(Answer ALL questions)

56. The birefringence value of polyethylene fibre is

1. –0.005
2. 0.005
3. 0.046
4. 0.044

57. The variation in the absorption by the dye with the direction of polarization of the light is called as

1. Shade variation
2. Refractive index
3. Dichroism
4. Birefringence

58. Hygral expansion is related to ———— fibre

1. Cotton
2. Silk
3. Wool
4. Nylon

59. An Unknown fibre on treatment with lead acetate forms lead sulphide. Identify the fibre

1. Wool
2. Silk
3. Flax
4. Jute

60. Chemical depolymerisation is more suitable for

1. Condenstion Polymerisation
2. Addition polymerisation
3. Interfacial polymerisation
4. Solid state polymerization

61. A polyester fabric was coated with rubber and was tested in a FTIR instrument. A characteristic band at 2243 cm^{-1} was observed. The rubber is

1. Nitrile –butadiene rubber
2. Polychloroprene rubber
3. Isoprene- Isobutylene rubber
4. Styrene –butadiene rubber

62. Lower cohesive energy density of polymers indicates

1. Flexible chains
2. Stiffer chains
3. Plastic
4. Fibre

63. The ratio of Young's modulus to Shear modulus is higher for

1. Polypropylene
2. PET
3. Nylon 6
4. Nylon 66

64. False twist texturising is not done for

1. Polypropylene
2. Polyester
3. Nylon
4. Acrylic

65. The DP of cotton is

1. Higher than flax
2. Lower than viscose
3. Lower than jute
4. Higher than jute

66. The cotton fibre maturity is influenced by

1. Primary layer
2. S1 layer
3. S2 layer
4. S3 layer

67. The number of amino acids in silk fibre is

1. 16
2. 20
3. 24
4. 28

68. The hank of sliver fed to a draw frame is X Ne. Eight slivers are fed and break draft of Y1 and main zone draft of Y2 is applied. If the resultant hank of the feed sliver increases by Z% and if the break draft is maintained same, the main zone draft should be ———— to get uniform hank of the output sliver

1. Increased by Z%
2. Decreased by Z%
3. Increased by Z. (Y1/Y2) %
4. Decreased by Z. (Y1/Y2) %

69. Determine the draft to be applied in the ring frame if the roving hank is 1.8 Ne and yarn count required is 60 Ne. Assume contraction due to twist of 5%

1. 31.7
2. 33.3
3. 35.0
4. 50.0

70. For comparing the labour and machine productivity, the indices are standardized to ———— yarn.

1. 40 Ne combed
2. 40 Ne carded
3. 30 Ne combed
4. 30 Ne carded

71. Select the odd one based on the principle of yarn formation

1. DREF 2 system
2. Airjet system
3. Electrostatic spinning
4. Rotor spinning system

72. In a draw frame, 6 cotton slivers of 5 ktex and 2 polyester slivers 6 ktex are fed. The total draft given at the draw frame is 6. The proportion of cotton and polyester in the output sliver is about

1. 30/42, 12/42
2. 12/42, 30/42
3. $30/(42 \times 8)$, $12/(42 \times 8)$
4. $12/(42 \times 8)$, $30/(42 \times 8)$

73. Normally, the proportion of waste removed at licker-in, flat and other positions of card out of the total waste removed at the card shall be

1. 50%, 30%, 20%
2. 20%, 20%, 60%
3. 30%, 50%, 20%
4. 20%, 30%, 50%

74. For calculating production (kg) of comber which of the following details are essential

1. linear density of lap, feed per nip, nips per minute, noil%
2. feed per nip, nips per minute, noil%, hank of comber sliver
3. nips per minute, noil%, hank of comber sliver, linear density of lap
4. linear density of lap, feed per nip, nips per minute, draft

75. The yarn produced from which spinning system would be bulkier?

1. DREF 2
2. Air vortex
3. Ring
4. Rotor

76. The centrifugal force (Newton) acting on a material, of mass × grams and mean radius of 3 cm, present at the tip of a beater of radius 50 cm rotating at 100 rpm is

1. $50\ \pi/3$
2. $3.x.\ \pi^2/9$
3. $50.\pi^2/9$
4. $50.x.\ \pi^2/9$

77. The noil% removed by the comber running in backward feed can be increased by

1. Increasing feed amount per nip movement
2. Decreasing feed amount per nip movement
3. Decreasing detachment distance
4. Lifting the top comb up

78. Which one of the following is not related to labour productivity?

1. Production efficiency of machine
2. HOK
3. OHS
4. Pneumafil waste collected from ring frame

79. The resultant count of yarn produced by plying of two yarns of 40 Ne each is

1. 40 + 40 Ne
2. 1/40 + 1/40 Ne
3. $[1/40 + 1/40]^{-1}$ Ne
4. $[40 + 40]^{-1}$ Ne

80. In drum driven winder, ———— as winding progresses.

1. Angle of wind increases
2. Angle of wind remains the same
3. Angle of wind decreases
4. Angle of wind first increases and then decreases

81. Select the incorrect statement

1. Imperfections in the cone yarn is higher than ring yarn
2. Imperfections in the cone yarn is less than ring yarn
3. Imperfections in carded cotton yarn is higher than that of combed cotton yarn
4. Imperfections present in the yarn are measured based on capacitance principle

82. High speed looms require higher quality wet yarn because

1. of higher weft tension in picking
2. it is a requirement for better looking fabric
3. lower abrasion is needed in fast picks
4. of the faster rates of pirn winding

83. The algorithm used for controlling uniform size application is

1. constant level control
2. accelerated difference control
3. anticipation control
4. constant differential control

84. The limiting factor for production rate in the shuttle looms is

1. time for shedding
2. beat up force
3. weft insertion rate
4. keeping warp speed constant

85. Higher sley eccentricity results the motion

1. deviating more from simple harmonic motion
2. close to simple harmonic motion
3. slower at front and faster at back centre of loom
4. same at front and back centre of loom

86. In negative let-off mechanism, when the warp beam exhausts, warp yarn tension

1. Gradually reduces
2. Remains constant
3. Initially increases and then decreases
4. Gradually increases

87. In weaving of filament yarn, it is preferred that the healds cross at

1. front center
2. back center
3. top center
4. bottom center

88. The characteristic nature of chemical groups present in cotton is the presence of

1. Primary and secondary alcohol groups
2. Primary and tertiary alcohol groups
3. Secondary and tertiary alcohol groups
4. Primary, secondary and tertiary alcohol groups

89. Cofactors are nothing but groups that are responsible for making an enzyme

1. Practically functional
2. Non-reactive
3. Temperature sensitive
4. pH sensitive

90. The action that takes place during mercerization is

1. Formation of cellulose I
2. Formation of cellulose II
3. Formation of α cellulose
4. Formation of β cellulose

91. Langmuir adsorption isotherm is observed in the application of

1. Disperse dyes on polyester fibre
2. Basic dyes on modified polyester
3. Direct dyes on cotton fibre
4. Vat dyes on cotton fibre

92. The extent of hydrolysis is maximum in the application of

1. Monochlorotriazinyl dyes
2. Dichlorotriazinyl dyes
3. Vinyl sulphone reactive dyes
4. Bifunctional reactive dyes

93. After treatment in vat dye application on cotton is used to improve

1. Wash fastness
2. Light fastness
3. Rubbing fastness
4. Perspiration fastness

94. Reduction clearing is a terminology used in the application of

1. Vat dyes
2. Azoic dyes
3. Metal-complex dyes
4. Disperse dyes

95. The type of relationship the optical density and K-M function maintains with dye concentration is

1. Both linear
2. Non-linear and non-linear respectively
3. Non-linear and linear respectively
4. Both non-linear

96. Double blade squeezees find application

1. Only in manual screen printing
2. Only in flat-bed screen printing
3. Only in rotary screen printing
4. Both in flat-bed and rotary screen printing

97. Use of emulsion thickeners in printing makes washing process

1. Compulsory
2. Optional
3. Unnecessary
4. Meaningless

98. The molecule that is eliminated during crease- proofing of fabrics with DMDHEU is

1. $-RCH_2OH$
2. –RCHOH
3. –ROH
4. –RO

99. The essential part of relax dryers used in dimensional stabilization of tubular knits is

1. Expander
2. Chains with clips
3. Chains with pins
4. Conveyor belt

100. During length measurement on fibrograph, 2.5% span length was found to be 25mm. It means

1. 2.5% of fibers clamped are exactly 25mm in length
2. 2.5% of fibers clamped are atleast 25mm in length
3. 2.5% of fibers are 25mm longer
4. 2.5% of fibers clamped are less than 25mm

101. Tenacity of cotton fiber changes with increasing moisture regain in the following manner

1. increases
2. decreases
3. remains constant
4. decreases rapidly

102. The U% of Single yarn is 17.3%. The expected U% of a 3-ply yarn produced from this yarn will be

1. 5.8%
2. 10.0%
3. 12.3%
4. 17.3%

103. In Yarn Evenness testing the variance length curve is more suitable for

1. Periodic faults
2. Non-periodic mass variation
3. Imperfections
4. Variation in the count

104. The drapeability of a fabric can be improved by

1. reducing the number of picks/inch
2. reducing the float length
3. increasing the number of picks/inch
4. none of the above

105. Crimp interchange is a phenomena associated with

1. Bursting strength
2. Abrasion resistance
3. Tensile Strength
4. Tear strength

106. The CV% of mass irregularity of yarn approximately equals to U% multiplied by

1. 1.00
2. 1.25
3. 1.44
4. 1.73

107. On a 4 point fabric grading system (ASTM D5430) when the length of the defect is more than 3.2 inches but less than 6 inches, how many demerit points are given?

1. 3 points
2. 2 points
3. 4 points
4. 1 point

108. Fabrics made out of yarns which are loosely twisted, irregular, hairy and fancy will have

1. Better thermal insulation
2. Poor thermal insulation
3. Good thermal conductivity
4. Poor thermal comfort

109. A fabric roll of 120 yard long and 48 inches wide contain the following defects 2 defects upto 3 inch, 5 defects over 3 inch but less than 6 inch, 1 defect over 6 inch but less than 9 inch, 1 defect over 9 inch. The defect points/100 yd^2 is given by

1. 11.9
2. 10
3. 15.3
4. 7

110. The standard error of estimate of difference of two means having the sample size of n_1 and n_2 and pooled estimate of standard deviation S_1 is

1. $S_1\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}$
2. $S_1\sqrt{\frac{1}{n_1}-\frac{1}{n_2}}$
3. $S_1\sqrt{\frac{1}{2n_1}-\frac{1}{2n_2}}$
4. $S_1\sqrt{\frac{1}{n_1}\times\frac{1}{n_2}}$

111. The Air permeability of a fabric increases linearly with increase in twist factor. This is due to the fact that the

1. air space in the yarn is less
2. warp and weft cover factor is high
3. air space in the yarn is high
4. warp and weft cover factor is constant

112. Weft knit fabrics are ———— than woven fabrics.

1. Less extensible with complete recovery
2. Highly extensible with complete recovery
3. Less extensible with incomplete recovery
4. High extensible with incomplete recovery

113. The introduction of float stitches in the knitted fabric will

1. Increase the thickness of the fabric
2. Increases the width of the fabric
3. Reduces the thickness of the fabric
4. Increase the elongation of the fabric

114. Long and short needles are used in the

1. Single jersey machine
2. Inter lock machine
3. Rib knitting machine
4. Purl knitting machine

115. Accordian knit fabrics are produced by

1. Cotton fabrics with the combination of knit, tuck and float stitches
2. Wool fabrics with the combination of knit, tuck and float stitches
3. Cotton fabrics with the combination of knit and tuck stitches
4. Wool fabrics with the combination of knit and tuck stitches