**AKGEC/IAP/FM/02**

**AJAY KUMAR GARG ENGINEERING COLLEGE, GHAZIABAD**

**DEPARTMENT OF MECHANICAL ENGINEERING**

**SESSIONAL TEST – 2**

Course: B.Tech Semester: V

Session: 2017-18 Section: ME 1,2,3

Subject: I.C Engine & Compressors Sub. Code: NME-505

Max Marks: 50 Time: 2 hours.

**SECTION A**

Attempt **all** Questions. **(5 x 2 = 10)**

1. Explain delay period in CI engine.
2. Explain valve timing diagram of 4 stroke SI engine**.**
3. Explain idling system with diagram.
4. Explain Combustion chamber design in SI engine.
5. Write short notes on Scavenging in 2 stroke Engines.

**SECTION B**

Attempt **all** Questions. **(5 x 5 = 25)**

1. Explain the satges of combustion in C.I Engine.
2. What are the advantages of supercharging? Explain the effect of altitude on power output.
3. Explain normal and abnormal combustion in SI engine. Also factor affecting knocking in SI engine.
4. A four cylinder petrol engine working on two stroke cycle develops 30 KW at 2500 rpm. The mean effective pressure on each piston is found to be 8.0 bar. The calorific value of fuel used is 43900 kJ/kg and brake thermal efficiency is 29%. Calculate the fuel consumption of the engine. Further determine the bore and stroke of each cylinder, if stroke to bore ratio is 1.5. Mechanical efficiency is 80.8%.
5. A single jet simple carburettor giving air-fuel ratio of 15:1, has venturi throat of 3.5 cm diameter, and creates depression of 6.33 cm of Hg at venturi throat. Determine the size of fuel nozzle. Assume coefficient of discharge for air and fuel = 1. Air pressure and temperature at carburettor entrance are 1.013 bar and 16oC respectively. Take density of fuel as 750 kg/m3, and fuel nozzle is at the same level as that of fuel in fuel chamber.

**SECTION C**

Attempt **all** Questions. **(2x7.5 = 15)**

1. Classify fuel injection system. Why the air injection system is not used now a days. Also explain common rail fuel injection system with diagram.
2. Compare battery and magneto ignition system? Sketch the constructional layout of battery ignition system in details.