[Total No. of Questions - 9] [Total No. of Printed ges - 3]
(2126)

16056(D) - 0 DEC 2016

**B. Tech 3rd Semester Examination**

**Textile Fibres (NS)**

**TE-212**

**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 five questions in all, selecting one question from each sections A, B, C and D. Section E is compulsory.

## SECTION - A

1. (a) What are different varieties of cotton fiber?

   (b) Classify natural fibres.

   (c) What is naturally coloured cotton? How it is produced?

   (d) Differentiate between regenerated and synthetic fibres (5×4=20)

OR

2. (a) What are the impurities present in a raw cotton fiber?

   (b) What are essential and desirable requirements for a textile fibre?

   (c) Define bast fibres. What are various type of bast fibres?

   (d) Diagrametically explain the morphological structure of cotton fibre. (5×4=20)

## SECTION - B

3. (a) What is cystine linkage? Discuss its utility.



   (b) Explain the wet spinning process of viscose fibres.

   (c) Explain degumming of silk fibre.

   (d) Draw a flow chart of manufacture of cellulose xanthate (5×4=20)

OR

4. (a) Discuss the physical and chemical properties of wool fibres.

   (b) Explain reeling of silk fibre.

   (c) Define creep in a fibre.

   (d) Discuss physical properties of casein and bamboo fibre. (5×4=20)

## SECTION - C

5. Explain ester interchange or transesterification and polycondensation steps in manufacturing of polyester fiber. (20)

OR

6. (a) What are non textile application of nylon ?

   (b) Write chemical reaction of nomex and kevlar fibres. What are specific uses?

   (c) Write the reaction of DGT formation. What are advantages of DGT?

   (d) What are advantages and drawbacks of polyester fiber? (5×4=20)

## SECTION - D

7. (a) Discuss the manufacturing of high density polyethylene polymer from its basic monomer.

**[P.T.O.]**

(b) Discuss the manufacturing of polyacrylonitrile fiber by dry or wet spinning process (10×2=20)

OR

8. (a) Write the burning test of cotton, wool, polyester, acrylic and silk fibres.

(b) What are the solvents for acrylic, nylon6, wool, viscose rayon, polypropylene fibre?

(c) Draw longitudinal and crossectional view of cotton and wool fibres.

(d) Discuss the staining test for textile fibres. (5×4=20)

**SECTION - E**

9. (a) What are thermoplastic fibres? Give few examples.

(b) Why acrylic fibre is not manufactured by melt spinning process?

(c) What are benefits of melt spinning over other spinning?

(d) How will you determine the percentage of each fibre from a fabric containing cotton and viscose fibres?

(e) Differentiate between fibre and elastomers.

(f) Explain amorphous and crystalline regions in a fibre.

(g) Define glass transition temperature of a fibre.

(h) Why wool fibre has high elongation at break?

(i) Why wool fibre has warmth?

(j) How metallic lusture in synthetic fibres is dulled?

(10×2=20)