

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 142801****Date: 23/05/2012****Subject Name: Manufacturing & Applications of Polymeric Materials****Time: 10:30 am – 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Answer the following objective questions **10**
- i) Expand DMEU to its full form.
 - ii) U F. resin faces ----- serious drawback.
 - iii) What is difference between silicon and silicone?
 - iv) What is precursor of polyvinyl alcohol?
 - v) Textile grade polyvinyl acetate is made by----- polymerization method.
 - vi) Give one example of thermoplastic resin.
 - vii) State the chemical structure of DMDHEU.
 - viii) Expand SAP to its full form.
 - ix) P.H.grade PVA is easily soluble than F.H.grade-TRUE or FALSE?
 - x) What is difference between acrylic and vinyl polymers?
- (b) Discuss various applications of polyethylene glycols. **04**
- Q.2** (a) Describe the manufacturing and various applications of DMDHEU **10**
- (b) Write in brief the techno-chemical aspects of silicone emulsions. **04**
- OR**
- (b) Describe applications of urea - formaldehyde resin as a cross linking agent. **04**
- Q.3** (a) Describe the process for preparation of polyvinyl acetate emulsion with its application in textile finishing. **07**
- (b) Justify the position of polyacrylates in textile printing binder. **07**
- OR**
- Q.3** (a) Describe the manufacturing process of Polyethylene by high pressure process. **07**
- (b) Describe in detail the manufacturing processes of DMEU. **07**
- Q.4** (a) Describe various manufacturing processes of U.F. precondensate. **07**
- (b) Describe in detail the gelling and non-gelling type water repellent silicone finishes. **07**
- OR**
- Q.4** (a) Discuss various applications of Polyvinylchloride **07**
- (b) Describe the process for preparation of polyethoxylate non ionic surfactants with the technological aspects involved. **07**

- Q.5** (a) Describe the process for preparation of Polymethyl methacrylate with the flow sheet diagram. **07**
- (b) Describe various techno-chemical aspects of silicone fluids. **07**
- OR**
- Q.5** (a) Describe the process for synthesis of Polyvinyl alcohol with chemistry and the technological aspects involved. **07**
- (b) Discuss the suitability of polyacrylates in textile warp sizing and finishing. **07**
