

SYLLABUS AND SCHEME

Syllabus for written test for recruitment to the posts of Joint Director of Textiles (Handloom etc.) under the Micro, Small and Medium Enterprises and Textiles Department, Govt. of West Bengal against Advt. No. : 16/2018, Item no. I

Subject	Topic	Sub-Topic	Standard
Textile Technology and Handloom Technology	Fibre Science	Characteristics of textile fibre Classification of textile fibre on basis of its source/origin NATURAL FIBRE Cotton Fibre Commercial varieties of cotton; Physical properties of cotton; Chemical properties of cotton; Brief study of uses of cotton Bast Fibre (extraction process and different uses) Jute, Flax, Ramie, Hemp Silk Rearing, Reeling and Throwing of silk fibre; Degumming of silk fibre; Physical and chemical properties of silk fibre; Different uses of silk fibre Wool Different varieties of wool; Uses of wool fibre MANMADE FIBRE Viscose ,Polyester, Nylon and acrylic Raw materials; Physical and chemical properties; Uses	
	Weaving	Outline of weaving process Definition of weaving, common weaving terms; Classification of looms Primary, secondary & auxiliary motions of weaving; Functions & uses of various important loom parts & accessories Handloom Type of handloom; Fly shuttle frame loom; Semiautomatic looms; Tie up of healds Yarn for weaving Varieties of yarn; Various forms yarn packages; Outline of the process for conversion of yarn into fabric	
	Spinning		
		Winding Object of warp & weft winding ; Cone winding machine –mechanism & working principle; Pirn winding machine-mechanism & working principle Warping Object of warping; Beam warping machine-mechanism & working principles; Sectional warping machine-mechanism & working principles; Defects of beam and their remedies Picking Mechanism Type of picking mechanism & working principles Beating up mechanism The motion of the sley; Eccentricity of sleys motion & its effect Secondary motion Take – up motion & its type; Seven wheel take up motion; Let off motion & its type; Negative & positive let off mechanism Sizing Object of sizing; Study of sizing ingredients & their function; Preparation of sizing paste; Sizing machine-mechanism & working principles Dobby Loom Principles of doobby shedding; Types of doobby; Timing & setting of doobby; Common defects of doobby-causes & remedies Jacquard Loom Objects & principles of jacquard shedding; Types of jacquard; Timing and setting of jacquard loom; Study of different system of harness mounting and harness ties; Study of working of piano card cutting machine card lacing and their mounting Fabric Defects Common fabric defects, causes and their remedies Calculation related to cost of fabrics	

Fabric structure	<p>Plain weave & its derivatives Plain weave; Warp rib weaves; Weft rib weaves; Mat weaves</p> <p>Twill weave & its derivatives Characteristics of twill weave; Construction of twill weave; Rearranged twill Combined twill; Broken twill; Diamond design; Influence of twist direction & angle of twill on appearance of twill; Satin weaves</p> <p>Simple toweling & curtain fabrics Ordinary honey comb design; Double stitched ordinary honey comb; Straight draft honey comb; Brighten honey comb</p> <p>Yarn numbering system Indirect system of numbering of yarn; Direct system of numbering of yarn Resultant count of folded yarn; Conversion of count of yarn</p> <p>Heald count & reed count Different system of heald count; Different system of reed count</p> <p>Bedford cord & Pique design Plain faced Bedford cord design produced by pair of picks; Plain faced Bedford cord design produced by alternate picks; Twill face Bedford cord; Extra warp and extra weft figuring; Cross over and spot figures; Loose back and fast back pique</p> <p>Warp pile fabric Construction of different types of terry pile fabrics-3 pick, 4 pick, 5 pick & 6 pick terry pile; Weaving mechanism for producing terry pile structure</p> <p>Weft pile fabrics Velveteen; Plain back velveteen; Twill back velveteen; Length of pile; Density of pile; Fast pile structure</p> <p>Back cloth design Principle of tying & stitching back cloth; Types of back cloth; Warp back; Weft back; Reversible back cloth; Warp wadded weft back cloth; Weft wadded warp back cloth</p> <p>Double cloth</p>	
Textile Chemistry	<p>Classification of double cloth; Self stitched double cloth; Centre stitched double cloth; Thread interchange double cloth; Cloth interchange double cloth; One side binding double cloth; Both side binding double cloth</p> <p>Gauze & Leno weaving Introduction of gauze & leno structure; Construction of doup healds & its uses Gauze & leno design, drafting plan, lifting plan & types of sheds</p> <p>Yarn & cloth calculation Influence of yarn diameter on cloth setting rules; Determination of cover factor & cloth particulars</p> <p>Jacquard design Construction of jacquard design for side border & allover effect e. g. Bisymmetrical & multi symmetrical design; Different stages for transferring a small motif to the fabric; Arrangement of figured in jacquard design like-unit repeat, drop principle, satin</p> <p>Analysis of woven fabrics Identification of warp and weft; Brief discussion about the analyzing procedures</p> <p>Calculation of weight of warp & weft</p> <p>Extra Warp and Extra Weft Designs</p> <p>Dyeing Classification of dyestuff according to methods of application; Determination of water hardness; Scouring of cotton yarn; Bleaching of cotton yarn; Mercerizing; Dyeing with direct dyes of cotton; After treatment of direct colours on cotton; Basic & Acid dye-general characteristics and methods of application; Reactive, Vat and Sulphur dye-general characteristics and methods of application; Combined scouring and bleaching of Jute; Jute bleach for white end use; Dyeing of jute materials; Dyeing of Silk; A brief study of some vegetable colour and their methods of application, Azo Free Dyes .</p> <p>Colour Fastness-washing, light, rubbing, hot ironing</p> <p>Printing</p>	

		Preparation of cotton for printing; Thickening agents and assistance used in textile printing; Methods of printing- Hand Block, Stencil Screen; Various styles of printing-direct, discharge; Preparation of printing pastes with different dyestuff; Some common faults in printing and their rectifications	
	Textile Testing	<p>Moisture and Textiles Effect of moisture on textiles and textile processing and testing; Definition of absolute and relative humidity, moisture content & moisture regain and their relationship; Study of the methods for the determination of –relative humidity by wet & dry bulb hygrometer and Moisture content & moisture regain by conditioning oven & Shirley moisture meter</p> <p>Yarn Number Principle involved in determination of yarn number; Determination of yarn number from yarn & cloth; Use of instruments for determination of yarn number- knowledge balance; Quadrant balance and Beasley balance</p> <p>Yarn Twist Effect of twist on the quality of yarn and fabrics; Optimum twist and its essentiality; Determination of twist of single and ply yarn</p> <p>Yarn Strength Testing Principle of different methods; Study of yarn strength testing instruments-Lea Tester, Single thread tester, Ballistic tester</p> <p>Yarn evenness Meaning of random variation, periodic variation, short, medium and long term variation; Index of irregularity in evenness determination; Measurement of yarn evenness by –Black Board Test, Fielden Walker Test</p> <p>Fabric Testing Determination of fabric testing related to : Thickness, Weight, Crimp; Study of tear, tensile, bursting, and abrasion properties of fabric; Air and water permeability test</p> <p>Crease Resistance and Crease Recovery Determination of crease resistance and crease recovery properties</p>	1

	Environment and Pollution Management	<p>General concept Nature and scope of environmental problems</p> <p>Environmental Pollution Water pollution-types, sources and their effects; Occupational health-hazards related handloom industry processes, various sources of water in wet processing, characteristics of waste water, water conservation</p> <p>Pollution Monitoring and control Principles and methods of waste water treatments, design of effluent treatment plant and disposal of waste</p>	
General Knowledge and Current Affairs	Physics, Chemistry, Biology, Indian History, Indian Geography, etc.		Madhyamik or equivalent
English	(a) Condensing of a prose passage (summary or precis); (b) Translation from Bengali into English; (c) Comprehension, Grammar, Sentence Corrections, Synonyms & Antonyms, Spelling, Idioms / Phrases, etc.		Madhyamik or equivalent
West Bengal Cooperative Society Act, 2006 and rules made thereunder	The West Bengal Cooperative Societies Act, 2006, West Bengal Co-Operative Societies (Amendment Act) 2011, West Bengal Co-Operative Societies (Amendment Act) 2013, The West Bengal Cooperative Societies Rules, 2011		General
Computer Application	Components of computer system, concept of computing data and information, basics of operating system, file and directory management, word processing basics, using spread sheets, opening and closing documents, text creation and manipulation, formatting the text, table manipulation, basics of computer network(LAN), introduction to internet and world wide web(www), basics of e-mail and using, creation of power point presentation.		

SCHEME OF THE EXAMINATION

- i) Date of Examination – 16.11.2019
- ii) Type of test – Objective type test
- iii) Full Marks – 100
- iv) No. of questions – 100 (each carrying 1 marks)
- v) Duration of Exam – 1:30 hours (12 noon to 1:30 p.m.)
- vi) Negative marking – 1/3 marks for each wrong answer.