

GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering - SEMESTER-IV • EXAMINATION – SUMMER • 2015****Subject Code: 342104****Date: 15-05-2015****Subject Name: Metallurgical Analysis****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered to be Authentic.

- Q.1** (a) Describe Carbon and sulphur determination by Rolla's Apparatus. **07**
(b) Explain determination of copper from brass by electrolytic method. **07**
- Q.2** (a) Advantage and limitation of Modern Method of Analysis. **07**
(b) Explain the determination of Mg in steel by volumetric method. **07**
- OR**
- (b) Describe the determination of Ni from steel by di methyl glyoxime method. **07**
- Q.3** (a) Define sampling, and explain sampling of ores. **07**
(b) Difference Between
(1) Qualitative analysis and Quantitative analysis **04**
(2) Molecular and equivalent weight. **03**
- OR**
- Q.3** (a) List the importance of metallurgical analysis in Metallurgy. **07**
(b) Difference Between
(1) Gravimetric analysis and Volumetric analysis. **04**
(2) Hydrolysis and Neutralization. **03**
- Q.4** (a) (1) Law of mass action. **04**
(2) What is pH? Explain. **03**
(b) What is buffer solution. **07**
- OR**
- Q.4** (a) (1) Solubility product. **04**
(2) Titration curve. **03**
(b) Importance of indicator in Titration, List the types of indicator with their working range. **07**
- Q.5** (a) Explain the Principle of spectroscopy. **07**
(b) Explain (1) Principle of Electrolysis. **04**
(2) Potentiometric analysis **03**
- OR**
- Q.5** (a) Explain principle of colourimetry. List different method of colourimetry **07**
(b) Derive Beer-Lambert Law. **07**
