillage implements. | CO1 | 7.5 |
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| 34. | a. | Total draft of a 3 bottom 45 cm disc plough at a depth of 25 cm and at 3 km/hr is 1700kg. The field efficiency is 80 %..  Calculate;  i) unit draft in kg/cm2  ii) Actual power required in hp  iii) Area covered in ha/hr. | CO2 | 10 |
| b. | Explain land leveler. | CO3 | 5 |
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| 35. | a. | Explain the adjustments of Mouldboard plough. | CO3 | 7.5 |
| b. | Discuss the advantages and working principles of Rice Transplanters. | CO1 | 7.5 |