[Total No. of Questions - 9] [Total No. of Printed Pages - 2] (2125)

15296

B. Tech 7th Semester Examination

High Performance Fibres (NS)

TE-411(e)

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any one question from Section A, B, C and D. Section E is compulsory.

SECTION - A

1. Why the tensile properties of NOMEX is not as good as KEVLAR? Explain production process and properties of KEVLAR Fibre. (20)

2. List out various types of High Performance Fibres along with their growth pattern, advantages and application areas. (20)

SECTION - B

3. Discuss production methods, properties and application areas of Asbestos fibre. (20)

4. Why Carbon fibre exhibit a skin-core structure? Explain carbon fibre production from PAN based precursors along with necessary reactions. Also discuss its various applications. (20)

SECTION - C

5. Explain manufacturing process of aluminium oxide and lead fibres. (20)

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6. Explain production process, properties and various applications of Ceramic fibre. Discuss applications of polyurethane elastomeric fibres. (20)

SECTION - D

7. Explain manufacturing process of an optical fibre along with its applications. (20)

8. Discuss in detail about various fibres to be used as bio absorbable material. Write short note on hollow fibres. (20)

SECTION - E

9. (i) What is ILSS and why it is low for carbon fibres?

   (ii) Give various types of optical fibre.

   (iii) Write short note on Gel Spinning.

   (iv) Explain drawbacks of NOMEX and asbestos fibre.

   (v) Discuss requirements of a bio absorbable material.

   (vi) Give application of lead fibre.

   (vii) Give requirement of a material to be used as radiation shielding material.

   (viii) Explain applications of silicon fibres.

   (ix) Discuss applications of KEVLAR fibre.

   (x) Define carbon monotubes. (10×2=20)