B Tech 8th Semester Mechanical
Mid-Term Assignment   May 2020
Subject: Internal Combustion Engines
Maximum Marks = 30
Note: Do Any Three Questions

Q1. Classify Internal Combustion Engines

(10)

Q2. Define the following terms

   (a)   Rated Power and rated speed
   (b)   Compression Ratio
   (c)   Air-Fuel Ratio
   (d)   Brake Specific Fuel Consumption
   (e)   Volumetric Efficiency

(2*5)

Q3. A three cylinder four stroke cycle spark ignition engine is being designed to provide a maximum brake torque of 90 Nm at 3500 rpm. Using the concept of mean effective pressure, calculate the following engine design and operating parameters:

   (a) Engine Displacement Volume
   (b) Bore
   (c) Stroke
   (d) Maximum Rated Power at the mean piston speed of 15 m/sec.

(2.5*4)

Q4.

   (a)   With the help of pressure-crank angle diagram discuss the combustion in spark ignition engines.
   (b)   Discuss maximum brake torque spark timing or MBT timing, with the help of pressure versus crank angle diagram and torque versus spark-advance diagram.

(6,4)

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