Printed Pages : 1 **Roll No.** | | | | | | | | | | | **EC012**

B. TECH.
THEORY EXAMINATION (SEM–VI) 2016-17
POST SPINNING OPERATION

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

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Attempt all parts of the following question: **10 x 2 = 20**

(a) Clasify PET filament as per the drawing speed ?

(b) Why drawing of as spun filament material is necessary ?

(c) Which type of drawing is used for apperal grade nylon-6 ? Write also the temperatue of drawing for apperal grade Nylon-6.

(d) Define semi permanent heat setting. In which temperature the semi permanent heat setting is lost?

(e) What are the effect on drawn filament of heat setting when high setting temperature is used for long time?

(f) List the various methods used to convert tow to top ?

(g) Write the principle of up-twisting of filament yarn?

(h) List various system used for conversion of fibres in to yarn ?

(i) The 9 D as-spun filament was subjected to two-stages drawing with a draw ratio of 1.5 and 2.0. Calculate the resultant denier of the single filament?

(j) A filament yarn of 300 denier is being spun at a take up speed of 600 m/min. assuming the density of the melt as 1.25 g/cm^3.Then calculate the throughput speed (cm^3/min) at the spinneret?

SECTION – B

2. Attempt any five parts of the following question: **5 x 10 = 50**

(a) Discuss various parameters which can influence the drawing?

(b) Explain spin draw process for high performance nylon-6 cord manufacturing.

(c) How the drawing induced structural changes in as spun filament ?

(d) Discuss various parameters which can influence the heat setting process?

(e) Discuss effect of heat setting on morphology of fibre.

(f) Explain the working of Seydel machine with suitable sketch.

(g) Explain the method of making high shrink acrylic fibre.

(h) Write the various fibre variables on properties of blended yarn.

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**

3. Explain all kinds of drawing behavior shown by Thermoplastic materials. Also discuss which type of drawing shows more stable elastic network and why?

4. Discuss the importance of annealing of the drawn fibres. Also discuss about the nature of heat set and its technical importance.

5. Write the operating principle of two for one twister. Write also various TFO yarn properties.