**BBDNITM**

**MECHANICAL DEPARTMENT**

**SESSION (2018-19)**

**Subject- IC Engine and Compressors [RME-051]**

**Assignment no. 3**

**Theory**

**1.** Explain with neat sketch working Simple Carburetor. Also explain Drawback and application of simple Carburetor.

**2**. With neat sketch explain working principle and constructional detail of Bosch fuel injection pump.

**3.** Describe different types of injection nozzles and discuss their relative advantages and disadvantages.

**4.** What is the function of carburetor? What is carburetion?

**5.** Explain Ignition Requirement. Explain the working of battery ignition system. State its advantages and disadvantages over magneto ignition system.

**6.** Describe a high tension magneto ignition system and compare its advantages and disadvantages with a coil ignition system.

**7.** State the various methods of governing of IC engines and discuss any one of them.

**Numerical**

**8.** A petrol engine consumes 7.5 kg of petrol per hour. The specific gravity of the fuel is 0.75. The air temperature is 25° C. The air fuel ratio is 15. The choke tube has a diameter of 22 mm. Calculate the diameter of the fuel jet of a simple carburetor. Top of the jet is 4 mm above the petrol level in the float chamber. Take coefficient of discharge as 0.82 and 0.7 for air and fuel respectively. Atmospheric pressure = 1.013 bar.

**9.** The venture of a simple carburetor has a throat diameter of 20 mm and the coefficient of air flow is 0.85. The fuel orifice has a diameter of 1.25 mm and the coefficient of fuel flow is 0.66. The petrol surface is 5 mm below the throat. Find a) the air-fuel ratio for a pressure drop of 0.07 bar when the nozzle lip is neglected; b) the air-fuel ratio when the nozzle lip is taken into account; c) the minimum velocity of air or critical air velocity required to start the fuel flow when nozzle lip is provided. Take density of air and fuel as 1.2 and 750 kg/m3 respectively.