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10NT844

Eighth Semester B.E. Degree Examination, June/July 2017
Polymer Technology

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting at least TWO questions from each part.*

PART – A

1   a. Mention different methods of melt processing of thermoplastics. Explain any one method.
(08 Marks)
    b. Explain thermoset plastics processing. (08 Marks)
    c. Write a note on stress-strain behavior. (04 Marks)

2   a. Explain double screw plasticating extruder zones. (05 Marks)
    b. Discuss different applications of extruded products. (05 Marks)
    c. Discuss in detail rheological aspects of extrusion and extrusion defects. (10 Marks)

3   a. Discuss in brief polymer characteristics for injection moulding. (04 Marks)
    b. What is hot runner mould? Explain. (04 Marks)
    c. Explain following processes: i) Single impression moulding   ii)   Sandwich moulding
       iii) Reaction injection moulding. (12 Marks)

4   a. Compare compression moulding with other processing methods in brief. (10 Marks)
    b. With neat diagram. Explain the principles and working of transfer moulding. (10 Marks)

PART – B

5   a. What is calendaring? Explain in detail the principle and working of calendaring process.
(10 Marks)
    b. Derive an expression for film thickness. (05 Marks)
    c. Discuss different applications of PVC calendered products. (05 Marks)

6   a. Mention and explain the steps involved in thermoforming process. (10 Marks)
    b. Write a note on following : i) Vacuum forming   ii)   Pressure forming (10 Marks)

7   a. Explain the moulding criteria, advantages and disadvantages of rotational moulding.
(10 Marks)
    b. Distinguish between blow moulding and rotational moulding. (05 Marks)
    c. Calculate part wall thickness of a rotational moulded part given below. Given that weight =
       2350g and density = 0.939g/cc. (05 Marks)

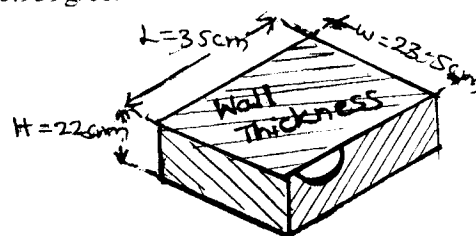

Fig Q7(c)

8   a. Define dielectric strength. Explain in brief dielectric strength measurement methods.
       Mention the factors affecting test results. (10 Marks)
    b. Define luminous transmittance and haze. Explain the process of finding luminous
       transmittance and haze using haze meter with neat diagram. (10 Marks)

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