Question Paper Code : 13057

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2012.

Sixth Semester

Mechanical Engineering

080120035 — AUTOMOBILE ENGINEERING

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Give any two advantages of frameless construction over the conventional framed construction.

2.   Name the sources of automobile pollutants.

3.   List out any two drawbacks of carburetor in multi cylinder engine.

4.   Write the two methods of lead acid battery charging.

5.   Show the motion of the differential pinion gears when a car is moving along a curve.

6.   Name the possible causes for the propeller shaft to develop noise while running.

7.   Define 'king pin inclination'.

8.   Write the functions of an automobile suspension system.

9.   Define the term 'esterification'.

10. Distinguish between anti lock braking system and conventional braking system.

PART B — (5 × 16 = 80 marks)

11. (a)   Describe the electronic engine management system in detail.

Or

(b)   Discuss the forms, functions and materials of various components of an engine.

12. (a) Write short notes on the following :

     (i) CRDI system. (8)

     (ii) MPFI system. (8)

Or

  (b) Explain the working principle of any one starting motor and generator of an automobile.

13. (a) (i) Describe how a synchronizing system functions. (9)

     (ii) Explain how constant velocity is obtained in universal joints. (7)

Or

  (b) With a neat schematic diagram, explain the floor mounted gear shift mechanism. In detail.

14. (a) Discuss in detail the functions of an integral type power steering.

Or

  (b) With a neat sketch, explain the function of a master cylinder in hydraulic brakes.

15. (a) Write short note on the following :

     (i) Air bags. (8)

     (ii) Fuel cells. (8)

Or

  (b) With a schematic layout, explain the working of series and parallel configuration type hybrid cars.

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