Reg. No. | | | | | | | | | | | | |

Question Paper Code : 91644

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fourth Semester

Mechanical Engineering

ME 2253/ME 44/ME 1253/080120017/10122 ME 304 — ENGINEERING MATERIALS AND METALLURGY

(Common to Automobile Engineering, Mechanical and Automation Engineering)

(Regulation 2008/2010)

(Common to PTME 2253/10122 ME 304 — Engineering Materials and Metallurgy for B.E. (Part–Time) Third Semester – Mechanical Engineering – Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Eutectoid.

2. What is Peritectoid reaction?

3. Define Recystallisation.

4. What is Hardenability?

5. What is Twinnin?

6. What is Charpy?

7. What is HSLA?

8. Precipitation Hardening - Define.

9. What is Polymer?

10. What is Fibre reinforced plastics?

PART B — (5 × 16 = 80 marks)

11. (a) What is Interstitial and explain? Explain in detail about Eutectic reactions.

Or

(b) Draw Iron Carbide diagram and explain.

12. (a) Explain in detail about Spheridizing. What is tempering of Steel? Explain.

Or

(b) What is CCR? Write difference between Normalising and Tempering.

13. (a) What is Slip? Explain in detail of Testing of materials under shear loads.

Or

(b) Define Hardness. Explain Fatigue and Creep Tests.

14. (a) (i) What is Cupronickel? Explain its applications. (8)

(ii) Effect of Si on steel – Discuss. (8)

Or

(b) Write short notes on the following:

(i) Tool steels (6)

(ii) White malleable Iron (5)

(iii) Bearing Alloys. (5)

15. (a) Explain in detail the following:

(i) PET (6)

(ii) PC (5)

(iii) ABS. (5)

Or

(b) Write short notes on

(i) Phenol Formaldehydes (8)

(ii) Applications of PMMA and PPO. (8)

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