Syllabus & Model Question Paper

Syllabus

Textile Fibres: Classification of Polymers-Application of Polymer-Study of Various methods of polymerization -Study of various types of initiators -Techniques of polymerization -Physical structure of polymers-Polymer reactions-Thermal analysis of polymers; Study of different structures of textile fibres using various techniques-Study of different properties of various textiles fibres i.e., moisture relations, mechanical properties optical properties, electrical properties and thermal properties; History on origin of textiles - Study of different textiles fibres-Basic requirements of textile fibres Geographic distribution-Cultivation and grading of cotton, wool, silk and jute fibres -Physical and chemical properties of important natural fibres; Sequence of operations in conversion of important natural fibres into fabric; Study of different man-made fibre spinning - Fundamentals of fluid flow in man -made fibre spinning-High speed melt spinning-Formation of fibre structure during various methods of man -made spinning-Production of micro denier and special shaped fibres; Production and Properties of various regenerated fibres-Production of various raw materials for different synthetic fibres -Properties of different synthetic fibres-Effect of various parameters on various synthetic fibres-Study of semi-continuous and integrated continuous process for production of Nylons; Study of different high performance fibres; Study of spin finish -heat setting and drawing of fibres; Study of different methods of texturising and various parameters affecting texturising -Test methods of textured yarns; Study of different yarn count systems-conversion from one system to another system.

Yarn Manufacture: Ginning and Baling:
Blow room: Objects and methods of mixing -Opening and cleaning- Blow room machineries cleaning efficiency -Lap regularity -Modern developments -Auto mixer and calculations pertaining to blow room.
Drawing: Objects and Principles -Roller drafting systems -Modern developments - Calculations pertaining to draw frame.
Combing: Hook formation in carding -Study pf preparatory machines to comber - Combing process-Setting -Modern -Combers -Calculations pertaining to comber.

Speed Frame: Objects -working and drafting systems -Twist insertion -Mechanism of winding -Lift of bobbin-Bobbin building mechanism -Speeds and production calculations-Modern speed frames.
Ring Frame: Objects-Working and ring frame mechanisms-Yarns tension during spinning a yarn and package faults -modern developments- calculations pertaining to ring frame.
Doubling: Objects - Dry doubling and wet doubling - Fancy yarns - Hosiery and seing threads - Properties and end uses.

Open End Spinning: Principles of Break spinning - Comparison of ring and OE yarns - Recent developments in OE spinning - Different types of rotors and opening rollers.
Modern Yarn Production Methods: Twist less spinning – Self twist spinning – Wrap spinning – Friction spinning and air-jet spinning – Comparison of the above methods for their principles and yarn properties – end used and techno-economics feasibility – Siro, core and cover spinning methods.

Fabric Manufacture


Warping: Objects – Study of modern warping machines – Production calculations.


Non Wovens: Classification - Web productions techniques – Properties of Binders – Geometry of Non woven structures Identification and testing of Non wovens – Study of thermal, spun bonding and spun lacing.


Chemical Processing Of Textiles

Pre-process: Preparatory processes to wet processing; An overview of wet processing - Sequences of wet processing – Desizing – Methods of desizing – Singeing – Methods of singeing – Batching – Sourcing – Bleaching – Mercerizing; Methods of purifying fibre yarn and Fabric made from other natural fibre like silk, wool, jute etc.; Methods of desizing – Scouring and Bleaching of regenerated cellulose fibre.


Printing: Design development for printing – Sources of inspection – the designers tools and work space – Different techniques for design generation and reproduction – Transfer of designs on wooden blocks, Screen and Stencil – Scope of printing – Methods and principles of printing – Machineries used for Textile printing – Passage of material through printing machines.


Textile Testing

Fibres: Regain – Length – Fineness – Maturity – Strength – their determination – HVI and AFIS.


Silk Technology
**Cocoons:** Sorting of cocoons, cocoon testing, storage of cocoons, stifling of cocoons, Drying of cocoons cooking of cocoons. Methods employed – Characteristics of cocoons.  
**Reeling:** Methods of Silk Reeling – Charakha – Cottage basins – Filatures – Semi automatic an automatic types. 
**Silk Throwing:** Manufacture of yarns for use in ordinary, chiffon, crepe, georgette fabrics – Number of plies and different twist levels used. Developments in Silk Throwing Industry.  
**Weaving Industry:** Warp and Weft preparation – Machineries employed in small scale and organized sections. Silk Weaving – Handloom and Power loom Weaving – Special features of silk looms – Modifications required on power loom to weave silk fabrics.  
**Spun Silk Industry:** Raw materials for Spun Silk Yarn Production, Production of Spun yarn and their properties.  
**Processing Industry:** Degumming and drying of silk yarns – Dyeing, Printing and Finishing of silk fabrics.  

**Fashion Design and Garment Technology**  
Terms and Definitions used in Fashion and Garment Industries – The art and Techniques of Body measurements and standard sizes and measurements prevalent in Garment industries.  

**Model Question paper**

**PART – 1**  
Each question carries One Marks  
50 x 1 = 50 Marks

1) Moisture regain of Polyester is ----------.  
   a) 12%  b) 0.4%  c) 10%  d) 8%

2) In Modern card the speed of the licker in is up to ----------.  
   a) 200rpm  b) 400 rpm  c) 1800 rpm  d) 750 rpm
3) The Position of the last Pick in the cloth Woven on the loom is known as
   (a) Negative shedding  
   (b) Positive shedding  
   (c) Positive & Negative shedding  
   (d) Semi positive shedding

4) Heat setting process is applicable to ----------.
   (a) Polyester  
   (b) Silk  
   (c) Wool  
   (d) Cotton

5) Hydrogen Peroxide bleaching is done at -----------.
   (a) 80-85 degree centigrade  
   (b) 140 degree centigrade  
   (c) 200 degree centigrade  
   (d) 240 degree centigrade

PART – II
Each question carries two marks  

1) The essential operations of spinning are ----------.
   (a) Twisting and Winding  
   (b) Drafting and Winding  
   (c) Drafting and Twisting  
   (d) Drafting, Twisting and Winding

2) Nylon 6,6 is made from -----------.
   a) Urea  
   b) Wood Pulp  
   c) Glober Salt  
   d) Hexamethylene diamine and Adipic acid

3) Keighley dobbey has become very popular because of its
   (a) Low Cost  
   (b) Availability  
   (c) Simplicity and reliability  
   (d) Capacity to produce defectless fabric.

4) Mercerising is done to impart ---------- to the yarn or fabric
   (a) Strength
(b) Lustre
(c) Elongation
(d) Elastic recovery

5) In cheese dyeing --------- kg of yarn is dyed in one lot..

   a) 20 Kg
   b) 40 Kg
   c) 200 - 250 Kg
   d) 1000 Kg.