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Question Paper Code: 45704

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

- Lateral bending of the frame side members may be caused on account of
 - weight of passengers
 - side wind
 - engine torque
 - braking torque
- Compression rings are generally made of
 - low carbon steel
 - high carbon steel
 - aluminium
 - chromium
- Lean air-fuel mixture is required for
 - starting
 - idling
 - cruising
 - acceleration
- The fuel injection timing in a distributor type pump is controlled by
 - changing plunger stroke
 - changing speed of rotor
 - rotating the cam ring
 - changing the number of cams on the ring
- By using synchronizing device, the two involved adjacent gears have their speeds
 - increased
 - reduced
 - equalized
 - 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
8. In disc brake, pad to disc adjustment is provided by
(a) caliper (b) piston (c) piston seal (d) bleed screw
9. The process in which hydrocarbons are decomposed in t smaller hydrocarbons is called
(a) cracking (b) reforming
(c) polymerization (d) alkylation
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. How automobiles are streamlined based on transmission?
12. Mention the different circuits involved in solex carburetor.
13. What is the function of gear box?
14. What are main advantages of power steering?
15. What is Bio-ethanol?

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Define the term automobile and classify it with examples. (10)
(ii) Explain the classifications of chassis and its advantages. (6)

Or

(b) Explain the following terms

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

17. (a) (i) Explain the working principle of supercharger with a neat sketch. (10)

(ii) Describe the constructional and working principle of fuel injector. (6)

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) Explain the working of synchromesh gear box with neat sketch. (16)

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

Or

(b) Describe with a neat sketch of working of anti-lock braking system. (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) Explain the construction and working of Hybrid vehicle with neat diagram. (16)
