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Question Paper Code:49720

B.E./B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Mechanical Engineering

14UME920 – ADVANCED I.C ENGINES

(Regulation 2014)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The cold engine is started, it requires a _____ mixture. CO1- R
(a) leaner (b) richer (c) chemically equal (d) none mentioned
2. The air standard efficiency of an Otto cycle compared to diesel cycle for the given compression ratio is CO1- R
(a) more (b) same (c) less (d) depending on power rating
3. The pressure at the end of compression in the case of diesel engine is of the order of CO2- R
(a) 20 kg/cm (b) 6 kg/cm (c) 12kg/cm (d) 35 kg/cm
4. Combustion in compression ignition engines is CO2- R
(a) homogeneous (b) turbulent (c) heterogeneous (d) laminar
5. The following is not one of the major pollutants. CO3- R
(a) nitrogen oxides (b) carbon di-oxide
(c) carbon monoxide (d) unburned hydro carbon
6. The major contributor of Carbon monoxide is CO3- R
(a) motor vehicle (b) industry (c) stationary combustion (d) none of the /above

7. The advantage of gaseous fuel is that CO4- R
 (a) can be stored easily (b) can mix easily with air
 (c) can displace more air from the engine (d) all of the mentioned
8. The C.I. engines alternative fuel most preferred are CO4- R
 (a) aromatics (b)olefins (c) napthenes (d) paraffins
9. The most accurate gasoline injection system is CO5- R
 (a) direct injection (b)throttle injection (c) port injection (d)manifold injection
10. The effective inhibitor of pre-ignition is CO5- R
 (a) alcohol (b) lead (c) water (d)none mentioned

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain briefly the process of normal combustion in SI engines. CO1- App (8)
12. Demonstrate briefly about the knocking in CI engine with help of Time Vs Pressure curve and factors influencing knocking in combustion CO2- App (8)
13. Discuss in detail about the working of a catalytic converter. CO3- Ana (8)
14. Describe the relative merits of using hydrogen as an alternate fuel in SI and CI engines and justify. CO4- U (8)
15. Discus about homogeneous charge compression ignition system with neat sketch. CO5- U (8)