SC - 809

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Seat No.	

F.Y.B.Tech. (All Branches) (Semester - I & II) (Revised) Examination, December - 2019

BASIC MECHANICAL ENGINEERING

Sub. Code : 71820

Day and Date : Monday, 09 - 12 - 2019 **Total Marks : 70**

Time : 2.30 p.m. to 5.00 p.m.

Instructions :
1) **Attempt any three questions from each section.**
2) **Figures to the right indicate full marks.**
3) **Assume any additional data if required and mention it clearly.**

SECTION - I

Q1) a) Define first law of thermodynamics with its limitations. **[6]**

b) Air flows through the gas turbine at rate of 5kg/sec . It enters with velocity of 150m/sec and enthalpy of 1000 kj/kg and at exit the velocity is 120 m/sec and enthalpy of 600 kj/kg. If air passing through the turbine losses 30 kj/kg heat to the surrounding. Calculate the power developed. **[6]**

Q2) a) Explain with fig. different component of I.C. Engines. **[6]**

b) Compare Four stroke and Two stroke Engine. **[6]**

Q3) a) Explain Vapour absorption refrigeration system. **[6]**

b) Define following terms **[5]**

i) Dew Point Temperature

ii) Relative Humidity

iii) Wet Bulb Temperature

iv) Dry Bulb Temperature

v) Saturated Temperature

P.T.O.

Q4) Write short note (Any Two) **[12]**

a) Joules Experiments

b) Define terms

i) TDS

ii) BDS

iii) Compression ratio

iv) Swept volume

c) Properties of Refrigerant

SECTION - II

Q5) a) Describe the working of Hydroelectric power plant with neat diagram. State its advantage and disadvantages. **[8]**

b) Write the differences between renewable and non renewable energy resources. **[4]**

Q6) a) In flat belt Drive the initial tension is 2000N.The coefficient of friction between the belt & pulley is 0.3 & angle of lap on smaller pulley is 150* smaller pulley has radius of 200mm & rotayes at 500 rpm. Find power in KW transmitted by belt. **[7]**

b) Write note on Classification of Gear. **[5]**

Q7) a) Explain in detail the steps in casting process with neat sketches. **[6]**

b) Explain with neat sketches the Turning and Knurling operations done on Lathe Machine. **[5]**

Q8) a) Compare belt drives, chain drives and gear drives. **[6]**

b) Write Note on Biodiesel. **[5]**

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