Register Number:……..

KUMARAGURU
college of technology
character is life

B. TECH DEGREE EXAMINATIONS: NOV /DEC 2024

(Regulation 2018)

Fifth Semester

TEXTILE TECHNOLOGY

U18TXE0002**:** High Performance Fibres

COURSE OUTCOMES

CO1: Apply the basics of Aramid and Sulphur based fibers including formation, structure, properties, and applications.

CO2: Analyze the manufacturing processes, structures, and properties of Carbon and Glass fibers for various applications.

CO3: Evaluate the characteristics and applications of Ceramic, Elastomeric, and PBI fibers in different industries.

CO4: Analyze the manufacturing processes, structures, and properties of Metallic fibers for various applications.

CO5: Demonstrate understanding of emerging fibers such as Polystyrene, Microfibers, Bio-absorbable fibers, Nanofibers, Ultra-fine fibers, and Hollow fibers, along with their applications

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

1.	Analyze any one of the requirements of high-performance fibres	CO1	[K_3]
2.	List the leading manufacturers of Aramid fibres.	CO1	[K_2]
3.	Categorize carbon fibres.	CO2	[K_2]
4.	Analyze the composition of Glass fibres.	CO2	[K_4]
5.	List the types of ceramic fibres.	CO3	[K_2]
6.	Enumerate the applications of PU fibre.	CO3	[K_2]
7.	Analyze the properties of aluminum oxide fibres.	CO4	[K_3]
8.	Justify the application of Lead fibre as radiation shielding materials.	CO4	[K_4]
9.	Contrast the micro fibre from nano fibre.	CO5	[K_2]
10.	Outline about PLA fibre.	CO5	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.		Demonstrate the Kevlar fiber on the formation, structure, properties and application.	16	CO1	[K_4]
12.	a)	Discuss about carbon fibres on manufacturing processes from Polyacrylonitrile (PAN), Properties and Applications.	8	CO2	[K_4]
	b)	Analyze in detail about types, manufacturing processes, fibre structure, properties and applications of Glass fibres.	8	CO2	[K_4]
13.		Justify the HDPE fibre with respect to manufacturing processes, properties and applications.	16	CO3	[K_3]
14.		Demonstrate about Steel fibre on its formation, structure, properties and applications.	16	CO4	[K_4]
15.		Illustrate on preparation, properties and applications of Polystyrene based fibres.	16	CO5	[K_2]
16.	a)	Discuss Ultra-fine fibres and in detail.	8	CO5	[K_3]
	b)	Justify the applications of Hollow fibres with their properties.	8	CO5	[K_3]

****