

601

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SARDAR PATEL UNIVERSITY
M. Sc. (Semester-IV) Examination
Tuesday, 4th December 2012
10:30 AM to 1:30 PM
Industrial Polymer Chemistry, PS04CIPC03
(Processing of Polymers)

Total Marks : 70

Q-I Answer the followings:

[8]

1. State with more viscous nature and having some elastic response is called
 - (a) Viscous state
 - (b) Elastoplastic state
 - (c) Viscoelastic state
 - (d) Elastoviscous state
2. A process in which a liquid mix. poured into an open mold where the shape is normally formed without the application of any pressure is called
 - (a) Coating
 - (b) Adhesion
 - (c) Casting
 - (d) Reaction Injection Molding
3. The full name of ASTM is
 - (a) American Society of Testing and Methods
 - (b) American Society for Testing and Materials
 - (c) American Society of Testing and Materials
 - (d) American Society for Testing and Methods
4. Which of the following process is a variation of the hand layup process
 - (a) Vacuum bag molding
 - (b) Spray up process
 - (c) Cold press molding
 - (d) Pultrusion process
5. In transfer molding the runners usually have _____ cross-sections and have dimensions of 6-8 mm wide and about 3 mm deep.
 - (a) Circular
 - (b) Semicircular
 - (c) Angular
 - (d) Regular
6. In extruder machine, material that has been extruded through a die is
 - (a) Extrudate
 - (b) Kneader
 - (c) Screen pack
 - (d) Feed throat

(P.T.O.)

7. Hot tool welding is also known as
 (a) Groove Welding
 (b) Butt Welding
 (c) Fusion Welding
 (d) Spin Welding
8. In which of the following process, the positive pressure exerted upon the softened sheet to force it against the female mold.
 (a) Vacuum forming process
 (b) Free forming process
 (c) Drape forming process
 (d) Press forming process

Q-2 Answer the followings (ANY SEVEN): [14]

- (i) List out the different techniques which are adopted for shaping the polymeric materials.
- (ii) Differentiate Embedding and Potting.
- (iii) Define the term Surface Veil.
- (iv) List out the various coating methods.
- (v) Give applications of compression molding process.
- (vi) In extruder machine, why the inner diameter of barrel is almost near to outer diameter of the screw?
- (vii) For which type of polymers, the calendaring process is most widely adopted?
- (viii) Classify the Injection molds.
- (ix) Give full name of BIS.

- Q-3 (a) Describe briefly about Banbury mixer. [6]
 (b) With a neat sketch diagram explain the Continuous Casting method. [6]

OR

- (b) Write a note on Ultrasonic Welding process. [6]

- Q-4 (a) Give a suitable sketch and explain the process of electrostatic coating. [6]
 (b) Differentiate the extrusion blow molding and injection blow molding methods and mention their advantages and disadvantages. [6]

OR

- (b) List out the different types of gate design used for Injection molding machine and describe any two in details. [6]

- Q-5 (a) With appropriate sketch describe the sequential steps of rotational molding [6]
process.
- (b) Describe briefly the extrusion blown film process. [6]

OR

- (b) Write a note on: Feeding and removal of finished product in different types of calenders. [6]
- Q-6 (a) With neat sketch diagram explain the following methods of thermoforming: [6]
(i) Matched- mold forming
(ii) Free-forming
- (b) Describe the following tests: [6]
(i) Brinell Hardness
(ii) Melt Flow Index

OR

- (b) Why rubbers require vulcanization? Explain the vulcanization of rubber by sulfur. [6]

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