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**Fifth Semester B.E. Degree Examination, Dec.2014/Jan.2015**  
**Auxiliary Systems of Automotive Engines**

Time: 3 hrs.

Max. Marks: 100

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

**PART – A**

- 1 a. Define carburetion. Describe with neat sketches: i) Acceleration pump system; ii) Choke. (10 Marks)  
b. Sketch and explain S.U. carburetor, used in the four wheelers. (10 Marks)
- 2 a. What is petrol injection? What are its advantages and disadvantages? (10 Marks)  
b. What do you understand by: i) Continuous injection system? ii) TIMED injection system? (10 Marks)
- 3 a. Draw a typical heat release diagram of diesel engine and discuss its merits. (10 Marks)  
b. Describe with sketches: i) Pintle nozzle; ii) Pintaux nozzle. (10 Marks)
- 4 a. Describe with the help of a suitable sketch, the working of a Jerk pump system. (10 Marks)  
b. Discuss the requirements at a diesel injection system. (10 Marks)

**PART – B**

- 5 a. Differentiate between the intake and exhaust manifolds. (08 Marks)  
b. Sketch and explain the construction and working of i) Muffler; ii) Helmholtz resonator. (12 Marks)
- 6 a. Discuss the effects of overheating and over cooling of an engine. (08 Marks)  
b. Compare the merits and demerits of air-cooling and water cooling. (08 Marks)  
c. What are functions of radiator? (04 Marks)
- 7 a. List and explain the important properties of lubricating oils. (08 Marks)  
b. Mention the different oil filters. Explain cartridge type oil filter. (06 Marks)  
c. Explain: i) Boundary lubrication; ii) Hydrodynamic lubrication. (06 Marks)
- a. What are the supercharging limits for S.I and C.I. engine? (10 Marks)  
b. Explain the effects of supercharging on following : (10 Marks)  
i) Power output; ii) Mechanical efficiency; iii) Fuel consumption.

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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.