B. Tech.
(Sem. IV) Examination, 2006-07
NATURAL RESINS & POLYMERS,
PLASTICIZERS & ADDITIVES

Time : 3 Hours] [Total Marks : 100

Note :  (1) Attempt all questions
        (2) All questions carry equal marks

1. Attempt any two of the following parts:
   (a) What are different deficiencies of rosin? Discuss rosin composition with structures of acids.
   (b) What are different modifications of rosin? Discuss chemistry, manufacture, properties and uses of lime hardened rosin and polymerised rosin.
   (c) Write chemical structure of maleopimaric acid and discuss its chemical modifications.

2. Attempt any two of the following parts:
   (a) Describe different kinds of shellac with their properties.
   (b) Write composition of shellac with chemical structures of acids.
   (c) What are different chemical modifications of shellac? Discuss chemical modifications of shellac with oils/fatty acids.

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3 Attempt any two of the following parts:
   (a) Describe chemistry, manufacture, properties and uses of chlorinated rubber.
   (b) Describe source and properties of cellulose. Discuss chemistry and manufacture of nitrocellulose.
   (c) Discuss the role of bitumins and gilsonite in black surface coatings.

4 Attempt any one of the following parts:
   (a) What is the role of plasticizers in surface coatings? Discuss mechanism of plasticizer in coatings.
   (b) What are internal and external plasticizers? Discuss properties of internal and external plasticizers.

5 Attempt any one of the following parts:
   (a) Write short notes on the following:
       (i) Dispersing agent
       (ii) Anti-skimming agent
       (iii) Anti-settling agent
       (iv) Anti-flooding agent
   (b) Describe in short any four of the following:
       (i) Surface active agent
       (ii) Antifoaming agent
       (iii) Thickening agent
       (iv) Coalescing agent
       (v) Antirust agent.