



- (b) With the principle and chemistry involved, explain the method for determination of carboxyl content of cellulose. **10**
- 2** Describe the process for determination of copper number for a scoured cotton sample with the principle involved. **15**
- OR**
- 2** Discuss the various test methods involved in complete analysis of a natural size adhesive used as a majority. **15**
- 3** Write short notes : (any **three**) **15**
- (i) Evaluation of dyestuff by transmission method.
- (ii) Evaluation of detergency
- (iii) Determination of Interfacial migration rate
- (iv) RIMI and tack index.

## SECTION - II

- 4** (a) Answer the following objective questions : **10**
- (i) \_\_\_\_\_ is used to break the silicone emulsion.
- (ii) Name the solvent used for extraction of PE Wax.
- (iii) Give the chemical structure of polyvinylacetate.
- (iv) Spray test is used for performance evaluation of \_\_\_\_\_ finishes.
- (v) What is the test for urea in UF resin?
- (vi)  $\text{HCHO} + \text{Na}_2\text{SO}_3 + \text{H}_2\text{O} \rightarrow \text{CH}_2(\text{NaSO}_3) \text{OH} + \text{_____}$
- (vii) Give the structure of APO
- (viii) Differentiate between NVC and active content
- (ix) How sodium alginate reacts with  $\text{CaCl}_2$ ?
- (x) Name the reagent used for estimation of cationic surfactant.
- (b) Describe the methods for evaluation of free formaldehyde content and total formaldehyde content. **10**
- 5** Discuss elaborately, the evaluation of FR agent. **15**
- OR**
- 5** Discuss, in brief, various methods in thermal analysis of polymer. **15**
- 6** Write short notes : (any **three**) **15**
- (i) Evaluation of polyethylene emulsion
- (ii) Oil content and characterization of silicone emulsions.
- (iii) Evaluation of cationic dye fixing agent
- (iv) Evaluation of a mild oxidizing agent.