

SECTION-C

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

Q.3 What is corrosion. What are the effects & prevention of corrosion.

Q.4 What is heat treatment. Explain any three methods of heat treatment in detail.

Q.5 Explain the Iron-carbon phase diagram.

Q.6 Explain is bronze. Explain the different types of bronzes with their properties & uses.

Q.7 Write Short note on any two :

(a) Stainless steel.

(b) Protective coating materials.

(c) Heating & cooling in heat treatment.

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Roll No.

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4th Sem. / Mechanical Engg. (CAD / CAM / CNC)

Subject : Material Science

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

Q.1 a) Give any two examples of Non-Metals.

b) Define Ductility.

c) What do you mean by Nil Solubility.

d) Define Plasticity.

e) What is the classification of material.

f) Define thermal conductivity

g) Write any two uses of cast Iron.

h) Define corrosion.

i) What is the effect of phosphorous on the property of steel .

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084542

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084542

- j) Write two uses of heat resistant steel.
- k) Give any two examples of Non-ferrous metals.
- l) Write two properties of stainless steel.
- m) Define tempering.
- n) What do you mean by adhesives.
- o) Define hardening.
- p) Write two uses of Bronze.
- q) What is the classification of steel.
- r) Write two uses of copper.

SECTION-B

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

- Q.2
- i) Explain the cooling curve pure metals?
 - ii) Explain the physical properties of metals.
 - iii) Explain the phase diagram for partial solubility.
 - iv) What is the composition & uses of cast iron.

(2)

084542

- v) What is the effect of grain size on mechanical properties.
- vi) What is the composition, Properties & uses of High speed steel.
- vii) On what basis the identification of metals & alloy is done.
- viii) What is the composition, properties & uses of Aluminium alloy?
- ix) What is the principle of heat treatment.
- x) What are the applications of adhesives for industrial uses.
- xi) What are the various quenching methods used in heat treatment.
- xii) What is the classification of steel.
- xiii) What do you mean by TTT curve.
- xiv) Write properties & uses of Tin.
- xv) Explain the various allotropic forms of iron.

(3)

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