**L.E.COLLEGE MORBI**

**MECHANICAL ENGINEERING DEPARTMENT**

**MID SEM EXAMINATION AUG-2017 BE SEM 3rd MECHANICAL**

**MATERIAL SCIENCE & METALLURGY 2131904**

**TOTAL MARKS=30** **TIME: 1.5 Hrs** **DATE:21/8/2017**

**Instructions: 1. Make suitable assumptions wherever necessary.**

**2. Figures to the right indicate and Answer must be in brief :full marks.**

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|  | ATTEMPT ANY SIX | |  |
| Q1 | A | What is lath martensite? | 05 |
|  | B | Define sizing |  |
|  | C | What is curie point? |  |
|  | D | Following figure is represent Which heat treatment process.  C:\Users\rupesh\Desktop\1.png |  |
|  | E | What is a univariant system? |  |
| Q2 | “Eutectic composition usually does not show coring where as a solid solution may show coring” why? | | 05 |
| Q3 | “ Annealing is not final heat treatment process of hypereutectoid steel”. Justify | | 05 |
| Q4 | Why FCC metals are in general more ductile than BCC and HCP? | | 05 |
| Q5 | Evaluate “ it is difficult to detect irregular shape radial defects in large rings by magnetic particle test”. | | 05 |
| Q6 | List the characteristic required for a metal powder. Explain any three in term of importance in powder metallurgy process. | | 05 |
| Q7 | With neat sketch of iron-iron carbide diagram, determine the amount of the following phases present in a 1.1% carbon steel under equilibrium conditions. (i) Austenite and cementite just above eutectoid temperature.  (ii) Pro eutectoid cementite, pearlite and total cementite at room temperature. | | 05 |
| Q8 | “Hardening of steel is followed by tempering”. Justify the statement. | | 05 |