

I B.Tech Supplementary Examinations, November/December 2005**METALLURGICAL ANALYSIS
(Metallurgy & Material Technology)****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. (a) What is the difference between the gross sample and the laboratory sample with reference to solids?
(b) Describe various methods of reduction of bulk sample. [8+8]
2. (a) Mention the factors that should be taken into consideration in choosing an analytical method.
(b) Give the advantages and disadvantages of classical methods of analysis. [8+8]
3. Explain the determination of Nickel in Nickel-Silvers, Cupro-Nickels and high tensile brasses. [16]
4. (a) How is Tungsten estimated by phenazone method in ferrous materials.
(b) Discuss the Silicon estimation in Ferrous materials by Gravimetric method. [8+8]
5. (a) List the different methods for determining iron content, in Iron oxes.
(b) Discuss the principle involved in the determination of iron content in iron ores by any one method with relevant equations. [8+8]
6. (a) Explain in detail any one of the colorimetric methods.
(b) Explain the important basic principles of chemical analysis.
(c) List the advantages of using photoelectric cells in colorimetric analysis. [5+5+6]
7. (a) Write the Nernst equation and name the parameters.
(b) Name various chemical reactions involved in potentiometric titrations and briefly explain each one of them.
(c) Discuss null point potentiometry? [5+6+5]
8. (a) Discuss determination of trace lead in a ferrous alloy using flame photometer.
(b) Explain the features associated with double beam atomic absorption spectrophotometers. [8+8]
