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SARDAR PATEL UNIVERSITY

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M.Sc. (3<sup>rd</sup> Semester) Surface Coating Technology Examination (CBCS), December 2012

PS03CSCT03: Technology of Architectural and Industrial Coatings and Construction Chemicals

Time: 02:30 pm to 5:30 pm

Tuesday, 4th December 2012

Total Marks: 70

- Q.1 Choose the correct answer from the followings.
- Q.1.1 Which is the first coat on the substrate. 1
- (a) Primer (b) Semi Glossy paint
- (c) Undercoat (d) Enamel
- Q.1.2 Synthetic Enamel Black is formulated at PVC 1
- (a) 35 (b) 5
- (c) 15 (d) Zero
- Q.1.3 Which of the following is not a 2-resin system 1
- (a) NC lacquer (b) Stoving Enamel
- (c) Air Drying Enamel (d) Powder Coating
- Q.1.4 Which of the following is solvent for Road Marking Paint to be used on tar road 1
- (a) GT (b) Butyl Acetate
- (c) MEK (d) IMS
- Q.1.5 Which of the following is not a NC lacquer ingredient 1
- (a) Nitocellulose (b) Butyl Acetate
- (c) Long oil Alkyd resin (d) Di Butyl Phthalate
- Q.1.6 Which of the following is not a Novelty Finishes. 1
- (a) Winkle Finish (b) Hammer tone Paint
- (c) Corrosion Resisting Paint (d) Stipple Paint
- Q.1.7 PCM is the full name of \_\_\_\_\_ 1
- (a) Polymer Chemical Modifiers (b) Phase Change Material
- (c) Polymer modified Concrete Mortar (d) None of these.
- Q.1.8 Adhesives and Sealant shared one common characteristics. 1
- (a) Absorption (b) Static Repulsion
- (c) Adhesion (d) Steric repulsion.

Q.2 Attempt any Seven Questions:

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- (a) Write the formulation of Synthetic Putty. Explain
- (b) How Etch primer is formulated and effected
- (c) Write the curing reaction mechanism at elevated temperature in non oxidizing alkyd-amino resin system.
- (d) Write 8 important properties of Water.
- (e) Illustrate a Coalescence phenomena in Latex polymers.
- (f) Write in brief about Lime colors.
- (g) Define Non-Structural Adhesives.
- (h) Define Sealant. How Sealant are classified by its performance.
- (i) Write in brief about Air-Entraining Admixtures used in Concrete

- Q.3 a What are the different types of Pigmented surface Coatings. 6
- Q.3 b What should be the essential requirements of primers for the ferrous substrate? Explain the formulation of Primers for ferrous and wooden substrate. 6

Or

- Q.3 b What are different types of Road Marking Paint. Highlight their characteristics. Give a brief account of Hot melt road marking paint. 6
- Q.4 a What types of Nitrocellulose is used in NC based compositions? Explain the technology of NC lacquers in details. 6
- Q.4 b Distinguish between Latexes system and Water reducible polymers system? 6

Or

- Q.4 b What are the commercially available Latexes? Write the chemical structure of one of them from each class. 6
- Q.5 a What are the co-solvents and neutralizing agents in water reducible surface coating resin system? Explain in brief about 'Rheology' of Water Reducible polymer system. 6
- Q.5 b What are the thermosetting types of Powder Coatings? How are they manufactured and applied? 6

Or

- Q.5 b What are the different types of Pigmented Acrylic composition? Explain the formulation of exterior acrylic washable distemper. 6
- Q.6 a Write the Advantages and Disadvantages of Types of Adhesives Used in the Building and Construction Industry 6
- Q.6 b Classify the commercially available polymer latexes for PCM. Write the general requirements for PCM. 6

Or

- Q.6 b Explain with examples of Sub-Sectors of the Overall Construction Market for Adhesives and Sealants 6