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Question Paper Code : 80854

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Sixth Semester

Mechanical Engineering

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

(Regulations 2008/2010)

(Common to PTME 2354 for B.E. (Part-Time) Fifth Semester – Mechanical Engineering — Regulations 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. What is gasoline injection system?
4. What are the functions of a turbo charger?
5. Why do we provide slip joint in the propeller shaft?
6. What is the function of differential?
7. Mention the function of a steering gear. List down any two types of steering gear.
8. What do you understand by traction control?
9. What are the main components of a hybrid automobile?
10. State any four disadvantages of using hydrogen as fuel.

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) Discuss about CRDI system. (8)
(ii) Explain about the working principle of three way catalytic converter. (8)

Or

- (b) (i) Explain electronic ignition system with neat diagram. (8)
(ii) Discuss the construction and working of rotary distributor type diesel injection system. (8)
13. (a) (i) Explain the principle of operation of a multiplate clutch with a neat sketch. (8)
(ii) With a neat sketch discuss the construction and operation of a constant mesh gear box. (8)

Or

- (b) (i) Draw a neat sketch of a differential and explain its operation. (12)
(ii) Distinguish between Hotchkiss drive and torque tube drive. (4)
14. (a) Mention different types of braking systems in automobile and explain any one type in detail.

Or

- (b) (i) Write short notes on power steering. (6)
(ii) Write briefly about independent type of front suspension system. (10)
15. (a) What are the characteristics of Alcohols? Write detailed notes on the use of Alcohols in Automobile.

Or

- (b) Explain in detail about the principle of operation of fuel cell.
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