Roll No. ..... Total Pages : 2

BT-8/M-13 **8885**

HIGH PERFORMANCE & SPECIALITY FIBRES

Paper–TT-432

Time Allowed : 3 Hours] [Maximum Marks : 100

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit.

UNIT–I

1. Discuss the production process of NOMEX fibres. Why KEVLAR is a rigid polymer whereas NOMEX is a flexible polymer? Explain some important properties of KEVLAR fibres. 10,5,5

2. Discuss the production process and structure of PBO fibres. How high molecular weight polyesters are produced? Compare PBO & PBI fibres from production, structure & properties. 10,5,5

UNIT–II

3. Discuss the Carbon fibre production from PAN based precursors. What are the drawbacks of Carbon fibres? 15,5

4. Discuss the disadvantages of Rayon and Pitch based Carbon fibres. Explain manufacturing of Pitch based Carbon fibres. Discuss Dryjet wet spinning method alongwith its advantages. 5,5,10

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UNIT–III

5. Why Gel spinning method is most successful with UHMWPE? Why Ultra high molecular weight polyethylene fibres are best suited for production of ballistic armors? Describe the spinneratte designs used for production of Bicomponent and Hollow fibres. 5,6,9

6. Define Optical Fibres. Discuss different types of Optical fibres in detail. What are the different types of material used for manufacturing of optical fibres? Explain along with their advantages and disadvantages. Discuss the applications of Optical fibres. 2,9,5,4

UNIT–IV

7. Discuss the production, properties & applications of PEEK fibres. Discuss the properties of Soyabean fibres. Write a short note on Superabsorbent fibres. 10,5,5

8. Why fibres are treated with Plasma and Radiations? Discuss some applications of Fibres used in medical textiles. Discuss the production and applications of biaxially oriented films & fibres. 6,5,9

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