

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172107**Date: 28/12/2012****Subject Name: Surface Coating Technology (Departmental Elective-I)****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain and compare Sand blasting and Shot blasting methods of surface preparation. **07**
 (b) Why anodizing is best suited for aluminium? Explain aluminium anodizing process. **07**
- Q.2** (a) Describe electroplating of copper. Explain factors affecting electrodeposition. **07**
 (b) What do you mean by surface engineering? By using suitable examples justify the role of surface engineer in the field of metallurgy. **07**
- OR**
- (b) Give the need of surface preparation. Explain Vapor Phase Degreasing technique for surface preparation. **07**
- Q.3** (a) Describe the Phosphating coating technique. Give advantages. **07**
 (b) Explain Galvanizing Process and list advantages & application. **07**
- OR**
- Q.3** (a) What do you mean by Chemical Conversion Coating? Explain Chromating method. **07**
 (b) Write the operation, mechanism, advantages and disadvantages of hot dipping process. **07**
- Q.4** (a) Define vapour deposition and Explain physical vapour deposition coating technique. **07**
 (b) Explain mechanism of sputtering technique. Enlist applications. **07**
- OR**
- Q.4** (a) Explain Chemical vapor deposition technique. Compare it with Physical vapor deposition. **07**
Q.4 (b) What do you mean by ion implantation? Explain its mechanism of material protection by surface modification. **07**
- Q.5** (a) Compare the Chromizing and Aluminizing diffusion coating methods. **07**
 (b) Explain Carbonitriding process. What is penetration depth? Mention factors affecting penetration depth. **07**
- OR**
- Q.5** (a) What is Plasma? Discuss the Plasma spray coating Process and compare with thermal spray coating. **07**
 (b) What is carburizing? Mention different carburizing processes and Discuss the gas carburizing process in detail. **07**
