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Eighth Semester B.E. Degree Examination, Dec.2014/Jan.2015

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 used in multicylinder engine. (08 Marks)
- b. With neat sketches, explain the construction and purpose of dry and wet liners. (08 Marks)
- c. What are the requirements while designing combustion chamber for SI engine? (04 Marks)
- 2 a. Briefly explain some of the alternative fuels than can be used for IC engines. (04 Marks)
- b. Discuss briefly the mixture requirements for steady state operation of an SI engine. (08 Marks)
- c. With neat sketch, explain the working of electronic fuel injection system. (08 Marks)
- 3 a. Explain the purpose of supercharging. (04 Marks)
- b. With neat sketch, explain any two types of superchargers. (08 Marks)
- c. Give the complete comparison between mechanical supercharging and turbo-charging. (08 Marks)
- 4 a. What are the requirements of an ignition system? (04 Marks)
- b. Explain the working of:
 - i) Rotating armature type and
 - ii) Rotating magneto ignition system (08 Marks)
- c. Explain the purpose of providing ignition advance with the parameters that affect the ignition advance. (08 Marks)

PART – B

- 5 a. Explain the principle of friction clutches. (04 Marks)
- b. With sketch explain the working of single plate clutch. (08 Marks)
- c. What is the principle of over drive? With sketch, explain how overdrive is employed in transmission. (08 Marks)
- 6 a. Write a short note on propeller shaft. (04 Marks)
- b. With neat sketch, explain the forces and torque experienced by rear axle. (08 Marks)
- c. Explain the effect of following on steering:
 - i) Camber ii) King pin angle iii) Included angle iv) Castor (08 Marks)
- 7 a. With a neat sketch, explain the working of telescopic type shock absorber. (08 Marks)
- b. Give comparison between disc brakes and drum brakes. (06 Marks)
- c. Explain the working of power brake system with neat sketch. (06 Marks)
- 8 a. Briefly explain the different types of emissions from IC engines. (06 Marks)
- b. Explain the evaporative emission control systems. (08 Marks)
- c. What are catalytic converters? Briefly explain the reduction of emissions by using catalytic converters. (06 Marks)
