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S 4069

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Second Semester

Textile Technology

TT 1152 — TEXTILE FIBRE PRODUCTION

(Common to Textile Technology (Textile Chemistry))

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate between the terms : Staple fibre and Continuous filament.
2. Differentiate between melt, dry and wet spinning techniques.
3. Name the important high grade cotton varieties.
4. What is wool grading?
5. Differentiate between melting grids and extruders.
6. List out the factors influencing quenching of synthetic fibres.
7. Name the raw materials used for the synthesis of Nylon 6 and Nylon 66.
8. Compare the two different routes of production of PET polymer.
9. State the importance of spin finish application in the case of man made fibres.
10. Enumerate the advantages of high speed spinning.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the fundamental aspects of fibre spinning with special reference to fluid flow characteristics.

Or

- (b) Discuss the following :

- (i) Global production trends for man-made fibres. (8)
(ii) Dry-jet-wet spinning. (8)

12. (a) Discuss about silk fibres with respect to pre and post cocoon operations, important varieties and their properties. (6 + 4 + 6)

Or

- (b) Give a detailed account on the cultivation, fibre extraction and characteristics of jute fibres. (4 + 6 + 6)

13. (a) With suitable diagrams, discuss the various melt spinning equipments used for the spinning of synthetic fibres.

Or

- (b) Explain the solution spinning technique with special reference to dope preparation, candle filter, gadgets, coagulation bath, dryer and winder. (3 + 2 + 2 + 3 + 3 + 3)

14. (a) With neat sketches, explain the production of polyester filament yarns under continuous polymerization technique.

Or

- (b) Give a detailed account on influence of process variables on structure and characteristics of wet-spun filaments.

15. (a) Account the various post spinning operations used for the man-made fibres.

Or

- (b) With suitable diagrams, discuss the production of polyester staple fibres from their tow with respect to various operation stages involved.