



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 162801**

Roll No.

--	--	--	--	--	--	--	--	--	--

## B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15  
**HIGH PERFORMANCE FIBRES**

Time : 3 Hours]

[Total Marks : 100

**Note :** Attempt all five questions and all questions carry equal marks.

1 Attempt any two parts of the following :

- (a) Discuss about the current market scene of high performance fibres in India.
- (b) What are high performance fibres? How does high performance fibres differ from conventional textile fibres.
- (c) What is gel spinning? Discuss with neat sketch.

2 Attempt any two parts of the following :

- (a) Discuss about ultrahighmolecular weight polyethylene (UHMWPE) polymer in detail.
- (b) What are Aramid fibres? Discuss about the synthesis and properties of Kevlar Fibre.
- (c) Discuss about the structure and properties of Nomex and Kevlar Fibres.

- 3** Attempt any two parts of the following :
- (a) Discuss about poly (p-phenylene terephthalamide) (PPTA) fibre in detail.
  - (b) Explain about the concept of liquid crystalline polymer spinning.
  - (c) What are carbon fibres? Discuss about the manufacturing process of precursor fibre used to manufacture carbon fibre.
- 4** Attempt any two parts of the following :
- (a) Discuss about stabilization process of carbon fibre manufacturing in detail with appropriate reactions.
  - (b) Explain about the carbonization process in detail with suitable reactions.
  - (c) What is Vectran Fibre? Discuss about important properties of Vectran Fibre.
- 5** Attempt any two parts of the following :
- (a) Discuss about Glass fibre manufacturing in detail with appropriate diagram.
  - (b) Discuss about polyphenylene benzobisoxazole (PBO) fibre manufacturing and its properties in detail.
  - (c) What is PEEK fibre? Discuss about the fibre manufacturing process of PEEK fibre.
-