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Question Paper Code: 41754A

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

Fifth Semester

Mechanical Engineering

14UME504 - AUTOMOBILE ENGINEERING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The basic automobile structure consists of the suspension system, axles, wheels and
(a) Steering (b) frame (c) Brakes (d) Lights
2. Compression rings are generally made of
(a) low carbon steel (b) high carbon steel
(c) aluminium (d) chromium
3. The fuel injection timing in a distributor type pump is controlled by
(a) changing plunger stroke (b) changing speed of rotor
(c) rotating the cam ring (d) changing the number of cams on the ring
4. The most accurate timer for electronic ignition system is the
(a) diode (b) transistor
(c) hall effects switch (d) pulse generator
5. By using synchronizing device, the two involved adjacent gears have their speeds
(a) increased (b) reduced (c) equalized (d) unequalised

6. A two piece propeller shaft requires

(a) one universal joint	(b) a center support bearings
(c) the shaft to be solid	(d) none of the above
7. The gas used in modern shock absorber is

(a) Nitrogen	(b) Oxygen	(c) Hydrogen	(d) Carbon dioxide
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8. In disc brake, pad to disc adjustment is provided by

(a) caliper	(b) piston	(c) piston seal	(d) bleed screw
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9. EGR system is employed for controlling emission of

(a) HC	(b) CO	(c) NO	(d) HC and CO
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10. The calorific value of alcohol is

(a) less than that of gasoline	(b) equals to that of gasoline
(c) more than that of gasoline	(d) depends upon type of the engine where used

PART - B (5 x 2 = 10 Marks)

11. What are the main units of an automobile?
12. What is the function of carburetor?
13. What is the function of gear box?
14. What are main advantages of power steering?
15. What are advantages of LPG over conventional fuels?

PART - C (5 x 16 = 80 Marks)

16. (a) State the construction and working principle three way catalytic converter with neat diagram. (16)

Or

- (b) Explain the following terms

(i) Load distribution in frame	(ii) Frame type with neat sketch
(iii) Frame materials	(iv) Frame testing (16)

17. (a) What is the purpose of ignition system? Explain any one type with neat diagram. (16)

Or

(b) Explain the construction and working principle of SOLEX Carburetor with neat diagram. (16)

18. (a) Explain the construction and working principle of multi plate clutch with neat diagram. (16)

Or

(b) What are the various type of rear axle? Explain any one in detail with diagram. (16)

19. (a) Explain the construction and working of telescopic shock absorber with neat diagram. (16)

Or

(b) Explain the construction and operation of hydraulic braking system with a neat sketch. (16)

20. (a) Describe the salient features of using LPG as an alternate fuel. Explain why hydrogen is considered as the most favorable fuel for future. (16)

Or

(b) (i) Explain why liquefied petroleum gas is used in engine. (8)

(ii) Explain the auto fuel safety consideration. (8)
