This question paper contains **2** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **5717**

Unique Paper Code : **6092013501**

Name of the Paper : **Fibre Science**

Name of the Course : **B.Sc. (H) Polymer Science (UGCF mode)**

Semester : **V**

Duration : **2 Hours** Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *four* questions in all.

Draw a neat and labelled diagram wherever necessary.

Question No. **1** is compulsory.

1. (*a*) List major difference between natural and synthetic fibres.

(*b*) Homopolymer PAN is a precursor of carbon fibres but not ideal one. Justify it.

(*c*) Why should tensile strength of fibre increase with increase in molecular weight ?

(*d*) What attributes of fibre are affected by crystalline and amorphous regions ?

(*e*) Mercerized cotton is lustrous. Explain. 5×3

P.T.O.

2. (*a*) Discuss the preparation of a dope.

(*b*) Polymer concentration plays crucial role in the spinning of aramid fibres. Explain in detail.

(*c*) Discuss properties of cellulose acetate fibres. 5,5,5

3. Write notes on the following : 5,5,5

(*a*) Silk fibres

(*b*) Carbon fibres

(*c*) Glass fibres.

4. (*a*) How do properties of nylon 6 fibres differ from nylon 66 fibres ? Also comment on physical and chemical properties of nylon fibres.

(*b*) Discuss chemistry of wool fibres.

(*c*) Discuss primary and secondary variables of melt spinning. 5,5,5

5. (*a*) Discuss necessity of modification of fibre with a suitable example.

(*b*) Illustrate Dry-Jet wet spinning technique with a neat schematic.

(*c*) Comment on structural changes taking place during fibre spinning. 5,5,5