

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014****Subject Code: 172107****Date: 31-05-2014****Subject Name: Surface Coating Technology****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

**Q.1 (a)** Explain the importance of surface engineering. Discuss the basic aspects for the selection of a particular surface preparation method. **07**

**(b)** What is anodizing? Explain aluminium anodizing process. **07**

**Q.2 (a)** Explain hot dip galvanizing process in brief. Mention process controlling factors. **07**

**(b)** What is shot peening? Explain working of shot peening process. Give its advantages. **07**

**OR**

**(b)** Compare the Shot blasting and Hydroblasting surface preparation processes. **07**

**Q.3 (a)** What do you mean by conversion coating? Describe the process steps for conversion coating. **07**

**(b)** Define Carbonitriding. Describe the Carbonitriding process. **07**

**OR**

**Q.3 (a)** What is phosphating? Explain phosphating process for iron and zinc. **07**

**(b)** Critically compare the Boronizing and Boronitriding processes. **07**

**Q.4 (a)** What is electroless plating? List types of electroless plating. Discuss any one in brief. **07**

**(b)** What is carburizing? Briefly discuss solid carburizing process. **07**

**OR**

**Q.4 (a)** Describe electroplating process for copper. Explain factors affecting electrodeposition. **07**

**(b)** What is plasma? Explain plasma spray coating method. Give its advantages and applications. **07**

**Q.5 (a)** What is chemical vapor deposition? Explain in detail with mechanism, advantages and limitations. **07**

**(b)** What do you mean by Surface modification? Write a note on Surface modification by ion beams. **07**

**OR**

**Q.5 (a)** Explain Physical vapor deposition (PVD) by evaporation. How Multicomponent deposition is carried out in PVD. **07**

**(b)** What is sputtering? Write its types. Explain any one method of sputtering. **07**

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