

DETAILED SYLLABUS FOR THE POST OF TRADESMAN- TEXTILE TECHNOLOGY (Technical Education)

(Cat.No. : 753/2021)

(Total Marks- 100)

UNIT I

Identification of the fibre, Properties and appearance and classification of fibres. Process sequence of yarn manufacture, yarn and fabric parameters. 10 Marks

Identification textile fibres- Chemical method & burning test for identifying fiber. Study the microscopical structure of fiber.

Explain important physical and chemical properties of cotton, linen, jute, wool, silk, Polyester & Nylon,

Classification textile fibres based on origin

Understand the process sequence of yarn manufacture and identify intermediate products.

Understand the yarn parameters– count (English cotton system), twist (TPI), strength, CSP, unevenness, CV%, calculations related to count (English cotton system)

Understand various fabric quality parameters – EPI, PPI, GSM, etc.

UNIT II

Ginning, Blow room & Carding Process 10 Marks

Understand the ginning process- Identify the parts of the ginning machine and understand their functions.

Understand Blow room machines- Identify the parts of blow room machines and understand their functions. Understand the chute feed system.

Understand the carding process. Identify various parts of carding machine and understand their functions. Identify the wire specifications for processing cotton and different blends. Understand wire grinding and machine setting.

UNIT III

Drawing, Combing and Fly frame process 10 Marks

Understand Draw frame process- bottom roll and top roll setting, top roll pressure setting, cots buffing. Selection of proper guides as per sliver hank

Understand combing process- Identify various elements of comber machine and preparatory machines, understand their functions. Set the various elements of combing and preparatory machines for different cotton.

Study speed frame process. Understand bottom roll and top roll setting, top roll pressure setting, cots buffing. Selection proper guides as per sliver hank.

UNIT IV

Spinning and Post spinning operations 10 Marks

Understand ring frame process- Identify various elements of Ring frame and understand their functions. Study selection of proper roving guides as per roving hank,. Study the setting the top roll & top roller pressure. Understand bottom roller setting, ring centring, traveller, buffing of cots & trueing of bottom rollers. Know the importance of twist wheel and draft change wheel. Understand the estimation of twist wheel and draft wheel, draft, TPI and production.

Understand advanced yarn manufacturing machines (Rotor, DREF and Air jet spinning) & identify the working of various parts of the machines.

Understand cone winding, package faults- their causes and remedial measures.

Understand Reeling, Bundling and Baling

Calculate the yarn content in cone, hank, knot, bundle and bale.

UNIT V

Weaving Preparatory process 10 marks

Know the objectives of winding, warping and pirn winding process- differentiate packages from various operations like direct / indirect warping and beam / sectional warping, Understand features of modern pirn winders& know the package faults, causes, remedial measures.
 Understand the types of creel stop motions and features of modern warper machine, Learn different types of tensioners and stop motions, Know the warp beam faults, causes and remedial measures
 Know the unique processes related to sectional warping – leasing, pattern formation, section parameters, number of sections, etc.
 Calculate Production and Efficiency of preparatory machines
 Understand sizing process- the objectives of sizing, creel arrangement, size box, drying systems and yarn splitting, marking and length measuring process.
 Understand sizing parameters –Sizing ingredients& their function, recipe formulation for various yarn types, Size concentration, Size take- up, etc., sized beam defects- causes& remedial measures
 Determine the production and efficiency of sizing machine.
 Understand drawing-in and tying of warp

UNIT VI

Fabric structure

10 marks

Know the weave representation on point paper- Design, Draft, Peg plan and Treadling plan on point paper for fundamental weave patterns like Plain, Twill, Satin, and Sateen and modified weave patterns like Rib, Twill derivatives, Crepe, Honey comb, Huck- a- back, Bedford cord, Mock leno, etc.

UNIT VII

Weaving

10 marks

Know the principles of fabric formation, Classify looms based on level of operation /technology, merits/demerits of auto and non-auto looms, salient features of shuttle less looms, primary secondary and auxiliary motions and their setting, Trace the material passage through loom and identify various parts.
 Know the difference between positive and negative shedding, over and under picking, negative and positive let-off mechanisms.
 Know the mechanism of shuttle protection – fast reed and loose reed
 Calculate speed of loom shafts – crank, bottom and tappet shafts, loom constant, production of looms and its efficiency.
 Know the principles of dobby and jacquard shedding- types and classification, process of casting out in jacquard, Connection of harness to hook and lingoes.

UNIT VIII

Textile Chemical Preparatory Process

10 marks

Know the various chemicals and auxiliaries used for preparatory process. Understand singeing, De sizing, scouring, bleaching and mercerisation of yarn and fabrics. Inspect grey fabrics and identify basic faults. Identity fabric damages in different processes and rectify. Know the application of optical brightening agents. Know the washing of yarns and fabric after preparatory processes. Understand degumming and bleaching of silk- scouring and bleaching of wool.

UNIT IX

Textile Dyeing

10 marks

Understand colouring matters- Dyes and pigments. Know difference between dyeing and printing. Know the classification& properties of dyes. Understand important terminologies - M: L ratio, percent of exhaustion, and percent of shade.
 Know principle/ mechanism of dyeing. Know the working principle of dyeing machines.
 Understand the process of dyeing- Dyeing of cellulosic fibers, Wool, silk, Polyester and nylon with suitable dyes using appropriate machines.

UNIT X

Textile Printing and finishing

10 marks

Know the machine used for printing-Screen printing and roller printing. Know the dyes and ingredients used for printing. Carry out print paste preparation for screen printing process. Know the conditions of the printing process. Know the style of printing. Know the Preparation of fabric for the printing process.

Know the type of stentering required for textile materials. Know the ingredients used for softening and stiffening of cotton materials. Know the properties and application of enzymes used for bio softening process. Know different type of finishing machines used for finishing.

Know the chemicals and auxiliaries used for anti-crease, anti- shrink, waterproof, water repellent and fire retardant finish.

Know the process sequence and process parameters of heat setting of synthetic and polyester, blended materials.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper