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MT

17/12/15

QP Code : 5473

(3 Hours)

[Total Marks : 100

- N. B. 1) Question No. 1 is compulsory.
 2) Attempt any three questions from remaining five questions.
 3) Figures in bracket indicate marks.
 4) Draw neat well labeled sketches.

Q. 1	a) Baushinger's effect related to fatigue of metal b) Creep Test c) Effect of Alloy on TTT diagram d) Critical resolved shear stress e) Crystal Imperfection	(5x4=20)
Q. 2	A) What do you mean by Composite materials? Explain their properties and practical applications. B) What is Fatigue? Explain fatigue testing in detail.	(10) (10)
Q. 3	A) Draw Fe-Fe ₃ C Diagram and Explain cooling of 1.0 % C alloy in the Fe-Fe ₃ C Diagram. B) Explain Flame Hardening and Induction Hardening.	(10) (10)
Q. 4	A) Draw and explain Time Temperature Transformation (TTT) diagrams of 0.8 % C alloy. B) Derive an expression for Griffith theory of brittle fracture.	(10) (10)
Q. 5	A) What is plastic deformation? Distinguish between slip and twin mechanism of plastic deformation. B) What is case hardening? Explain carburising in detail	(10) (10)
Q. 6	Write short note on any four a) Dislocation Jog and Kink. b) Austempering c) Bain's distortion model for martensitic transformation d) Engineering Materials e) Annealing	

MD-Con. 11580-15.