

[64]

SARDAR PATEL UNIVERSITY
M. Sc. -Chemistry (Fourth Semester) EXAMINATION

Industrial Polymer chemistry (IPC)

PS04ECHE04: Selected Topics in Polymers

19th April, 2018, Thursday,

Time: 2.00 pm to 5.00 pm

Note: Figure to the right in brackets indicates the full marks

Total marks: 70

Que.1 Give the appropriate answer of the following multi choice questions. [8]

- a. Poly (Phenylene oxide) has an excellent resistant to _____.
- | | |
|----------------|--------------------|
| (i) detergents | (ii) alkalis |
| (iii) acids | (iv) all the above |
- b. Non-specific oxidising agents for starch is _____.
- | | |
|---------------------|-------------------------|
| (i) air | (ii) NO ₂ |
| (iii) Periodic acid | (iv) Lead tetra acetate |
- c. What type of amylose can be considered?
- | | |
|--------------|------------------------|
| (i) Branched | (ii) Cross-linked |
| (iii) Linear | (iv) All of the above. |
- d. Epoxy resin is used as _____ adhesive.
- | | |
|-------------|------------------------|
| (i) leather | (ii) metal |
| (iii) glass | (iv) none of the above |
- e. Pocan is the trade name of _____.
- | | |
|-----------------------------------|------------------------|
| (i) Poly (butylene terephthalate) | (ii) Polyacetal |
| (iii) Polyimides | (iv) none of the above |
- f. Which polymer is used as an adhesive for Cement wall panel?
- | | |
|-------------------------|-----------------------------------|
| (i) Nitrile rubber | (ii) Hot styrene butadiene rubber |
| (iii) Polyvinyl alcohol | (iv) Polyacrylate |
- g. The food industry uses a starch acetate having degree of substitution _____.
- | | |
|---------------|---------------|
| (i) 0.02-0.09 | (ii) 0.02-0.5 |
| (iii) 1.5-2.5 | (iv) 2.5-3.0 |
- h. _____ Pigments are made by incomplete combustion of oil or gas.
- | | |
|------------------|-----------------------|
| (i) Carbon black | (ii) lead black |
| (iii) Lamp black | (iv) (i) & (iii) both |

Que. 2 Answer the following questions in short(Any Seven). [14]

- i. What is an adhesive? Write selection of adhesives.
- ii. Write properties of starch.
- iii. List the uses condition of adhesives with example.
- iv. Classify the four major groups of Poly (phenylene oxide).
- v. Write a short note on hydroxy ethyl cellulose.
- vi. Give reaction scheme and uses of Polyimides.
- vii. Write a short note on varnish.
- viii. Classify the chemical composition of an adhesive.
- ix. Write the disadvantages of Poly (phenylene sulphide).

- Que. 3 (A) Write brief note on advantages and disadvantages of an adhesives. [6]
(B) Write a note on Polyethylene amine. [6]

OR

- (B) Write a note on Polyvinyl pyrrolidone.
Que. 4 (A) Describe the oxidation and enzymatic hydrolysis of starch. [6]
(B) Discuss the hot melt adhesives system with example. [6]

OR

- (B) Describe the non-reactive adhesive system with example
Que. 5 (A) Give reaction scheme, properties and applications of Polyether ether ketone [6]
(PEEK).
(B) Define 'vehicle' in term of paints. Write characteristics of 'vehicle' briefly. [6]

OR

- (B) Write a short-note on:
(i) Hiding power of paints.
(ii) Inorganic pigments for paints.
Que.6 (A) Discuss the dextrinization process with different type of dextrin. [6]
(B) Write a note on structure and composition of starch. [6]

OR

- (B) What is paint? List the various fundamentals of Paints Characteristics.

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