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Reg. No. :

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Question Paper Code: 59703

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

Elective

Mechanical Engineering

15UME903 - AUTOMOBILE ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. In four stroke engine each cylinder has CO1-R
(a) One valve (b) Two valve (c) Three valve (d) Four valve
2. Exhaust valve temperature is about CO1-R
(a) 35 degree celcius (b) 100 degree celsius
(c) 150 degree celsius (d) 500 degree celsius
3. On modern four stroke engines the exhaust valve opens just CO2-R
(a) Before TDC (b) After TDC (c) Before BDC (d) After BDC
4. In a diesel engine the fuel injection pressure is in the range CO2-R
(a) 100 to 170 atm (b) 60 to 70 atm (c) 30 to 40 atm (d) 20 to 25 atm
5. Engine torque is highest at CO3-R
(a) High speed (b) Low speed (c) Intermediate speed (d) Very high
6. In the diesel engine the compression ratio is as high as CO3-R
(a) 10:1 (b) 15:1 (c) 5:1 (d) 1:9
7. The device for smoothing out the power impulses from the engine called CO4-R
(a) Flywheel (b) Camshaft (c) Crankshaft (d) Clutch

8. In an operating engine the hottest part of the piston is the CO4-R
 (a) Head (b) Ring grooves (c) Skirt (d) Pin bosses
9. The ratio of the cylinder volume at BDC and the clearance volume is called CO5-R
 (a) Clearance ratio (b) Volumetric ratio (c) Compression ratio (d) Tensile ratio
10. Due to heat of combustion with increase in temperature the molecules CO5-R
 (a) Move slower (b) Vaporize (c) Move faster (d) Evaporate

PART – B (5 x 2= 10 Marks)

11. What are the types of the automobiles? CO1-R
12. Define turbo chargers CO2-R
13. What is slip joints? CO3-R
14. What are the types of front axle? CO4-R
15. Define bio-diesel CO5-R

PART – C (5 x 16= 80Marks)

16. (a) Illustrate the vehicle construction and different layouts of it. CO1-U (16)
 Or
 (b) What are the components of IC engine? and Explain in detail. CO1-U (16)
17. (a) Describe the engine emission control by three way catalytic converter. CO2-U (16)
 Or
 (b) Describe the electronically controlled gasoline injection system for SI-engine. CO2-U (16)
18. (a) Describe the working and construction of the gear box. CO3-U (16)
 Or
 (b) Illustrate the Hotchkiss drive and torque tube drive and explain in detail. CO3-U (16)

19. (a) What is steering geometry? Give details about its types and explain in detail. CO4-U (16)

Or

(b) Define hydraulic braking system and explain with neat sketch. CO4-U (16)

20. (a) Describe the details about LPG and bio-ethanol. CO5-U (16)

Or

(b) Describe the combustion and emission characteristics of SI and CI engines. CO5-U (16)

