

(A-94)

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SARDAR PATEL UNIVERSITY**M.Sc. (Polymer Science & Technology) Semester-IV Examination – 2015****Wednesday, 22nd April 2015****2:30 p.m. to 5:30 p.m.****PS04CPST09: Specialty Polymers**

Note: (1) Attempt all questions.
 (2) Figures to the right indicate full marks.

Total marks: 70**Q. 1 Answer the following****08**

- (1) _____ Polymer is used in analytical separation technique in gel electrophoresis
 (a) polyvinyl pyrrolidone (b) Polyvinyl alcohol (c) Polyacryl amide (d) none of these
- (2) In polyvinyl pyrrolidone, k value indicate _____
 (a) Viscosity Mol.wt. (b) Number average mol.wt. (c) Weight Average Mol.wt. (d) none of these
- (3) In ionic polymer, If bound ion is sulphonate group then polymer is known as _____ exchange polymer
 (a) cation (b) anion (c) Zwitter ionic (d) none of these
- (4) _____ is obtained from brown seaweeds
 (a) Acacia gum (b) guar gum (c) alginate (d) none of these
- (5) The energy difference between valance band and conduction band is known as _____
 (a) Carrier mobility (b) forbidden gap (c) semiconductor (d) none of these
- (6) Which polymer has highly corrosive resistance and used as a magnetic stirrer coating?
 (a) PTFE (b) polysulfone (c) polyether (d) Kevlar
- (7) Which type of polymer is known as ionene?
 (a) Contain sulfonate group (b) contain phosphonate group
 (c) Contain quaternary group (d) contain carboxylate group
- (8) Which product is formed when sodium salt of cellulose reacted with monochloro acetic acid
 (a) methyl cellulose (b) sodium carboxy methyl cellulose (c) hydroxy propyl cellulose (d) none of these

Q. 2 Answer the following (any seven)**14**

- (1) Why we need thermally stable polymer?
- (2) Write a note on polyvinyl alcohol
- (3) Discuss the application of hydrophilic polymer
- (4) How to improve low performance polymers for high temperature use?
- (5) Explain Carbohydrate
- (6) How gelatin is produced? Write properties and application of gelatin

- (7) Define LOI. Explain the burning of polymer
- (8) Discuss piezoelectricity and pyroelectricity
- (9) Write a short note on polyvinyl pyrrolidone.

Q. 3 (a) Write a reaction mechanism of polyparaphenylene and give the properties and application **06**

- (b) Answer the following 06**
- 1. Write a note on polyether
 - 2. Explain Guar gum

OR

- (b) Discuss the following 06**
- 1. Polysulphone
 - 2. Polyphenylene Sulfide

Q. 4 (a) Write a synthesis scheme, property and application of polyimide **06**

- (b) Write a note on following 06**
- 1. Polytetrafluoroethylene
 - 2. Explain the classification of Ionic polymer

OR

- (b) Answer the following 06**
- 1. Polyamide
 - 2. Explain the hydrophilicity in Ionic polymer

Q. 5 (a) Write a note on polyelectrolyte for Ion exchange **06**

- (b) Answer the following 06**
- 1. Explain acryl amide
 - 2. Write a note on casein

OR

- (b) Explain the synthesis of ionic polymer by post functionalization of a standard and special pre-formed polymer 06**

Q. 6 (a) Discuss hydrogel polymer. **06**

- (b) Write a note on Ionic crosslinking 06**

OR

- (b) Explain Ion Exchange resin and Ion Exchange membrane 06**

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