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Question Paper Code : 51654

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

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 advantages of diesel engines in cars?
2. How are automobiles classified based on capacity? Give examples.
3. Enlist the limitations of turbo charging.
4. Write the main requirements of an injector nozzle.
5. What is known as one way clutch?
6. Mention few important causes of axle failures.
7. What is the disadvantage of having rigid axle suspension?
8. With regard to steering, what is Toe-in and Toe-out.
9. Define energy intensity.
10. Why is hydrogen called as secondary energy source?

PART B — (5 × 16 = 80 marks)

11. (a) Give reasons :
- (i) For using single cylinder two stroke petrol engines on two wheelers (8)
 - (ii) For using multi cylinder diesel engines in commercial vehicles. (8)

Or

- (b) List the engine parts, materials, method of manufacture and their functions. (16)
12. (a) (i) Brief the modifications to be done in an engine to make it suitable for supercharging. (8)
- (ii) Write a short note on electronic fuel injection system. (8)

Or

- (b) What is CRDI? Explain in detail with relevant sketch. (16)
13. (a) What is differential? Explain its construction, operation and types with neat sketches. (16)

Or

- (b) Explain types of gear boxes in detail with neat sketches. (16)
14. (a) Explain the steering principle, its need, functions in detail with proper sketches and mention the parts of steering system. (16)

Or

- (b) Explain independent suspension system with neat sketches. (16)
15. (a) Enumerate the advantages and disadvantages of using alcohol as a fuel. (16)

Or

- (b) Explain briefly about the history, current uses, process of utilization and advantages of biomass, as a fuel. (16)