

IMPORTANT ANNOUNCEMENT

To: All members appearing
at the AMIIM Examinations

Dear Members,

This is to inform that on recommendation of IIM Examinations & Education Committee your Council has approved the Revised Syllabus for Basic Metallurgy of Part I AMIIM Examinations, which will be effective from June 2015.

Therefore, all members appearing from June 2015 should follow the revised Syllabus given hereunder:

Revised Syllabus for Basic Metallurgy (105) (Effective from June 2015 AMIIM Examinations)

Contents:

- 1 Introduction to ore beneficiation: Crushing, grinding, classification and concentration, electro static and magnetic separation, flotation. – Ref 1.
- 2 Application of metallurgical thermodynamics in pyro-, hydro- and electro- metallurgical processes: Basic principles of unit processes in extractive metallurgy like calcination, roasting, smelting, converting, leaching, electro-winning and electro-refining. – Ref 1 and 2.
- 3 Structure and properties of metals and alloys: Crystal structures-unit cells, packing factor, crystal defects. – Ref 3.
- 4 Elements of metallography and pyrometry: Sample preparation through grinding, polishing and etching, Principle and optical systems of metallurgical microscope, macroscopy and microscopy. Elements of pyrometry, thermo-couples and their uses. – Ref 4.
- 5 Alloys and Alloy Systems: Cooling curve of a pure metal and solid solution. Gibbs Phase Rule, Hume-Rothery's rule for alloy formation. Different types of simple binary phase diagram – Isomorphous, Eutectic, Peritectic and Eutectoid. Introduction to Iron-carbon phase diagram. – Ref 3 and 4.
- 6 Mechanical properties and testing of metals and alloys: Definitions; hardness and its measurement techniques; evaluation of tensile properties-stress-strain diagrams. Ref 4 and 5.
- 7 Metal Processing Techniques: Introduction to principles and processes of important metal processing techniques such as casting, rolling, forging, welding. – Ref 5.

References:

1. Extraction of Non-Ferrous Metals by H. S. Ray, R. Sridhar and K. P. Abraham
2. Principles of Extractive Metallurgy by A. Ghosh and H. S. Ray
3. Materials Science and Engineering by V. Raghavan
4. Introduction to Physical Metallurgy by S. H. Avner.
5. Manufacturing Technology: Foundry, Forming & Welding by P. N. Rao

Date: 8th September 2014

Bhaskar Roy
Secretary General