Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 1084317

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV / DEC 2024
Fourth Semester
Agricultural Engineering
U20AG403 – FARM TRACTOR SYSTEMS
(Regulation 2020)

Time: Three Hours   Maximum: 100 Marks

Answer ALL questions

PART – A   (10 x 2 = 20 Marks)

1.   Illustrate the parameters to be considered in weighing balance method.

2.   What is meant by centre of gravity?

3.   Mention the various components used in Diesel fuel system.

4.   What is meant by Silencer?

5.   What is the function of gear box?

6.   Compare front axle with wheel alignment.

7.   Define Traction aids.

8.   State Traction efficiency.

9.   List out the makes of tractors.

10.   Define Bulldozer.

PART – B   (5 x 16 = 80 Marks)

11. (a) Describe the various methods to determine the location of Centre of Gravity of a tractor.   (16)

(OR)

(b) Analyze the tractor as a spring mass system with a neat sketch.   (16)

12. (a) Analyze the working function with a sketch
     (i) Thermo syphon cooling system   (8)
     (ii) Pump circulation cooling system.   (8)

(OR)

(b) Analyze the valve opening and closing phenomenon of diesel engine with a value timing diagram.   (16)

13. (a) Explain in detail about Single mesh gear box with a neat sketch.   (16)

(OR)

(b) (i) List the various types of Differential.   (4)

(ii) Explain the working principle of Conventional differential with a sketch.   (12)

14. (a) Explain the principle of traction mechanics of a rigid wheel.   (16)

(OR)

(b) Describe the following terms used in tractor aids,
     (i) Tracks   (3)
     (ii) Tyre Chains   (3)
     (iii)Ballasting   (3)
     (iv)Effect of Inflation pressure   (3)
     (v) Factors depends on Tread Pattern Design   (4)

15. (a) Discuss in detail the various Test code for performance testing of tractors and power tillers.   (16)

(OR)

(b) Discuss the working principle of power tiller with a neat sketch.   (16)

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