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Eighth Semester B.E. Degree Examination, June/July 2013
Automotive Engineering

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Explain the various methods of cylinder arrangements in multi-cylinder engine. (08 Marks)
- b. What is air swirl? What are the methods of swirl generation in CI engine? Explain. (07 Marks)
- c. With a neat sketch, explain the pump circulation system of cooling. (05 Marks)
- 2 a. Explain with a neat sketch, normal and abnormal combustion. (05 Marks)
- b. What are the main functions of a carburetor? Explain S.U. carburetor. (09 Marks)
- c. Draw the sketch of electrical fuel pump and explain its working. (06 Marks)
- 3 a. What are the objectives of supercharging? (02 Marks)
- b. What is the effect of supercharging on the following parameters:
i) Power output ii) Mechanical efficiency iii) Fuel consumption. (06 Marks)
- c. What is meant by pulse turbo charging? What are its advantages and disadvantages? (08 Marks)
- d. With a neat sketch, explain centrifugal type supercharger. (04 Marks)
- 4 a. Name the different types of ignition system? Explain with a neat sketch, magneto ignition system. (07 Marks)
- b. What is an ignition advance? Explain with sketch the centrifugal ignition advance. (06 Marks)
- c. What are the advantages of electronic ignition system using contact breaker. Explain with sketch, transistorized ignition system. (07 Marks)

PART – B

- 5 a. What is the function of a clutch? What are the requirements of a good clutch? (04 Marks)
- b. With a neat sketch, explain the working of constant mesh gear box. (08 Marks)
- c. What is meant by double declutching? Explain the working of overdrive operation. (08 Marks)
- 6 a. What are the components of a drive line? Explain function of each of them. (06 Marks)
- b. With a neat sketch, explain the torque tube drive. (08 Marks)
- c. Define the following and explain their effect on steering: i) Camber ii) King pin angle or steering axis inclination iii) Castor. (06 Marks)
- 7 a. What are the objectives of suspension system? Explain the telescopic type shock absorber, with a neat sketch. (10 Marks)
- b. What are the requirements of braking system? Explain with a neat sketch, working of master cylinder. (08 Marks)
- c. Draw a layout of air brake system. (02 Marks)
- 8 a. Name various pollutants and discuss their ill-effects on human body. (06 Marks)
- b. What are the methods of controlling the engine emission? Explain with a sketch, the function of EGR system. (08 Marks)
- c. Explain the construction and working of a 3-way catalytic converter. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.