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Roll No.....

PT-303 Polymer Processing Techniques

Supplementary examination

February-2019

Time: 3Hours

Max.Marks: 40

Note: Attempt any FIVE questions.  
Assume suitable missing data, if any.

1. Write brief answers/reasons to the following:

- a) Define injection moulding of a plastic material. [1]  
b) The basic blow moulding process is built upon  
i) compression, ii) extrusion, iii) drawing, iv) spinning. [1]  
c) What is foamed polyurethane systems? [1]  
d) What are different types of screw zones in an machine.? [1]  
e) Write any three advantages of gas assist injection moulding. [1]  
f) What is blow moulding parison sag? [1]  
g) What are the advantages of structure foam moulding? [1]  
h) How can shrinkage be represented? [1]

2. a) Describe the various types of heaters for heating a barrel. [4]  
b) Advantages and disadvantages of RIM process. [2]

- c) Write the full form of  
i. RRIM  
ii. SMC  
iii. RMT  
iv. UHMWPE [2]

3. a) Discuss the two processes generally used for blow moulding. [4]  
b) Compare the two types of injection moulding machine,  
i. Plunger injection moulding,  
ii. Reciprocating injection moulding [4]

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4. a) Draw a pressure circuit diagram having electric motor coupled to hydraulic pump, pressure gauge and throttle valve [2]
- i. What is the pressure gauge reading when throttle valve is fully opened? [1]
- ii. What happens when the throttle valve is being closed to fully closed position? [1]
- b) It is required to enhance the shelf life of food products. What properties are to be taken into consideration while designing the container? [4]
5. a) Describe the four basic steps of rotational moulding process. [4]
- b) Discuss the role of nature of substrate and interface in the performance of coating. [4]
6. a) Describe the processing steps involved in the compression moulding. [4]
- b) Describe the types of compression moulds
- i. Flash mould
- ii. Fully Positive moulds [4]
- 7.a) What is structural foam moulding? With the help of sequential diagrams explain the three phases of co injection moulding. [4]
- b) Discuss the following components of the blow moulding machine [4]
- i the extruder
  - ii parison head
  - iii accumulator system
  - iv venting and surface finish

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