FIBERS AND COMPOSITE

Maximum Marks : 100 Time : 3 Hrs

PART–A

(Maximum marks: 10)

I. Answer the following questions in one or two sentences. Each question carries two marks Marks

1 Cotton clothes take long time to dry up. Why?
2 Nitrogen atmosphere is maintained over the pool of nylon melt during spinning why?
3 Differentiate 'Novalac' and 'Resol'.
4 The warmth of wool fabric is more than other fabrics. Why?
5 What is 'Kick-off' temperature? [5x2 =10]

PART - B

(maximum marks : 30)

II Answer any five of the following questions. Each question carries 6 marks

1 Name four leaf fibers and illustrate the production, application and properties of any one of them
2 Explain the production, properties and application of Asbestos fiber
3 What are the properties which increases the thermal stability of a polymer
4 What are the advantages and disadvantages of Hand Lay – up process.
5 Describe the use of (a) fillers and (b) plasticisers to improve and tailor polymer properties
6 (a) What is the approximate denier of a fiber 0.02mm in diameter, if the specific gravity of the polymer is 1.2
(b)Define deneir and Tenacity.
7 Explain gel coat and Top coat resin [5x6=30]

PART - C

(maximum marks : 60)

(Answer one full question from each unit. Each question carries 15 marks)

UNIT I

III a Describe the cultivation, production, properties and uses of cotton and coir [8]
b Distinguish the properties, structure of fibers, fiber forming plastics and elastomers [7]

OR

IV a Describe the collection, properties and uses of wool and silk [8]
b Describe the cultivation, processing and applications of jute and linon [7]

UNIT II

V a Describe the production of nylon fiber and its properties [8]
b Describe the process of manufacturing viscos rayon and its applications [7]

OR

VI a Explain the manufacturing process of cellulose acetate and cellulose acetate butyrate. [8]
b Describe the production of aramid fibers and LDPE fibers [7]

UNIT III

VII a Describe the production and applications of melamine formaldihyde and urea formaldihyde [8]
b Evaluate the function of accelerators, fillers, plasticisers and inhibitors in FRP mouldings [7]

OR

VIII a Explain the preparation, application of polyester resin [8]
b What are the monomers used in epoxy resin. How it is prepared and list the applications [7]

UNIT IV

IX a Compare the processing techniques such as RIM and RRIM [8]
b Illustrate the manufacturing process of centrifugal moulding [7]

OR

X a Describe the process of spray lay-up and list out its advantages and Disadvantages [8]
b Write a formulation for FRP water tanks and explain the processing technique. [7]

[4x15=60]

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