

SEAT No. _____

No of Printed Pages: 03

[67]

SARDAR PATEL UNIVERSITY
M. Sc. (Semester-IV) Examination
Monday, 16th April 2018
2.00 PM to 5:00 PM
Industrial Polymer Chemistry, PS04CIPC03
(Processing of Polymers)

Total Marks : 70

Q-1

Answer the followings:

[8]

1. Which property measures the resistance of a liquid to flow?
 - (a) density
 - (b) volume
 - (c) viscosity
 - (d) solubility
2. Where does the granular molding material get loaded into?
 - (a) barrel
 - (b) pellets
 - (c) hopper
 - (d) split
3. Which of the following defect is also known as bamboo effect?
 - (a) blow hole
 - (b) cold shut
 - (c) surface cracking
 - (d) pipe defect
4. Which of the following material is not used in extrusion?
 - (a) granules
 - (b) pellets
 - (c) wax
 - (d) powder
5. How is the die used in injection molding cooled?
 - (a) contact with cold surface
 - (b) air
 - (c) water
 - (d) oil
6. In blow molding, to inflate soft plastic, which medium is used?
 - (a) water
 - (b) oil
 - (c) air
 - (d) alcohol
7. The indenter used in Brinell hardness test is a
 - (a) ball
 - (b) cylinder
 - (c) cone
 - (d) pyramid

(P.T.O)

8. The ability of the material to resist stress without failure is called
- (a) hardness
 - (b) toughness
 - (c) strength
 - (d) stiffness

Q-2 Answer the followings (**Any SEVEN**) [14]

- (i) Write about the overview of polymer processing?
- (ii) Differentiate schematically distributive mixing and dispersive mixing processes.
- (iii) Name and write the function of the mixture which is being used for dough like blends.
- (iv) The spray up process is used for making engineering composites only. Why?
- (v) List out the major methods of coating.
- (vi) What is the basic difference between extrusion blow molding process and injection blow molding process?
- (vii) List out the important aspects of thermoforming processes.
- (viii) In filling of the finishing operations of the processed item, how suitable file is selected in order to have a better processed item?
- (ix) State the different ways of expressing viscosity terms along with their units.

Q-3 (a) Define the term Rheology and write briefly about any two rheological states of polymers. [6]

(b) Write a note on: Physical forms of polymer mixes. [6]

OR

(b) Describe briefly about Banbury mixer. [6]

Q-4 (a) With a neat sketch explain the hand layup process. [6]

(b) Describe briefly about the positive and landed positive types of compression molds. [6]

OR

(b) Give a suitable sketch and explain the process of electrostatic coating. [6]

Q-5 (a) What are the conditions that may lead to uneven thickness in a calendered polymer sheet? Explain how the thickness is controlled. [6]

(b) Explain briefly about the form in place method. [6]

OR

(b) Giving necessary sketch for the arrangement of the implements, explain the process of dielectric welding for thermoplastic materials. [6]

- Q-6 (a) List out the different types of finishing operations for polymer objects and describe tumbling process in details. [6]
- (b) Write about the following: [6]
- (i) Mooney viscometer
 - (ii) Brabender plasticorder

OR

- (b) Discuss about the factors which affect the impact strength. [6]

