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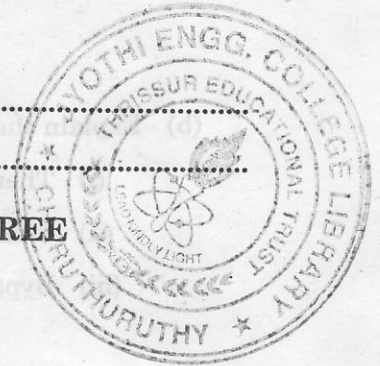
Reg. No.....

**EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, MAY 2011**

ME 04 805 E—AUTOMOBILE ENGINEERING

Time : Three Hours

Maximum : 100 Marks



Answer all questions.

- I. (a) Explain the functions of the suspension system in an automobile.
(b) Why multicylinder diesel engines are used for commercial vehicles ?
(c) Describe the properties of lubricating oil.
(d) Why does a spark plug fail to function ?
(e) What is an overdrive unit ? Mention its advantages.
(f) Name the factors which pertain to steering geometry.
(g) What is a dry charged battery ?
(h) Explain what tests should be made when emission problems are suspected in two stroke engine.

(8 × 5 = 40 marks)

- II. (a) (i) With neat sketches explain any valve mechanism. (9 marks)
(ii) Briefly explain valve tappet clearance. (6 marks)

Or

- (b) (i) Define cylinder liner. Explain different types of cylinder liners with their advantages. (9 marks)
(ii) Sketch the piston of a Petrol engine and label its various parts. (6 marks)

- III. (a) With the help of neat sketches, explain :

- (i) Ignition Coil.
(ii) Contact breaker.
(iii) Distributor.

(15 marks)

Or

Turn over

(b) Explain the following : —

- (i) Thermosyphon cooling system.
- (ii) Steam cooling system.
- (iii) Bypass cooling system.

(15 marks)

IV. (a) (i) Why are differentials necessary ?

(3 marks)

(ii) Explain the construction and working of a differential with a neat sketch.

(9 marks)

(iii) Differentiate between a live and a dead axle.

(3 marks)

Or

(b) Write a short note on :

- (i) Ackermann's Principle of steering.
- (ii) Over steer and under steer.
- (iii) Centre Point Steering.
- (iv) Backlash in steering gears.
- (v) Toe-in and toe-out.

(15 marks)

V. (a) What are the different types of emission control equipments and emission control methods available ? Explain it with neat sketch.

(15 marks)

Or

(b) (i) Explain the charging procedure of a battery.

(ii) Differentiate slow rate and quick rate charging.

(iii) Define battery life.

(15 marks)