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Printed Pages : 3

TCH-702

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 0801**

Roll No.

B. Techn.

(SEM. VII) EXAMINATION, 2008-09  
MATERIAL TECHNOLOGY

Time : 3 Hours]

[Total Marks : 100

- Note :
- (1) Attempt all questions.
  - (2) Be precise in your answer.

1. Attempt any four parts of the following : 5×4=20

- (a) What is the difference between solid solution and solid mixture? Give one example of each of these two.
- (b) What is the difference between peritectoid and eutectoid reaction?
- (c) Show a phase diagram of partially soluble eutectic system and describe what phases exist in various regions.
- (d) Define work hardening. What are disadvantages of hot working?
- (e) What does ever rules indicat ? Describe the rule.
- (f) What is cold working? Give advantages of hot working.

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2 Attempt any four parts of the following :  $5 \times 4 = 20$

- (a) What is the difference in hardness and brittleness?
- (b) What is the difference in elasticity and plasticity?
- (c) Define full annealing and spheroidizing in two or three lines.
- (d) Define hardening and tempering in two or three lines.
- (e) Define galvanic corrosion and describe ways to prevent it.
- (f) What is full form of 'TTT' in 'TTT' diagram? What is its use?

3 Attempt any four parts of the following :  $5 \times 4 = 20$

- (a) Define alloy, what is the purpose of alloying?
- (b) How many kinds of alloy steels are found commonly?
- (c) What is austenitic stainless steel? What is its use?
- (d) What is the material used in making ball bearing? How is this material made?
- (e) What is mild steel? What are its major usages?
- (f) What is the difference between cast iron, wrought iron and steel?

4 Attempt any four parts of the following :  $5 \times 4 = 20$

- (a) What are ceramic materials and what are two common ways of classifying them? Name four common ceramic materials used commonly in industry.
- (b) What is phosphor bronze and where it is used?
- (c) What is the difference between chain and cross linked polymer? Name some common polymers with these structures.
- (d) What is gunmetal and where it is used?
- (e) How many zinc alloys are normally used in industry, give their names and compositions?
- (f) What are glass formers, intermediates and modifiers? What are their usages?

5 Write short notes on the following : 20

- (a) Superconductors
- (b) Optical fibres
- (c) Nanomaterials

