B. Tech.

CARRY OVER EXAMINATION, 2007

COMPONENTS OF COATING MEDIA

Time : 2 Hours] [Total Marks : 50

Note : Attempt all questions.

1 Attempt any two parts of the following : $7 \times 2 = 14$
   
   (a) Name ten Fossil/Semi-fossil type of natural resins. Write down their properties, and suggest their uses in varnish making.

   (b) Discuss commercial production of Gun Rosin and Wood Rosin in detail. Write down names of different grades of Rosin with their designation, softening point, acid value, saponification value and unsaponifiable matter.

   (c) How is Lac obtained from natural sources? Enumerate different kinds of Lac. Discuss physical and chemical modifications of lacs carried out to improve their properties as film formers.

2 Attempt any two parts of the following : $6 \times 2 = 12$
   
   (a) Related to Nitrocellulose-based coatings, explain Resin Blush, Moisture Blush, Solvent Release and Rate of Evaporation.

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(b) Name Three derivatives of Cellulose used in water-borne coatings. Discuss structure-property relationship of the most commonly used derivative. Suggest its specific uses.

(c) What is Isomerized Rubber? How is it prepared in industry? Write down its properties and uses.

3 Attempt any two parts of the following: 6×2=12

(a) What are the functions of Volatile Solvents in organic coatings? What are Strong, Moderate and Weak solvents? How can they affect the properties of coating films?

(b) Discuss Chlorinated Hydrocarbon Solvents. Give examples of Five such solvents, and write down their important properties with unique uses. What are Naphthenic Solvents?

(c) Discuss the Health, Environmental and Free Hazards related to use of solvents in surface coatings.

4 Attempt any two parts of the following: 6×2=12

(a) Discuss how Plasticizers are evaluated in the laboratory.

(b) What are Chemical Plasticizers that are used in surface coatings? Give suitable examples, and explain the mechanism of their action.

(c) What are Mildew Inhibitors and Fungicides? What are the situations where these materials are required to be used in coatings? Explain with suitable examples.