

## 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.  $\sim 7.0$
  2.  $\sim 6.0$
  3.  $\sim 5.0$
  4.  $\sim 4.0$
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=N
  2. N=N
  3. C=C
  4. N=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.  $\text{CaCO}_3$
  2.  $\text{Ca(OH)}_2$
  3.  $\text{CaCl}_2$
  4.  $\text{CaO}$
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 boiling diluent
  2. High boiling solvent and high boiling diluent
  3. High boiling solvent and low boiling 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. Hallophilic 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 fatliquor 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 from
1. Shank
  2. Shoulder
  3. Butt
  4. Belly
91. Principle of lasting operation
1. Conversion of visco-elastic material in to plastic material
  2. Conversion of visco-elastic material in to 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. H<sub>2</sub>S
  3. NH<sub>3</sub>
  4. Cl<sub>2</sub>
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 sports liquor?
1. Elastin
  2. Collagen
  3. Proteoglycan
  4. Globulin
102. Which enzyme breaks down the collagen into different fragments?
1. mammalian collagenase
  2. α-Amylase
  3. lipase
  4. bacterial collagenase
103. What is the thawing time for chilled hams 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