

A 1394

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Eighth Semester

Mechanical Engineering

ME 437 — AUTOMOBILE ENGINEERING

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write down any two main sections of vehicle construction.
2. Mention any two possible causes of vibration in combustion engine.
3. List down any two demerits of carburetors.
4. Differentiate between the mono point and multi point fuel injections system.
5. What is the function of universal joint?
6. What is meant by differential lock?
7. Define wheel track and wheel base.
8. What do you understand from under inflated and over inflated tires?
9. Define detonation and pre-ignition.
10. Write the composition of LPG and CNG.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the following terminology in vehicle construction. Chassis, frame, body and suspension. (4)
- (ii) Explain briefly about structure of passenger car with neat sketch. (12)

Or

- (b) (i) Describe any four pollutant formation in I.C. engines. (4)
- (ii) Briefly explain the various CVS system for pollution standard in vehicle. (12)
12. (a) (i) List out the four differences in between carburetor and multi point fuel injection system in S.I. engine. (4)
- (ii) Narrate the electronic fuel injection system with neat sketch. (12)

Or

- (b) (i) What is the function of distributor in ignition system and also name the spark timing controlling mechanism in it? (4)
- (ii) With the help of neat sketch explain about the electronic ignition system. (12)
13. (a) (i) What are the types of clutch used in the vehicle and also mention their advantages. (4)
- (ii) Give an account on fluid fly wheel with neat sketch and also mention the limitations. (12)

Or

- (b) (i) Write the function of propeller shaft and differential unit of vehicle. (4)
- (ii) Discuss on semi and full floating rear axle with neat sketch and also their applications. (12)
14. (a) (i) Brief on the following steering geometry terminology. Toe-in, toe-out, caster angle and camber angle. (4)
- (ii) Explain the Ackerman and Davis wheel steering gear geometry with neat sketch. (12)

Or

- (b) (i) What is meant by bleeding in hydraulic braking system and explain? (4)
- (ii) Narrate briefly about servo-braking system and mention its merits and demerits. (12)

- 4) 15. (a) (i) Compare the advantages and disadvantages of LPG and Hydrogen as fuel in I.C. Engines. (4)
- (ii) Explain the construction and working principle of Hydrogen engine. (12)

Or

- (b) (i) Write down advantages and disadvantages of hybrid vehicles. (4)
- (ii) Explain with a neat sketch the working of principle of fuel cell. (12)
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