

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2172107****Date: 19/11/2018****Subject Name: Surface Coating Technology****Time: 10:30 AM TO 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.

		MARKS
Q.1	(a) State the requirement of coating by giving suitable example of applications.	03
	(b) List the various properties developed on the surface due to surface coatings along with name of coating.	04
	(c) Critically compare Mechanical, Chemical & Electro chemical methods of surface preparations.	07
Q.2	(a) What are the different types of Phosphating process ? state their application with suitable example	03
	(b) State the role of oxide film in Aluminium anodizing and List the Process parameters of Anodizing Process.	04
	(c) Explain Principle of electrolytic plating process and compare it with Electro less plating. Enlist components subjected to these type of plating with examples.	07
	OR	
	(c) Write the operation, mechanism, advantages and disadvantages of Hot dipping process	07
Q.3	(a) Define Pickling. State Purpose of Pickling & give name of Pickling Chemicals	03
	(b) Write short note on Electro less nickel plating.	04
	(c) Explain various factors affecting Electrodeposition	07
	OR	
Q.3	(a) Define Sputtering? Draw Schematic only.	03
	(b) Compare Physical Vapour deposition & Chemical Vapour deposition.	04
	(c) Explain chemical vapour deposition process with mechanism, advantages. Disadvantages and applications	07
Q.4	(a) What is thermal spray coating. How it can be achieved?	03
	(b) How Stainless Steels can be protected? Which Surface treatment do you suggest for it?	04
	(c) Discuss plasma spray coating technique with its advantages over other techniques	07
	OR	
Q.4	(a) Suggest type of surface treatment needed for removing Tarnishing on Silver ornaments.	03
	(b) Compare Liquid Carburizing & Gas Carburizing in terms of media used, quality and productivity of the process.	04
	(c) What is plasma Nitriding ? What are its advantages over other Nitriding Processes. How it can be achieved ?	07

- Q.5** (a) List different quality tests of Electroplated article. **03**
(b) Discuss & draw the defects found in Electroplated objects and state the causes of it. **04**
(c) Describe Electroplating of Copper. Explain factors affecting Electrodeposition **07**

OR

- Q.5** (a) What is Passivation? Why it is required for Stainless Steels ? **03**
(b) What is surface modification by Ion beam implantation? Discuss with example. **04**
(c) State the type of Surface Engineering on the following engineering components 1. Kitchen utensils 2. Car body 2. Engine Valves 3. Decorative Ash tray 4.Plumbing pipes 5. Water taps 6. Car wheel rim 7. Bicycle body **07**

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