ANNEXURE-IV TO NOTIFICATION NO. 7/2/2022-MPSC (DR) DATED 20-03-2026

1. Which of the following is a natural fibre?

   (A) Nylon (B). Polyester

   (C) Cotton (D) Acrylic

2. 5S stands for:

   (A) Sort, Set in order, Shine, Standardize, Sustain

   (B) Strength, Softness, Stretch, Shrinkage, Shear

   (C) Sample, Size, Strength, Style, Surface

   (D) Spin, Stretch, Set, Shine, Store

3. Sulphur dyes are mainly used for:

   (A) Polyester (B) Cellulosic fibres like cotton

   (C) Acrylic fibres (D) Nylon

4. The main purpose of textile finishing is to:

   (A) Increase fibre length (B) Improve appearance and performance

   (C) Reduce yarn count (D) Change weave

5. If Mean = 50 and SD = 5, what is the Standard Error for sample size 25?

   (A) 1 (B) 2

   (C) 5 (D) 10

6. Dyeing blends of cotton/polyester requires:

   (A) Only reactive dyes

   (B) Combination of reactive and disperse dyes

   (C) Only sulphur dyes

   (D) Only acid dyes

7. Antistatic finishing is applied to:

   (A) Reduce moisture absorption

   (B) Reduce accumulation of static charges

   (C) Increase fibre strength

   (D) Increase shrinkage

8. In High Volume Instrument (HVI) testing of cotton, fibre bundle strength is expressed in:

   (A) g/denier (B) cN/tex

   (C) Tex (D) MPa

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

9. Protein fibres dissolve in:

(A) Dilute alkali (B) Concentrated mineral acids

(C) Water (D) Ether

10. OBAs work by:

(A) Absorbing UV and emitting blue light (B) Removing dirt

(C) Adding yellow tint (D) Oxidizing fibre

11. Rayon is considered:

(A) Fully synthetic fibre (B) Regenerated fibre

(C) Animal fibre (D) Mineral fibre

12. AFIS (Advanced Fibre Information System) measures:

(A) Fibre length distribution, neps, fineness, trash content

(B) Fabric drape

(C) Yarn count

(D) BOD of water

13. Indicator used in EDTA method is:

(A) Methyl orange (B) Phenolphthalein

(C) Eriochrome Black T (D) Starch

14. COD (Chemical Oxygen Demand) indicates:

(A) Amount of oxidizable organic matter in water

(B) Yarn evenness

(C) Fabric air permeability

(D) Fibre fineness

15. Nylon-6,6 is prepared from:

(A) Ethylene glycol + terephthalic acid (B) Hexamethylene diamine + adipic acid

(C) Acrylonitrile (D) Glucose

16. Method study involves:

(A) Flow process chart, motion study, operation analysis

(B) Statistical analysis of water hardness

(C) Yarn evenness measurement

(D) Colour fastness testing

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

17. Evenness of slivers, rovings, and yarns is measured using:

(A) Uster evenness tester (B) Tensile tester

(C) Air permeability tester (D) Crease recovery tester

18. Profit & Loss account records:

(A) Revenue, expenses, and net profit over a period

(B) Yarn twist

(C) Fibre length

(D) Fabric GSM

19. Durable press finishing is mostly applied to:

(A) Cotton and cotton blends (B) Polyester only

(C) Wool only (D) Silk only

20. Hydrogen peroxide bleaching is preferred for cotton because it:

(A) Is milder and safer (B) Weakens fibre more

(C) Leaves chlorine (D) Colours fibre

21. Blends of cotton/polyester can be printed using:

(A) Combination of reactive dyes (cotton) and disperse dyes (polyester)

(B) Only reactive dyes

(C) Only acid dyes

(D) Only vat dyes

22. TGA measures:

(A) Colour change (B) Weight change with temperature

(C) pH change (D) Density

23. Starch finish is mainly used to:

(A) Increase dye uptake (B) Impart temporary stiffness and body

(C) Make fabric water repellent (D) Prevent creasing permanently

24. Flame retardant compounds often contain:

(A) Nitrogen, phosphorus, or halogens (B) Alkalis

(C) Surfactants (D) Silicones only

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

25. The monomer unit of cellulose is:

(A) Glucose (B) Amino acid

(C) Ethylene (D) Propylene

26. The main purpose of singeing is to:

(A) Remove starch (B) Remove protruding fibres

(C) Bleach fabric (D) Increase strength

27. In textile project management, what does a "Time and Action (T&A) Calendar" primarily facilitate?

(A) Calculating the GSM of a fabric batch

(B) Mapping critical path activities from order placement to final shipment

(C) Tracking daily electricity consumption in a spinning mill

(D) Managing human resource payroll for weavers

28. Caprolactam is used in the manufacture of:

(A) Nylon-6 (B) PET

(C) Rayon (D) PAN

29. Permanent functional finishes are fixed using:

(A) Heat and/or chemical crosslinking (B) Water only

(C) Brushing (D) Singeing only

30. Wash & wear finishing prevents:

(A) Colour fading (B) Creasing

(C) Yarn breakage (D) Fibre elongation

31. Wool and silk are dyed in:

(A) Acidic medium (B) Alkaline medium

(C) Neutral medium (D) Organic solvent

32. FAST stands for:

(A) Fabric Assurance by Simple Testing (B) Fabric Analysis by Strength Test

(C) Fibre Analysis and Stretch Test (D) Fabric Assessment Strength Technique

33. In melt spinning, polymer is:

(A) Dissolved in water (B) Melted and extruded

(C) Chemically treated (D) Fermented

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

34. Oxidative desizing uses:

(A) Sodium hydroxide (B) Hydrogen peroxide

(C) Acetic acid (D) Soap

35. Colour staining during washing is assessed by:

(A) Blue scale (B) Grey scale

(C) Denier test (D) GSM test

36. In kier scouring, cotton is treated under:

(A) Atmospheric pressure (B) High pressure

(C) Vacuum (D) Freezing

37. Which term refers to the total time elapsed from the initial order placement by a buyer until the final delivery of the textile product?

(A) Processing time (B) Lead time

(C) Buffer time (D) Cycle time.

38. The polymer chain in cellulose is linked by:

(A) Peptide bonds (B) Ester bonds

(C) β-1,4-glycosidic bonds (D) Amide bonds

39. NMR spectroscopy provides information about:

(A) Molecular structure (B) Colour intensity

(C) Fabric thickness (D) Moisture content

40. During mercerization of cotton under tension, the crystalline transformation that occurs is:

(A) Cellulose I → Cellulose II (B) Cellulose II → Cellulose I

(C) Amorphous → Crystalline polyester (D) β-keratin → α-keratin

41. Strong alkali damages wool because it:

(A) Hydrolyses peptide bonds (B) Oxidizes cellulose

(C) Melts fibre (D) Shrinks polyester

42. Denier is defined as weight in grams of:

(A) 100 m (B) 1000 m

(C) 9000 m (D) 10,000 m

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

43. Cotton in cotton/polyester blend can be removed by:

(A) NaOH treatment (B) HCl treatment

(C) Acetone (D) Formic acid

44. Quantitative blend analysis is based on:

(A) Weight loss after selective dissolution (B) Colour change

(C) Shrinkage (D) GSM

45. Antistatic finishing is tested by:

(A) Measuring surface resistivity (B) Measuring tensile strength

(C) Measuring shrinkage (D) Observing colour change

46. Laboratory development of finishing compounds ensures:

(A) Safety and effectiveness (B) Colour uniformity

(C) Yarn twist (D) Fibre length

47. Texturizing is done to:

(A) Increase moisture (B) Give bulk and crimp

(C) Reduce strength (D) Remove dye

48. Optical brighteners (OBAs) are applied mainly during:

(A) Scouring (B) Bleaching

(C) Singeing (D) Mercerization

49. Ends per inch (EPI) refers to:

(A) Weft threads per inch (B) Warp threads per inch

(C) Total threads per inch (D) Yarn count

50. Spectrophotometer measures:

(A) Thermal stability (B) Absorbance or transmittance

(C) Molecular weight directly (D) Fibre diameter

51. Continuous scouring requires:

(A) Batch processing (B) Machine with rollers and padding

(C) Hand washing only (D) Solvent-free treatment

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

52. Silk degumming removes:

(A) Fibroin (B) Sericin

(C) Cellulose (D) Lignin

53. Prolonged exposure to sunlight causes yellowing in:

(A) Polyester (B) Nylon

(C) PAN (D) PET

54. Acrylic fibres are mainly made from:

(A) Vinyl chloride (B) Acrylonitrile

(C) Caprolactam (D) Adipic acid

55. In condensation polymerization, usually eliminated molecule is:

(A) Oxygen (B) Hydrogen

(C) Water (D) Nitrogen

56. Wrinkle test evaluates fabric's:

(A) Dye uptake (B) Recovery from creasing

(C) Fibre length (D) Yarn count

57. Commercial application of functional finishes often requires:

(A) Continuous machines like padding mangle, stenter, curing oven

(B) Hand soaking only

(C) Brushing and singeing only

(D) No heating

58. Select the correct answer:

Assertion (A): Nylon-6,6 is formed by condensation polymerization.

Reason (R): Water is eliminated during its polymer formation.

(A) Both Assertion and Reason are true, and Reason is the correct explanation.

(B) Both are true, but Reason is NOT the correct explanation.

(C) Assertion is true, Reason is false.

(D) Assertion is false, Reason is true.

59. Turns per inch (TPI) measure:

(A) Yarn weight (B) Yarn twist

(C) Yarn length (D) Yarn moisture

SPECIMEN QUESTION PAPER [Paper-I (Textile Chemistry)] for Project Manager (Textile Chemistry)]

60. Bleaching agent commonly used for cotton is:

(A) Sodium hypochlorite (B) Sodium carbonate

(C) Acetic acid (D) Ammonia

61. Softeners improve fabric:

(A) Strength (B) Handle and feel

(C) Weight (D) Twist

62. Polyester is bleached mainly with:

(A) Chlorine (B) Hydrogen peroxide

(C) NaOH (D) HCl

63. Disperse dyes are water-insoluble and require:

(A) Surfactants or dispersing agents (B) Alkali only

(C) Acid only (D) No medium

64. Rotary screen printing combines:

(A) Continuous production and screen technique

(B) Block printing only

(C) Direct printing

(D) Heat transfer

65. TQM stands for:

(A) Total Quality Management

(B) Total Quantity Measurement

(C) Textile Quality Maintenance

(D) Time Quality Management

66. Fabric air permeability measures:

(A) Fibre strength (B) Ease of air passage through fabric

(C) Yarn twist (D) Water hardness

67. Modern dyeing techniques include:

(A) Jet dyeing (B) Pad-batch dyeing

(C) Continuous dyeing (D) All of the above

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry)] for Project Manager (Textile Chemistry)]

68. Durable press finishes use:

(A) Hydrogen peroxide

(B) Sodium hydroxide

(C) Urea-formaldehyde or melamine-formaldehyde resins

(D) Silicones

69. Damping machines are used to:

(A) Remove chemicals

(B) Apply uniform moisture before finishing

(C) Cut fabric

(D) Dry fabric

70. Mothproofing finishes use:

(A) Starch (B) Permethrin

(C) NaOH (D) Hydrogen peroxide

71. Sodium chlorite bleaching is mainly used for:

(A) Wool (B) Polyester

(C) Cellulosic fibres (D) Acrylic

72. A kier is generally used for:

(A) Dyeing (B) Bleaching

(C) Batch scouring (D) Printing

73. Enzymatic desizing uses:

(A) Lipase (B) Protease

(C) Amylase (D) Catalase

74. Resin finishing improves:

(A) Denier (B) Colour depth

(C) Yarn count (D) Wrinkle resistance

75. Water-proofing agents increase:

(A) Absorbency (B) Water repellency

(C) Strength (D) Dyeing rate

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

76. Vat dyes require:

(A) Oxidation before dyeing (B) Reduction to soluble form

(C) Acid medium (D) Neutral medium only

77. Ion exchange method replaces Ca^{2+} and Mg^{2+} with:

(A) Cl^- (B) SO_4^{2-}

(C) Na^+ (D) H^+ only

78. Nylon/acrylic blends are analyzed by:

(A) Burning only (B) Denier test

(C) Twist measurement (D) Selective solvent method

79. Polyester is resistant to:

(A) Strong alkali (B) Concentrated acid

(C) Most organic solvents (D) Water only

80. A water sample contains 204 mg of $CaSO_4$ (Molecular Weight = 136) per liter. The hardness in terms of $CaCO_3$ equivalents is:

(A) 100 ppm (B) 250 ppm

(C) 200 ppm (C) 150 ppm

81. Colour fastness to light is tested using:

(A) Oven (B) Xenon arc lamp

(C) Washing machine (D) Microscope

82. Ash content is determined by:

(A) Heating in water (B) Burning sample in muffle furnace

(C) Freezing (D) Soaking in acid

83. Warp yarns are generally:

(A) Weaker than weft (B) Stronger than weft

(C) Shorter (D) Less twisted

84. Higher yarn count (indirect system) produces fabric that is:

(A) Coarser (B) Heavier

(C) Finer and lighter (D) Stiffer

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry)] for Project Manager (Textile Chemistry)]

85. Wear and tear resistance is also called:

(A) Tensile resistance (B) Abrasion resistance

(C) Twist resistance (D) Elastic recovery

86. Effluents from textile industries are rich in:

(A) Dyes, salts, surfactants, and organic matter

(B) Only water

(C) Only fibres

(D) Only starch

87. Labour laws ensure:

(A) Fabric GSM

(B) Yarn twist optimization

(C) Fabric crease recovery

(D) Worker safety, fair wages, and working conditions

88. Costing helps in:

(A) Pricing, budgeting, and profitability analysis

(B) Fabric testing

(C) Yarn twist measurement

(D) Air permeability measurement

89. KES-F measures:

(A) Mechanical properties of fabric for hand evaluation

(B) Fibre maturity

(C) Yarn twist

(D) Water hardness

90. Time study uses:

(A) Air permeability tester

(B) Tensile tester

(C) Stopwatch and predetermined motion time systems (PMTS)

(D) Crease recovery tester

91. Fibre maturity indicates:

(A) Yarn hairiness (B) Fibre twist

(C) Thickness of fibre wall (D) Fabric stiffness

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

92. Tear strength is tested by:

(A) Elmendorf tear tester (B) Tensile tester only

(C) Air permeability tester (D) Crease recovery tester

93. Printing of synthetics requires:

(A) Sulphur dyes (B) Direct dyes

(C) Vat dyes (D) Disperse dyes

94. Heat transfer printing is suitable for:

(A) Synthetic fibres like polyester (B) Cotton

(C) Wool (D) Silk

95. High temperature and pressure dyeing is often used for:

(A) Cellulosic fibres (B) Polyester fibres

(C) Wool (D) Cotton blends

96. Direct dyes are applied in:

(A) Neutral or slightly alkaline conditions (B) Strong acid only

(C) Organic solvents only (D) Reducing agents

97. Flame-retardant finishing is essential for:

(A) Casual garments (B) Upholstery, curtains, and uniforms

(C) Knitted woolens only (D) Synthetic yarns only

98. Washing machines in finishing remove:

(A) Dye only

(B) Residual chemicals after scouring or bleaching

(C) Fibre

(D) Yarn twist

99. Soil-release finishes are evaluated by:

(A) Staining and washing cycles (B) Stretching

(C) Heat treatment only (D) Twisting

100. Heat-setting temperature must be controlled to avoid:

(A) Colour fading only (B) Wrinkle formation

(C) Yarn breakage only (D) Fibre shrinkage or melting

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]

SPECIMEN QUESTION PAPER [Paper-I - (Textile Chemistry) for Project Manager (Textile Chemistry)]