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**Question Paper Code: U3A06**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Agriculture Engineering

21UAG306– FARM TRACTOR

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The medium power tractor in the range of power from CO1- U  
(a) 15 to 25 HP      (b) 25 to 45 HP      (c) 25 to 35 HP      (d) 45 HP to 55HP
2. A Firing order of the 4 cylinder engine CO1- U  
(a) 1-4-3-2      (b) 1-2-3-4      (c) 1-4-2-3      (d) none of the above
3. In a four stroke engine each cylinder has CO1- U  
(a) One valve      (b) Two valves      (c) Three valves      (d) Four valves
4. The purpose of radiator is \_\_\_\_\_ of heat to the atmosphere. CO1- U  
(a) Dissipation      (b) Radiation      (c) Convection      (d) Conduction
5. Which of the following is the coefficient of friction of the clutch plate? CO1- U  
(a) 1.3      (b) 0.8      (c) 0.4      (d) 0.1
6. Which of the following is not the component of Epicyclic gear box CO1- U  
(a) Sun Wheel      (b) Brake Band      (c) Planet carrier      (d) Friction lining
7. The force developed in the hydraulic system is high due to CO1- U  
(a) high pressure      (b) more oil      (c) less pressure      (d) less oil
8. A tractor seat suspension should have its natural frequency in the range of CO1- U  
(a) 0.5 to 2.0 Hz      (b) 2.0 to 4.0 Hz      (c) 4.0 to 6.0 Hz      (d) 6.0 to 8.0 Hz
9. How much power is considered of the torque during the tests at varying load? CO1- U  
(a) 69%      (b) 96%      (c) 23%      (d) 85%

- 10 At what speed is the brake test carried out? CO1- U  
(a) 25 kmph (b) 45 kmph (c) 19 kmph (d) 50 kmph

PART – B (5 x 2= 10 Marks)

- 11 List the stationary parts of engine. CO3- App  
12 State the main function of air cleaner. CO1- U  
13 State the use of braking system in automobiles. CO1- U  
14 What are the two aspects of mechanism involved in tractor chassis? CO1- U  
15 What are the necessity of testing of tractor? CO1- U

PART – C (5 x 16= 80 Marks)

- 16 (a) Explain in detail about the power tiller and its components. CO2- App (16)  
Or  
(b) Discuss in detail about the options to select tractor for our college purpose. CO2- App (16)
- 17 (a) Illustrate with neat sketches of the working principle of 4- stroke petrol engine. CO3- Ana (16)  
Or  
(b) Appraise and contrast the working principle of air cooled and water cooled engine. CO2- App (16)
- 18 (a) With a neat sketch discuss the construction and working principle of sliding mesh gear box. CO3- App (16)  
Or  
(b) With a neat sketch discuss the construction and working principle of constant mesh gear box. CO2- App (16)
19. (a) Explain in detail about the basic components of hydraulic system. CO2- App (16)  
Or  
(b) Explain the three point linkage with neat sketches. CO2- App (16)
20. (a) Explain the test codes for performance testing of tractors CO2- App (16)  
Or  
(b) Discuss any two alternative sources of fuels. CO2-App (16)