C 3308

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

Sixth Semester

(Regulation 2004)

Mechanical Engineering

ME 1353 — AUTOMOBILE ENGINEERING

(Common to Production Engineering)

(Common to B.E. (Part-Time) Fifth Semester – Regulation 2005)

Time : Three hours Maximum : 100 marks

(Codes/Tables/Charts to be permitted)

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Enumerate the merits and de-merits of front engine rear drive chassis layout.

2. List out the various materials used in the construction of chassis frames.

3. Give the requirements of F/A ratio in SI engines.

4. What is the function of ORC in a starting motor?

5. What are the functions of universal joint?

6. State the function of differential unit.

7. What is meant by bleeding of brakes?

8. Distinguish between disc brake with drum brake.

9. List the advantages of hydrogen used in Automobiles.

10. What is a hybrid vehicle?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the construction of various frames used in automobiles with neat sketch. (16)

Or

(b) Discuss the Construction and working principles of 3-way Catalytic controller. (16)

12. (a) Briefly discuss the working principle of a simple Carburator system. (16)

Or

(b) Describe the construction and working principles of Battery-Coil ignition system. (16)

13. (a) Explain the construction and working principles of a typical automobile gear box (16)

Or

(b) Discuss the working principles of

(i) Torque tube drive. (8)

(ii) Hotchkiss drive. (8)

14. (a) Sketch and explain the working of power steering system. (16)

Or

(b) Explain the working principles of Hydraulic braking system with simple sketches. (16)

15. (a) Discuss the operation of an LPG propelled Automobile with neat sketch. (16)

Or

(b) Explain the construction and working principle of Fuel cells, with simple sketches. (16)

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