

Total number of printed pages – 4 **B. Tech**
CPTX 8202

Fourth Semester Examination – 2008

TEXTILE FIBRE - II

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory
and any **five** from the rest.*

*The figures in the right-hand margin
indicate marks.*



1. Answer all the questions in brief : 2×10
 - (a) What is necking in drawing of spun filament yarn ?
 - (b) How the denier of melt spun filament is controlled ?
 - (c) Why TiO_2 (titanium di-oxide) is added as additive in synthetic fibre production ?

- (d) What is the role of ZnSO_4 and its concentration in viscose production ?
 - (e) What is the difference between Nylon-6 and Nylon-66 ?
 - (f) What do you mean by POY ? What is its importance in synthetic fibre manufacturing ?
 - (g) What is polyaddition reaction ? Give example.
 - (h) Define micro-fibre with example.
 - (i) What do you understand by industrial or high performance fibres ?
 - (j) What is solvent texturing ?
2. (a) Define and compare dry, wet and melt spinning processes for man-made fibre production. 6
 - (b) Discuss the factors on which the selection of man-made fibre spinning process depends. 4
3. (a) Show the Flow-Chart for ordinary viscose fibre production and discuss the various process variables for the same. 7

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- (b) What are the popular uses of viscose rayon and similar type of fibres ? 3
4. (a) Describe with line diagram the melt spinning process for the production of polyester filament. 7
- (b) With reference to melt spinning of polyester fibre, discuss the effects of parameters like spinneret, rate of extrusion and spinning stretch on structure of filament. 3
5. (a) Why 100% polyacrylonitrile polymer is not meltable and soluble ? How it can be made soluble in certain solvents ? 4
- (b) Describe the process of acrylic fibre production through dry spinning technique. 6
6. (a) What is the need of heat setting of thermoplastic synthetic fibres ? Explain the mechanism of heat setting of thermoplastic synthetic fibres. 5
- (b) What are cold drawing and hot drawing of spun synthetic filament ? Discuss the principle of one such drawing technique. 5

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7. (a) Why yarns – particularly synthetic yarns – are textured ? Name the various techniques of yarn texturing developed so far. 4
- (b) With the help of line diagram explain the process and principle of draw texturing of thermoplastic filament yarns. 6
8. (a) Make a list of high performance (industrial) fibres and mention their uses. 4
- (b) Discuss the production technique and properties of either Kevlar or Carbon fibre. 6

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