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Roll No. 0244

FIRST SEMESTER

B.Tech. [GROUP - B]

MID SEMESTER EXAMINATION

September-2013

ME115 BASIC MECHANICAL ENGINEERING

Time: 1 Hour 30 Mins

Max. Marks : 20

Note : Answer any *five* questions from part A and any *five* questions from part B

Assume suitable missing data, if any.

PART A

1   What is thermodynamic system and explain the various types of thermal equilibrium.   2
2   If a gas of volume 6000 cm^3 and a pressure of 100 kpa is compressed quasi statically according to PV^2 = constant until the volume becomes 2000 cm^3. Determine the final pressure and work transfer.   2
3   Explain the first law of thermodynamics for a closed system undergoing a cycle.   2
4   Explain the first law of thermodynamics for a closed system undergoing change of state.   2
5   Derive expression for enthalpy and explain that enthalpy of an ideal gas depends only on temperature.   2
6   Derive and explain expression for specific heat at constant volume and specific heat at constant pressure.   2

PART B

7.   Draw the Gating system diagram and label the elements.   2
8.   Discuss the difference between split pattern and loose piece pattern.
                                                                     2
9.   Name the pattern allowances and briefly explain. them   2
10. Write the properties of molding sand.   2
11. Discuss the different foundry tools.   2
12   Briefly explain the shielded metal Arc welding with figure.   2
13   What are the functions in coating electrode.   2

$6000 \times 100 - 2000 \times 900$

$\dfrac{10^5 [6-18] \times 10^9 \times 10^3}{-12 \times 10^2} = -$