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

Question Paper Code: 54A03

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fourth Semester

Agriculture Engineering

15UAG403- FARM TRACTORS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. In petrol engines charge is ignited by CO1 -R

(a) Compression (b) Spark (c) Glow plug (d) Both (a) and (b)

2. In diesel engines at the end of compression stroke the pressure varies from CO1 -R

(a) 6 – 10 kg/cm^2 (b) 10 – 22 kg/cm^2 (c) 30 – 45 kg/cm^2 (d) 15 – 30 kg/cm^2

3. The firing order of a 4 – stroke 4 – cylinder engine is given as CO2- R

(a) 1 – 2 – 3 – 4 (b) 1 – 3 – 2 – 4 (c) 1 – 3 – 4 – 2 (d) 1 – 4 – 3 – 2

4. The clearance between rocker arm and valve stem is called CO2 -R

(a) Valve clearance (b) Sleeve clearance

(c) Tappet clearance (d) Rocker arm clearance

5. The main shaft of an engine also called as CO3 -R

(a) Output shaft (b) Input shaft (c) Lay shaft (d) Counter shaft

6. Friction plate is a part of CO3- R

(a) Clutch (b) Final drive (c) Differential (d) None of these

7. A pump used in power steering system is CO4 -R

(a) Gear pump (b) Vane pump (c) Both A and B (d) None of these

8. Hydraulic system in tractor is mainly used for CO4 -R

(a) Operating three point hitch (b) PTO drive

(c) Storing energy (d) Operating pump

9. Vibration is measured by CO5- R

(a) Accelerometer (b) Tensiometer (c) Penetrometer (d) Tacometer

10. A noise level for four hours of working is CO5 -R

(a) 90 dB (b) 95 dB (c) 100 dB (d) 105 dB

PART – B (5 x 2= 10Marks)

11. What is firing order? Give an example CO1- R

12. Differentiate between turbocharger and supercharger CO2 -R

13. Define tractive efficiency CO3- R

14. Explain the concept of wheel alignment CO4- R

15. Name the codes adopted for the lifting of the tractor performance of tractors CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain in detail about the constructional features of IC engine. CO1- App (16)

Or

(b) Write in detail about the principle and operation of IC engine with neat sketch CO1 -App (16)

17. (a) (i) Write about the construction of valves with neat sketch by mentioning the parts. CO2 -App (6)

(ii) What is valve timing diagram? Describe it. CO2 -App (10)

Or

(b) Explain in detail about cooling and lubrication system CO2 -Ana (16)

18. (a) (i) Discuss about three point linkage CO3 -Ana (8)

(ii) Write about the stability of the hydraulic system CO3- Ana (8)

Or

(b) Describe in detail about the different types of gear box in tractors with neat sketch by explaining its position of all gears — CO3 -U — (16)

19. (a) What is hydraulic system? What are the components of hydraulic system? Explain the components and its function, also describe the working principle of hydraulic system. — CO4 -U — (16)

Or

(b) Write short notes on — CO4 -U — (16)

(i) Position control
(ii) Drawbar hitch
(iii) Three point linkage
(iv) PTO
(v) Wheel base
(vi) Cage wheel
(vii) Ground clearance
(viii) Governor

20. (a) What are the important test conditions of a tractor? Explain them. — CO5- U — (16)

Or

(b) Explain the need for testing tractors. Discuss the various stages of testing tractors for clearance international marketing. — CO5- U — (16)