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Question Paper Code : 21575

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Sixth Semester

Mechanical Engineering

ME 2354/ME 62/10122 ME 604 — AUTOMOBILE ENGINEERING

(Regulation 2008/2010)

(Common to PTME 2354 Automobile Engineering for B.E (Part – Time) Fifth Semester Mechanical Engineering Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the three types of vehicle axle?
2. What is the aspect to be considered in the body design?
3. Define the term turbo charging.
4. What is meant by variable choke carburetor?
5. What is the function of transfer box?
6. What is the function of differential?
7. List the types of suspension systems.
8. Define caster and chamber.
9. What is the composition of natural gas?
10. Define hybrid vehicle.

PART B — (5 × 16 = 80 marks)

11. (a) With a neat sketch explain the various components of chassis. (16)

Or

- (b) Explain the various forces acting on the body and its aerodynamics effects. (16)

12. (a) (i) With a neat sketch explain the working principle of three way catalytic converter. (12)
(ii) What are the functions of carburetor? (4)

Or

- (b) (i) Explain the multipoint fuel injection system in gasoline engine with a neat sketch. (8)
(ii) With a neat sketch explain the battery ignition systems. (8)
13. (a) (i) What is meant by clutch? List out the requirement. (4)
(ii) Explain the construction and operation of single plate coil spring clutch. (12)

Or

- (b) Discuss the following with simple sketch.
(i) Fluid flywheel (8)
(ii) Differential unit. (8)
14. (a) Sketch and explain working principle of power steering system. (16)

Or

- (b) Explain the construction and operation of hydraulic braking system with a sketch. (16)
15. (a) Explain the modification required for converting the petrol fuelled vehicle into LPG fuelled vehicle. (16)

Or

- (b) (i) Explain the construction and working principle of fuel cell with a neat sketch. (8)
(ii) Explain any one method for modifying the vegetable oil into biodiesel. (8)