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**Fifth Semester B.E. Degree Examination, June/July.2018**  
**Auxiliary System of Automotive Engines**

Time: 3 hrs.

Max. Marks:100

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

**PART – A**

- 1 a. What is meant by carburetion and carburetor? Describe with a neat sketch “Solex carburetor”. (12 Marks)
- b. Describe with suitable sketches, the following systems of a carburetor.  
i) Acceleration pump system ii) Idling system. (08 Marks)
- 2 a. What is petrol injection system? Differentiate between petrol injection and carburated fuel supply system. (06 Marks)
- b. Briefly the following injection systems with a sketches :  
i) port injection ii) manifold injection. (06 Marks)
- c. With a neat line diagram, explain the working of battery ignition system of four cylinder SI engine. (08 Marks)
- 3 a. Discuss the following methods of injection system : i) Air injection ii) Solid injection. (06 Marks)
- b. Describe the following injection systems with neat sketches :  
i) Common rail direct injection ii) Distributor system. (08 Marks)
- c. With a neat diagram, explain the working of mechanical governor. (06 Marks)
- 4 a. With a neat sketch, explain the working of jerk type fuel injection pump. (10 Marks)
- b. Describe the construction and working of fuel injector. (06 Marks)
- c. Write a short note on nozzles. (04 Marks)

**PART – B**

- 5 a. Why does the exhaust system required muffler? Explain with neat sketch battle type muffler. (07 Marks)
- b. Describe the working of an oil bath–air cleaner. (07 Marks)
- c. Write short notes on : i) Spark arresters ii) Waste heat recovery. (06 Marks)
- 6 a. Why cooling of an IC engine is necessary? (02 Marks)
- b. Describe the following with neat sketches :  
i) Thermostatic cooling system ii) Prescribed water cooling system. (10 Marks)
- c. What is the function of a radiator? With a neat diagram, explain the construction of a radiator. (08 Marks)
- 7 a. With the help of suitable sketch, discuss the wet sump lubrication system. (08 Marks)
- b. With a neat diagram, describe the following :  
i) Full flow type filter arrangement ii) Crank case supercharging. (12 Marks)
- 8 a. What is supercharging? Explain thermodynamic cycle with supercharging. (07 Marks)
- b. Brief the effect of supercharging on the following :  
i) power output ii) fuel consumption. (08 Marks)
- c. What is meant by pulse-turbo charging? Mention its advantages and disadvantages. (05 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.