Reg. No. : | | | | | | | | | | | |

# Question Paper Code : Q 2320

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Sixth Semester

(Regulation 2004)

Mechanical Engineering

ME 1353 — AUTOMOBILE ENGINEERING

(Common to Production Engineering)

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

Time : Three hours Maximum : 100 marks

(Codes/tables/Charts to be permitted, if any, may be indicated)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the defects that can appear in a chassis body?

2. What is meant by turbocharging in automotive engines?

3. Name the various parts of a lead acid battery.

4. List out the major drawbacks of using carburetor in multi cylinder engines.

5. What is the use of slip joint in transmission system?

6. What is meant by 'double declutching' in constant mesh gear box?

7. Define the following :

   (a) camber

   (b) castor.

8. Why do we not use brakes with more than 80% efficiency in automobile?

9. What are the major advantages of using hydrogen as fuel in automobiles?

10. What is meant by parallel hybrid configuration?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the electronic engine management system in detail.

Or

(b) (i) Explain briefly the various types of chassis construction with the help of suitable diagrams. (9)

(ii) Explain the working principle of a dry sump lubrication system with a simple schematic layout. (7)

12. (a) (i) Explain how the optimum specified value of the voltage and current outputs are maintained in a regulator? (8)

(ii) Describe a cut-out with an aid of a diagram. (8)

Or

(b) With a schematic layout, explain the working principle of multipoint fuel injection in petrol engines.

13. (a) With a neat sketch, explain the working principle of synchromesh gear box.

Or

(b) Write short notes on the following :

(i) Hotchkiss drive

(ii) Transfer box. (8 + 8)

14. (a) Describe in detail the rack and pinion type manual steering gear by means of a simple sketch and discuss its advantages.

Or

(b) Draw a schematic layout of air brake system and explain the working principle of brake valve with a sketch.

15. (a) Explain the working of fuel cell and list out its advantages over other alternative fuels.

Or

(b) Discuss the use of following alternative fuels in automobile engines (i) LPG (ii) Biodiesel (iii) CNG. (5 + 6 + 5)