

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

Paper ID : 140859

Roll No.

B.TECH.

Theory Examination (Semester-VIII) 2015-16

ADVANCED MATERIAL TECHNOLOGY

Time : 3 Hours

Max. Marks : 100

Section-A

1. Attempt all parts. Each question carries two marks. (2×10 = 20)
- (a) Define elasticity and viscoelasticity.
 - (b) Write about gun metal.
 - (c) Explain fatigue properties of skin.
 - (d) What do you mean by radioactive proof materials?
 - (e) Write about lead and its main ores. *uptuonline.com*
 - (f) Define annealing and tempering.

- (g) Classify various types of steels.
- (h) Define spherodising.
- (i) Explain about refractory materials.
- (j) What are the advantages of heat treatment?

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Section-B

2. Attempt any FIVE Questions. Each question carries ten marks. [10×5=50]

- (a) What is stainless steel? Give the classification of steel.
- (b) Explain about
 - (i) Heat Exchangers
 - (ii) Moderators.
- (c) Explain brass and bronze with their properties and applications.
- (d) Explain and classify case hardening with neat diagram.
- (e) Write about aluminium. Also explain about its alloys and their, properties, applications.

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- (f) Write short notes on
 - (i) Stress - strain behaviour of bone
 - (ii) Smart materials.
- (g) What are the biocompatible materials? Also explain about their applications.
- (h) Explain about various materials for nuclear fuels in fission and fusion reactors.

Section-C

3. Attempt any TWO Questions. Each question carries fifteen marks. (15×2=30)

- (a) Define and explain objectives of heat treatment. Explain annealing process with its types.
- (b) Explain about different type of cast irons with composition, properties and applications.
- (c) Explain about principle and construction of nuclear reactor with neat diagram.

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