PART III

21 — TEXTILE TECHNOLOGY

(Answer ALL questions)

41. The glass transition temperature of polyester is
    a. 80°C
    b. 100°C
    c. 210°C
    d. 230°C

42. Which one of the following spinning system gives higher production rate?
    a. Melt spinning
    b. Dry spinning
    c. Wet spinning
    d. Spin drawing

43. Silk is a
    a. Homo polymer
    b. Random copolymer
    c. Block copolymer
    d. Alternating copolymer

44. The density of polypropylene is
    a. 1.14 g/cc
    b. 1.38 g/cc
    c. 0.92 g/cc
    d. 1.52 g/cc

45. The amount of recommended water (by weight) in dried poly (ethylene terephthalate) chips suitable for melt spinning is in the range of
    a. Approximately 1%
    b. 0.1 to 0.4%
    c. 0.04 to 0.06%
    d. 0.001 to 0.005%

46. Which one of the following is a regenerated protein fibre?
    a. Viscose
    b. Casein
    c. Cuprammonium rayon
    d. Cellulose acetate

47. The crystallinity percentage of silk is
    a. Higher than cotton but lower than wool
    b. Higher than wool
    c. Lower than cotton but higher than wool
    d. Lower than cotton and wool

48. The fibre which is having negative birefringence value is
    a. Cotton
    b. Nylon
    c. Silk
    d. Acrylic

49. The density of polyester fibre is
    a. Greater than cotton
    b. Less than cotton but greater than wool
    c. Less than nylon
    d. Greater than nylon but less than polyethylene

50. The moisture regain of nylon is
    a. Greater than wool
    b. Less than PP
    c. Greater than cotton
    d. Less than cotton but greater than polyester

51. Convolution count of a cotton fibre is defined as
    a. Number of convolutions in a fibre
    b. Number of convolution in a unit length of a fibre
    c. The average density of a fibre
    d. Average convolutions of a bunch of fibres

52. The number of amino acids in casein fibre is
    a. 20
    b. 18
    c. 16
    d. 14

53. Based on the principle of yarn formation, select the odd one among the following.
    a. Rotor spinning
    b. DREF 2 spinning
    c. Electrostatic spinning
    d. Two nozzle Airjet spinning

54. Two yarns of count X each are doubled and plied. The ratio of resultant count of two ply yarn expressed in tex system and Ne system is ————————. Neglect contraction due to twist.
    a. 4
    b. 2
    c. ½
    d. ¼

55. The surface speed of cylinder is
    a. Greater than that of licker in
    b. Lesser than that of licker in
    c. Lesser than that of doffer
    d. Greater than that of doffer but lesser than licker in

56. The winding tension at the ring frame will be highest during winding at
    a. Empty portion of cop bottom
    b. Empty portion of cop tip
    c. Full diameter portion of cop tip
    d. Full diameter portion of cop bottom

57. The number of fibres in the cross section of comber lap for best combing should be about
    a. 50,000
    b. 1,00,000
    c. 5,00,000
    d. 8,00,000

58. In the carding machine, the closest setting exists between
    a. Cylinder and licker-in
    b. Cylinder and flat
    c. Cylinder and doffer
    d. Feed plate and licker-in

59. In cotton spinning, at the ring frame, the shore hardness of front top roller is normally
    a. Higher than that of back roller
    b. Higher than that of middle roller
    c. Lesser than that of back roller
    d. Equal to that of back roller

60. Select the correct match

I	Core sheath yarn	(i)	Rotor yarn
II	Back doubling	(ii)	DREF yarn
III	Wrapped bundle of straight fibres	(iii)	Condensed spun yarn
IV	Reduced spinning triangle	(iv)	Two nozzle air jet yarn

    a. I-ii, II-i, III-iii, IV-iv
    b. I-i, II-ii, III-iii, IV-iv
    c. I-i II-ii, III-iv, IV-iii
    d. I-ii, II-i, III-iv, IV-iii

61. The trash content of cotton fed to the blow room is 5%. The blow room has three machines having individual cleaning efficiency of 25%, 30%, 25% respectively. Find the trash% present in the blow room lap.

a. 1.97 %

b. 1.00%

c. 0.09%

d. 2.53%

62. The gear A of 20 teeth meshes with gear B of 10 teeth that is compounded to wheel C of 30 teeth that meshes with gear D of 10 teeth. The velocity ratio between gear D and gear A is

a. 3

b. 5

c. 4

d. 6

63. The centrifugal force (N) acting on a material mass 2g present at the tip of a beater of radius 25 cm rotating at 600 rpm is

a. $0.1\pi^2$

b. $0.2\ \pi^2$

c. 0.005π

d. $0.05\ \pi^2$

64. The trash removal is higher at

a. Blow room

b. Ring frame

c. Roving frame

d. Cone winder

65. A reed has 15 dents/cm, and the warp is drawn in two ends per dent. If the finished fabric is 1.4 m wide compared with 1.47 m wide in the reed, what is the finished fabric sett?

a. 26

b. 28

c. 32

d. 35

66. Among the following systems of drafting, the objective of which is to reduce the friction between adjacent warp ends?

a. Point

b. Sateen

c. Herring-bone

d. Reversed

67. The contraction percentage of 1 x 1 rib structure compared to its machine width is around

a. 30

b. 40

c. 50

d. 60

68. What will be the loop length of the knitted fabric having course length 60 cm and wale length 80 cm and number of loops per course 40?

a. 0.75 cm

b. 1.5 cm

c. 2 cm

d. 3.5 cm

69. What will be the tightness factor of the plain single jersey knitted with 64 tex yarn and 1.5 cm loop length?

a. 96

b. 42

c. 5.3

d. 2.3

70. In Rib Knitting machine, the Knittable yarn count in 'Ne' is calculated by

a. $\frac{gauge}{8.4}$

b. $\frac{(gauge)^2}{8.4}$

c. $\frac{gauge}{9.6}$

d. $\frac{(gauge)^2}{9.6}$

71. In Weft knitting machine, the term 'Robbing back' is

a. Transfer of loop from one needle to another needle

b. Feeding of two yarn in one feeder

c. Pulling of few length of yarn from newly formed loop

d. Pulling of few length of yarn from already formed loop

72. Which of the following Thermal techniques utilizes the mechanical hammering for conversion of vibration energy to heat energy for bonding the fibrous web?

a. Area

b. Through air

c. Belt

d. Ultrasonic

73. Which of the following fibers can be used for manufacturing of absorbent core based nonwoven products?

a. Viscose

b. Linen

c. Jute

d. Hemp

74. In which of the following web laying techniques, high loft structures can be produced?

a. Polymer laid

b. Card laid

c. Water laid

d. Air laid

75. The temperature of the air in melt blown process is set close to _____ of the polymer.

a. Glass transition temperature

b. Melting temperature

c. Crystallisation temperature

d. Cryogenic temperature

76. Which of the following Mechanical finishings is adopted to improve the lusture of bonded fabric?

a. Creping

b. Polishing

c. Raising

d. Emerising

77. A mill spinning 40^s Ne carded yarn with the following fiber properties. Find the Fiber Quality Index?

2.5% S.L = 28 mm

Uniformity ratio = 0.47

Micronaire value = 4.3

Bundle strength (g/tex) = 22.5

Maturity ratio = 0.80

a. 59

b. 55

c. 45

d. 50

78. Calculate the tenacity (g/tex) of cotton sample (at gauge length 1/8 inch) if the breaking load is 6.1 kg and the weight of the bundle is 3.9 mg obtained from the Pressley fiber strength tester?

a. 23.39

b. 25.49

c. 16.39

d. 28.19

79. If 840 mature fibers and 160 immature fibers were found in a test specimen, the percent immaturity would be

a. 16
b. 26
c. 30
d. 32

80. If the weight of a sample of cotton decreases from 107.5 to 100 grams when heated at 105 ˚C for 2 hours. The Moisture Content and Regain is

a. 7.0 and 7.5
b. 8.0 and 8.5
c. 9.0 and 9.5
d. 8.5 and 9.0

81. If 75 km of yarn weigh 2.5 kg, the count in metric system will be

a. 30^S
b. 2.40^S
c. 10^S
d. 50^S

82. The CV % of mass irregularity of yarn generally equals U % multiplied by

a. 1.00
b. 1.25
c. 1.44
d. 1.82

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

a. Periodic faults
b. Non-periodic mass variation
c. Imperfections
d. Variation in the count

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

a. 5.8%
b. 10.0%
c. 12.3%
d. 17.3%

85. Crimp interchange is a phenomena associated with

a. Bursting Strength
b. Abrasion Resistance
c. Tensile Strength
d. Tear Strength

86. For spreading knitted and other stretch fabric the spreading device should include

a. Positioning devices
b. Positive feed system
c. Width Indicators
d. End treatment devices

87. The Air permeability of a fabric increases linearly with increase in twist factor. This is due to

a. The air space in the yarn is reduced
b. The warp and weft cover factor is high
c. The air space in the yarn is high
d. The warp and weft cover factor is constant

88. 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?

a. 3 points
b. 2 points
c. 4 points
d. 1 point

89. Transfer printing is an example for
a. Direct style
b. Resist style
c. Discharge style
d. Rotary style

90. Ionic dyes used in printing is not suitable for
a. wool
b. silk
c. casein
d. polypropylene

91. Freundlich isotherm becomes Nernst isotherm when n is
a. 0.2
b. 0.5
c. 0.8
d. 1.0

92. What is the effect of Mercerization process ?
a. Decreases luster.
b. Decreases dyeability
c. Increases dyeability
d. Increases orientation of polymers

93. The enzyme preferred for desizing is
a. α-Amylase
b. ß-Amylase
c. γ-Amylase
d. Lipase

94. In case of metameric samples which one of the following will be identical?
a. Reflectance curve
b. Spectral Reflectance curve
c. ΔE values
d. Tristimulus values

95. Which of the following dyes are more prone to gas fading?
a. reactive dyes
b. disperse dyes
c. acid dyes
d. vat dyes

96. Benzotriazoles is an example for
a. Antimicrobial agent
b. UV Protective agent
c. Antistatic agent
d. Wetting agent

97. THPC flame retardant is produced by reaction of
a. Phosphine and Formaldehyde
b. Urea and Formaldehyde
c. Sulphur and Formaldehyde
d. Ammonia and Formaldehyde

98. Which of the following Dyes are used for printing of polyester?
a. Disperse Dyes
b. Reactive Dyes
c. Direct Dyes
d. Acid Dyes

99. Which one of the following chemicals is used as reducing agent in printing?
a. Sodium chlorite
b. Sodium hydrosulphite
c. Sodium nitrate
d. Sodium phosphate

100. Which one of the following fibres is mass coloured?
a. Cotton
b. Polyproylene
c. Silk
d. Wool