[6186]-559

S.E. (Robotics & Automation Engineering) (Insem)
MATERIALS SCIENCE AND ENGINEERING METALLURGY
(2019 Pattern) (Semester - III) (211503)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:
1) *Solve Q.1 or Q.2, Q.3 or Q.4.*
2) *Figures to the right indicates full marks.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Assume suitable data if necessary.*
5) *Use of Logarithmic Table, Slide rule is Electronic pocket calculator is allowed.*

Q1) a) Differentiate between slip and twinning. **[7]**

b) Give the principal of Brinell hardness test? Which are the factors affect Brinell Hardness test. **[8]**

OR

Q2) a) What is Erichsen Cupping Test? **[7]**

b) Write a short note on the following: **[8]**

i) Atomic packing factor

ii) Imperfection in crystal

Q3) a) What you meant by polymorphism? **[7]**

b) Draw equilibrium diagram that illustrate the existence of a Peritectic reaction. **[8]**

OR

Q4) a) Explain solidification of pure metals. **[7]**

b) Define following terms with suitable example. **[8]**

i) Phase   ii) Alloy

iii) Component   iv) Solid Solution

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