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[24] Total No. of printed pages:03

SARDAR PATEL UNIVERSITY

M.Sc INDUSTRIAL CHEMISTRY

SEMESTER II

PS02CICH08 : POLYMER TECHNOLOGY

24-04-2015, FRIDAY

TIME: 10:30 a.m TO 1:30 p.m **TOTAL MARKS:70**

NOTE: ALL QUESTIONS ARE COMPULSORY

Q.1 Answer the following MCQs. **(08)**

1. _____ Process utilizes co-ordination catalyst for PE manufacturing.
   A. High pressure B. Phillips C. Ziegler D. Standard Oil
2. Styrene is produced from _____ in laboratory method.
   A. Cinnamic acid B. Benzoid acid C. Acetic acid D. Adipic acid
3. There is a control branching in _____
   A. LDPE B. HDPE C. LLDPE D. All of these
4. Side reactions occur in _____ process of vinyl chloride manufacturing.
   A. Lab method B. Ethylene C. Acetylene D. All of these
5. Poly (vinylalcohol) is produced from_____
   A. Vinyl alcohol B. Poly(vinylacetate) C. Vinyl acetate D. Vinylchloride
6. _____ are used as nonvolatile solvents for PVC
   A. Stabilizers B. Plasticizers C. Extenders D. Lubricants
7. Gel effect is observed during manufacturing of_____
   A. PVC B. PVAc C. PMMA D. LDPE
8. _____ is used as reactive diluents for unsaturated polyester resins.
   A. Styrene B. Benzene C. Toluene D. Xylene

Q.2 Answer the following short questions (Any seven) **(14)**

1. What is LLDPE?
2. Wall thickness of pipes made from Poly-1-Butene can be kept lower than those of LDPE. Why?
3. Explain about Type 1 and Type 2 ABS plastics?
4. What are extenders? Give their examples.
5. Which monomers are known as acrylic monomers?
6. Give monomers for Nylon 6 and Nylon 6 9
7. Enlist the curing agents for epoxy resins.
8. PVC is useless without additives. Why?
9. PVAc is not used as a plastic material. Give reason.

Q.3 (a) Explain various non-traditional methods for polyethylene manufacturing. **(06)**

Q.3 (b) Discuss the effects of methyl group on the difference in properties of PE and PP. **(06)**

OR

Q.3 (b1) Discuss back-biting mechanism for branching in PE. **(03)**

Q.3 (b2) Give applications of PP. **(03)**

Q.4 (a) Explain the role of stabilizer in PVC and give a brief account of materials used as stabilizers in PVC. **(06)**

Q.4 (b) Give an account of production, properties and applications of PVA. **(06)**

OR

Q.4 (b) Write a detailed note on lubricants for PVC. **(06)**

Q.5 (a) Discuss the production technology of Poly styrene by mass polymerization. **(06)**

Q.5 (b) Discuss various methods for nylon production. **(06)**

OR

Q.5 (b) Discuss the production of methyl methacrylate monomer. **(06)**

Q.6 (a) Compare esterexchange and phosgenation processes for polycarbonate production. **(06)**

Q.6 (b) Write a note on modification of polycarbonate. **(06)**

OR

Q.6 (b) Write a note on unsaturated polyester resin. **(06)**

Best of Luck