Reg. No. : | | | | | | | | | | | | |

Question Paper Code: 1085346

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV / DEC 2024
Fifth Semester
Agricultural Engineering
U20AG505 – AGRICULTURAL ECONOMICS AND FARM MANAGEMENT
(Regulation 2020)

Time: Three Hours Maximum: 100 Marks

Answer ALL questions

PART – A (10 x 2 = 20 Marks)

1. Explain about the constrains in farm Mechanization.
2. Classify the tractors based on various parameters.
3. List out the test performed in a Tractor testing.
4. A tractor pulls a draught load of 1000 kg while travelling at a speed of 60 m/min. Find the horse power (hp) developed by the tractor.
5. Define breakeven point.
6. Define pay back period.
7. What is the present status of farm mechanization in India.
8. Define mechanization Planning.
9. Define physical load in human engineering.
10. Role of supervisor in farm management.

PART – B (5 x 16 = 80 Marks)

11. (a) Brief about the role of farm mechanization in Indian agriculture and Tamil Nadu. (16)

(OR)

(b) Briefly explain about the effect of farm mechanization in social technological change. (16)

12. (a) The initial cost of 45 hp John Deer Tractor owned by a farmer is Rs. 7,50,000/- The tractor is expected to work for 10 years. In a year the farmer uses the tractor for 1000 hours. The farmer also owns a 9 tyned cultivator. The tynes are spaced at 30 cm apart. The cost of the cultivator is Rs.30,000/-. The tractor consumes 4 litres of diesel while ploughing with the cultivator. The life of the cultivator is 10 years. The farmer uses the cultivator for 400 hours in a year. The cultivator is operated at a speed of 4 km/h. Calculate the cost of ploughing 3ha of land with the cultivator. Assume all other necessary data. (16)

(OR)

(b) Explain about power analysis and various methods for finding the depreciation. (16)

13. (a) (i) Write the procedure for selecting a optimum farm machinery and matching with the size of the land available with farmers. (10)
(ii) A farmer is having a 20 ha of land. The land is to be ploughed first before sowing of wheat crop. Farmer is using a 2-bottom mould board plough at a forward speed of 2.5 km/h for ploughing the field. The field efficiency of the plough is 70% and used for 8 hours a day. Find the least-cast-width of mould board plough. The sale price of wheat is Rs 6500.00 per tonne and productivity 5.2 t/ha. The price of mould board plough per meter width is Rs 15000.00. Given FC% = 16; K = 0.002, U = 0.8, Sc = 4 and Nt = 1. (6)

(OR)

(b) (i)Explain about various cash flow problems in farm management and when will you replace the farm equipments. (12)
(i)Explain about utility and reliability index. (4)

14. (a) (i) Find out optimum tractor power required for draw bar operation and transportation for paddy wheat crop rotation in light soil for field of area of 10 ha. FC% = 25.84 , U = 0.7, H = 8 h/day, Pt = 9400 Rs/kW. (10)
(ii) Find out the least width of disc harrow, cultivator, planter & seed drill in light soil for Paddy wheat rotation. Given Fc% of disc harrow, cultivator & planker is 24.2% and FC% for seed drill = 23.09%, P = Price of implement per unit width. (6)

(OR)

(b) (i) Explain about the Factors in favour of farm mechanization. (8)
(ii) Brief about the Policy Initiatives by the Government of India to Promote Farm Mechanization. (8)

15. (a) Explain about different type of controls and consideration involved in arrangements of controls in a tractor. (16)

(OR)

(b) Explain about various gender sensitive farm tools Used in Indian Agriculture. (16)

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