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Question Paper Code: 54A03

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Agriculture Engineering

15UAG403 - FARM TRACTORS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The type of tractor which is used in marshy lands, hillside and garden are classified as CO1- R
(a) General purpose (b) Row crop (c) Special purpose (d) None
2. _____ is connected to the piston through the connecting rod that converts linear motion into rotational motion is called as CO1- R
(a) Piston pin (b) Crank shaft (c) Cam shaft (d) Connecting rod
3. The cooling system which makes use of a centrifugal pump to circulate water throughout the water jackets and radiator is called as CO2- R
(a) Direct system (b) Hopper system
(c) Thermo syphone system (d) Forced circulation
4. The commercial diesel fuels have got cetane rating varying from CO2- R
(a) 30 to 40 (b) 30 to 50 (c) 30 to 60 (d) 30 to 70
5. The advantage of three- point linkage is/ are CO3- R
(a) Easy control of equipments (b) Quick setting of implements
(c) Automatic hydraulic control of equipments (d) All of the above

6. As per ASAE standard PTO speed is _____ CO3- R
 (a) 540 ± 10 rpm (b) 550 ± 10 rpm (c) 550 ± 20 rpm (d) 540 ± 40 rpm
7. The working principle of hydraulic system is based on CO4- R
 (a) Boyle's law (b) Stephen Boltzman's law (c) Pascal's law (d) Charle's law
8. Power transmission system consists of _____ CO4- R
 (a) Differential (b) Final drive (c) Both a and b (d) None
9. Eastern Region Farm Machinery Training and Testing Institute is CO5- R
 located in _____
 (a) Budni (b) Sonitpur (c) Hisar (d) Anantpur
10. OECD Standard Test Code assess the tractor performance based on CO5- R
 (a) Performance (b) Safety (c) Noise (d) All of the above

PART – B (5 x 2= 10 Marks)

11. Compare and contrast between two stroke and four stroke engine. CO1- R
12. Define governor. Explain its importance. CO2- R
13. What are the main functions of crown wheel? Enlist the components of CO3- R
 differential unit.
14. Explain the working principle of hydraulic control system. CO4- R
15. Explain haulage test. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain the constructional features of IC engine. CO1- U (16)
 Or
 (b) Explain the classification of tractor and the factors responsible for CO1- U (16)
 selection of tractors.
17. (a) Explain the fuel supply system in spark ignition engine with CO2- U (16)
 suitable diagram.
 Or
 (b) Explain engine lubrication system with neat diagram. CO2- U (16)

18. (a) Explain in detail about types of transmission gear and torque convertor gear with a labeled diagram. CO3- U (16)
- Or
- (b) (i) Explain the components of steering system. CO3- U (8)
- (ii) Explain the principle and classification of brake system with neat sketch. CO3- U (8)
19. (a) Explain the principle, working, construction and types of hydraulic system in detail. CO4- U (16)
- Or
- (b) (i) Explain the types of tractor hitch with a neat diagram. CO4- U (8)
- (ii) Explain the importance of PTO and belt pulley in detail. CO4- U (8)
20. (a) Explain the preparation and testing procedure of tractor. CO5- U (16)
- Or
- (b) Expand OECD. Explain the approval of OECD for compulsory and optional test. CO5- U (16)

