

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– VII (NEW) EXAMINATION – WINTER 2021****Subject Code:2172107****Date:25/11/2021****Subject Name:Surface Coating Technology****Time:02:30 PM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
<b>Q.1</b>	(a) Explain sand blasting process for surface preparation.	<b>03</b>
	(b) What is vapour phase degreasing? Explain in detail.	<b>04</b>
	(c) What is shot peening? Explain working of this process. Give its advantages.	<b>07</b>
<b>Q.2</b>	(a) Explain the importance of surface engineering.	<b>03</b>
	(b) What is anodizing? Give applications.	<b>04</b>
	(c) Compare chromating and phosphating processes.	<b>07</b>
<b>OR</b>		
	(c) Explain galvanizing in detail.	<b>07</b>
<b>Q.3</b>	(a) Why is moderate temperature used during electroplating?	<b>03</b>
	(b) Describe the use of ion beam implantation in surface modification.	<b>04</b>
	(c) Explain plasma spray coating method. Give advantages and applications.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Discuss factors affecting bond strength in thermal spray coating.	<b>03</b>
	(b) How surface composites differ from normal composites? Enlist their advantages.	<b>04</b>
	(c) Discuss principle of Electroplating & explain setup used for it with a neat sketch.	<b>07</b>
<b>Q.4</b>	(a) Differentiate physical vapor deposition and chemical vapor deposition.	<b>03</b>
	(b) Explain the thermal spray coating processes.	<b>04</b>
	(c) What is Physical vapor Deposition? Discuss evaporation method of PVD.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain effect of spray gun on coating properties.	<b>03</b>
	(b) Explain electroless plating.	<b>04</b>
	(c) What is chemical vapor deposition? Explain in detail with mechanism, advantages, Disadvantages and applications.	<b>07</b>
<b>Q.5</b>	(a) Write short note on aluminizing.	<b>03</b>
	(b) Briefly discuss gas carburizing.	<b>04</b>
	(c) Explain the use of Friction stir processing in Surface composites manufacturing.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Compare the Boronizing and Boronitriding.	<b>03</b>
	(b) Explain the carbonitriding process.	<b>04</b>
	(c) Briefly discuss solid carburizing. Describe Process parameters and applications.	<b>07</b>

\*\*\*\*\*