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B.E.(Full Time) DEGREE END SEMESTER EXAMINATIONS – NOV/DEC 2013
MATERIALS SCIENCE AND ENGINEERING
THIRD SEMESTER (REGULATION 2012)
ML 8303 – THERMODYNAMICS OF MATERIALS

Time : 3 Hours

Max. Marks : 100

Answer ALL Questions

PART – A (10 X 2 = 20 MARKS)

1. What do you understand by state function? Give example.
2. Distinguish intensive and extensive properties.
3. Write down the Thomsen's statement.
4. Mention the significance of the combined first and second laws on thermodynamics.
5. What do you understand by the degree of measure of irreversibility?
6. Define the term complexions
7. State Hess law.
8. Define mole fraction.
9. What do you understand by 'thermodynamic activity'?
10. What is solid electrolyte?

PART – B (5 X 16 = 80 MARKS)

11. Explain why the specific heat capacity at constant pressure is always greater than specific heat capacity at constant volume. Discuss the contribution of inter-atomic forces to specific capacity
12. a) i) Obtain the relationship between pressure and volume of an ideal gas undergoing reversible adiabatic process. (6)
ii) An ideal gas at 300 K has a volume of 15 liters at a pressure of 15 atm. Calculate
 - I) Final volume of the system,
 - II) Work done by the system