

16 — LEATHER TECHNOLOGY

(Answer ALL questions)

56. Procollagen is converted to a triple helix before secretion from cell by

1. microtubules
2. microgranules
3. microchannels
4. microenzymes

57. The extension of collagen fibrils inside the tendon is always

1. considerably more than the total extension of the tendon
2. considerably less than the total extension of the tendon
3. equal to the total extension of the tendon
4. considerably more or equal than the total extension of the tendon

58. If type I collagen is mutated it leads to

1. Osteogenesis Imperfecta
2. Ehlers-Danlos Syndrome
3. Marfan Syndrome
4. All of the above

59. Decarboxylation of histidine leads to formation of

1. histamine
2. dihistamine
3. decarboxylated histamine
4. carboxylated histamine

60. Which of these collagens have network like structure?

1. Types IV, VIII, X
2. Types I, II, III
3. Types IX, XII, XIV
4. Types XIII, XVII, XXIII

61. Melting temperature of Type I collagen

1. $\sim 37^\circ \text{C}$
2. $\sim 60^\circ \text{C}$
3. $\sim 92^\circ \text{C}$
4. $\sim 100^\circ \text{C}$

62. The covering power of pigment is

1. directly proportional to the particle size
2. inversely proportional to the particle size
3. depends on the composition of the season
4. none of these

63. Iso electric point of raw collagen is at a pH of

1. ~ 7.0
2. ~ 6.0
3. ~ 5.0
4. ~ 4.0

64. Which is the most powerful complexing ligand for chromium?

1. oxalate
2. acetate
3. formate
4. sulphate

65. The analytical technique used for the estimation of chromium in leather involving titrimetric methods use the principle that

1. Cr (III) liberates iodine from iodide
2. Cr (VI) liberates iodine from iodide
3. Iodine is liberated by thiosulphate
4. None of the above

66. Condensed tannins are based on

1. pro-anthocyanidins
2. glucose
3. diphenic acid
4. galloyl esters

67. Which of the following belongs to hydrolysable tannins?

1. Sumac
2. Quebracho
3. Wattle
4. Gambier

68. Oiling in EI tanning

1. avoids grain crackiness
2. softens the leather
3. prevents photo-oxidation
4. helps penetration of vegetable tannins

69. Which is the principal chromophore in azo-dye?

1. C \equiv N
2. N = N
3. C \equiv C
4. N \equiv N

70. If the radius 'r' of a drum is doubled, the effective volume is increased by a factor of

1. 2
2. 8
3. 4
4. 0.5

71. Tanning process retains

1. epidermis
2. hide substance
3. adipose layer
4. sweat gland

72. Moisture content of raw hide/skin is

1. 65%
2. 50%
3. 30%
4. 15%

73. Slacked lime is

1. CaCO_3
2. Ca(OH)_2
3. CaCl_2
4. CaO

74. Main enzyme responsible for the bating action is

1. protease
2. nuclease
3. esterase
4. mucolytic enzymes

75. The indicator used for checking pickling operation is

1. bromophenol blue
2. methyl red
3. phenolphthalein
4. congo red

76. Semi-aniline finish consists of

1. pigment, dye solution and acrylic binder
2. dye solution and protein binder
3. pigment, dye solution and protein binder
4. dye solution and PU binder

77. Which of the following syntans enhance perspiration resistance to leathers?

1. Phenolics
2. Acrylics
3. Melamine
4. Aldehyde

78. Blushing of NC lacquers is due to

1. Low boiling solvent and high boil diluent
2. High boiling solvent and high boil diluent
3. High boiling solvent and low boil diluent
4. None of these

79. Which lacquer is used for producing w leather?

1. NC lacquer
2. Cellulose acetate butyrate
3. Lacquer emulsion
4. PU lacquer

80. Ratio of water-glycerine mixture in the determination of shrinkage temperature is

1. 1 : 1
2. 2 : 1
3. 3 : 1
4. 4 : 1

81. Cold stability of finish indicates

1. the finish behaviour at sub-zero temperature
2. the glossiness obtained in cold temperature
3. the light fastness obtained in cold temperature
4. the shrinkage temperature of the leather

82. Double layer effect in New Zealand sheep skins in a result of

1. Breed variation
2. Fat pockets
3. Bad flaying
4. Wing method

83. Mange in skin is

1. grain pattern
2. a form of fibre development
3. a parasitic disease
4. a post mortem defect

84. Red heat is caused by

1. Crustaceans
2. Mycobacterium
3. Steepticoris
4. Halophilic bacteria

85. The principle acid of drench liquor is

1. acetic acid
2. lactic acid
3. formic acid
4. butyric acid

86. When using resin syntan prior to retannage, the dyeing intensity

1. decreases
2. increases
3. no change
4. first decreases and then increases

87. Anionic fat liquor bath is exhausted with

1. Sulphuric acid
2. Ammonium hydroxide
3. Borax
4. Formic acid

88. Role of wax emulsion in resin finish is

1. giving more gloss
2. binding the dye and pigment
3. as plate releasing agent
4. binding the pigment

89. Mulling operation involves

1. Spraying fatliqour to lubricate fibres
2. Dipping upper in to hot water
3. Injecting steam to upper by contact or non-contact method
4. All of the above

90. Ideal cutting area for vamp component is

1. Shank
2. Shoulder
3. Butt
4. Belly

91. Principle of lasting operation

1. Conversion of visco-elastic material into plastic material
2. Conversion of visco-elastic material into elastic material
3. Preservation of visco-elastic property
4. None of the above

92. In cemented shoe construction, one should use _____ adhesive for extreme conditions of temperature

1. Single component of PU adhesive
2. Neoprene base adhesive
3. Hot melt adhesive
4. Double component of PU adhesive

93. Size increment in length in English footwear sizing

1. 1/3 inch
2. 2/3 inch
3. 1/2 inch
4. 1/6 inch

94. PVC soles are attached using adhesives made from

1. Polychloroprene
2. Neoprene
3. EVA
4. Polyurethane

95. Creative designing system requires graphics simulation of

1. Vector based
2. Pixel based
3. High resolution
4. None of the above

96. Mixing of effluents from a commercial lime yard and pickle bath liberates poisonous gas

1. NO
2. H₂S
3. NH₃
4. Cl₂

97. Commercial chrome recovery process involves the use of

1. EDTA
2. Oxalic acid
3. MgO
4. Aluminium salts

98. Angle of weave of grain layer is mainly controlled by

1. Elastin
2. Proteoglycan
3. Reticulin
4. Hair follicle

99. Increase in angle of weave

1. Decrease in area
2. Increase in area
3. No change
4. None of the above

100. Which one is inside-out protein?

1. Albumin
2. Collagen
3. Globulin
4. None of the above

101. During soaking of wet-salted which of the following protein is released into the liquor?

1. Elastin
2. Collagen
3. Proteoglycan
4. Globulin

102. Which enzyme breaks down the collagen into different fragments?

1. mammalian collagenase
2. a-Amylase
3. lipase
4. bacterial collagenase

103. What is the thawing time for chilled hide and skins?

1. 18-24 hrs
2. 2-4 hrs
3. 7-8 hrs
4. Above 24 hrs

104. During soaking which layer undergoes faster rehydration
1. Junction of grain and corium
2. Grain layer
3. Corium layer
4. Both (1) and (3)

105. Extension of reliming process leads to
1. Increase in surface area of skin
2. Increase in tensile strength
3. Decrease in surface area
4. Both (1) and (2)

106. Acid swelling leads to
1. Drawn grain
2. Increase in weight
3. Decrease in strength
4. All the above

107. Characteristics of condensed tannins
1. Bloom formation
2. Photo oxidation
3. pH : 3.5
4. All the above

108. Which one is called as pseudo transition metal?
1. Al
2. Co
3. Fe
4. Zn

109. Aldehyde pre-treatment is generally carried out for
1. Upper leather
2. Chamois leather
3. Belting leather
4. Book binding leather

110. The predominant interaction of acid dyes with leather
1. Hydrophobic interaction
2. Electrostatic interaction
3. Covalent bond formation
4. Electrostatic and H-bonding

111. The water resistivity of the leather improved by
1. Addition of more surfactant
2. Formation of chrome soap
3. Addition of silicone based fatliquors
4. Both (2) and (3)

112. Amphoteric fatliquors are
1. Oil emulsified with amphoteric reagent
2. pH is above 5 and emulsified with negatively charge
3. Both (1) and (2)
4. None of the above

113. Fogging test
1. Determination of volatile content by Gravimetric method
2. Test method of DIN 75201 conditioned with 16h at 100°C
3. % reflectance is determined compared with that of the clean plate
4. All the above

114. Automotive leathers are
1. Resistance to migration
2. Low fogging values
3. Rub fastness
4. All of the above

115. Organic pigment
1. Good brilliancy
2. Good covering power
3. Good light fastness
4. Good body