

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 What is heat transfer? Explain the various modes of heat transfer.

Q.4 Write a short note on:-

- a) Natural lighting
- b) Maintenance of electric power

Q.5 Explain Hess's law of constant heat summation.

Q.6 What is Gibb's Helmholtz equation? Explain the equation and its significance in detail.

Q.7 How temperature profile in fuel fired furnaces is different from electric furnaces? Explain.

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**3rd Sem. / Printing Mech.
(Foundering and Forging)
Subject : Energy Dynamics**

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1
- a) What is thermal energy?
 - b) What is air pollution?
 - c) Write difference between heat transfer and thermodynamics.
 - d) Define combustion.
 - e) What are different types of fuels?
 - f) Give full forms of CFL.
 - g) Define low calorific value.
 - h) Define exothermic reaction.

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- i) What is enthalpy?
- j) Define entropy.
- k) What are units of entropy.
- l) Define alloying.
- m) Give types of inclusion.
- n) Define pollution.
- o) What are units of energy?
- p) What is stored energy?
- q) What is path function?
- r) What is energy regulator?

SECTION-B

Note: Short answer type questions. Attempt any ten parts
10x4=40

- Q.2
- i) What are the main reasons of air pollution?
 - ii) Write a short note on energy regulation.

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- iii) Explain illumination of foundries.
- iv) Why speed regulation of motors is required?
- v) Explain first law of thermodynamics.
- vi) What is Kirchoff's equation?
- vii) State the methods of calculating free energy?
- viii) What are harmful effects of inclusion?
- ix) Explain degasification.
- x) What is dephosphorisation?
- xi) What is energy temperature diagram?
- xii) What is significance of ellingham diagram?
- xiii) Explain arhennius equation.
- xiv) What are various safety control of pollution in furnaces?
- xv) What is temperature profile of a furnace?

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