Sl. No. : 10000289

ADTT/17

Register Number | | | | | | | | | |

2017
TEXTILE TECHNOLOGY
(Degree Standard)

Time Allowed : 3 Hours] **[Maximum Marks : 300**

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 10 minutes before commencement of the examination.
2. This Question Booklet contains **200** questions. Prior to attempting to answer the candidates are requested to check whether all the questions are there and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination it will not be replaced.**
3. Answer **all** questions. **All** questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An answer sheet will be supplied to you, separately by the Invigilator to mark the answers.
6. You will also encode your Register Number, Subject Code, Question Booklet Sl. No. etc. with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per commission's notification.
7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select ONLY ONE correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are **four** circles Ⓐ, Ⓑ, Ⓒ and Ⓓ against each question. To answer the questions you are to mark with Ball point pen ONLY ONE circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. *e.g.* If for any item, Ⓑ is the correct answer, you have to mark as follows :

Ⓐ ● Ⓒ Ⓓ

9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. The sheet before the last page of the Question Booklet can be used for Rough Work.
11. Do not tick-mark or mark the answers in the Question Booklet.
12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.

SEAL

1. The thermal conductivity of polyester is ————.

(A) Higher than cotton
(B) Higher than nylon
(C) Lower than silk
(D) Higher than cotton but lower than silk

2. The temperature at which the fibre nature transformation from glass to rubber is called

(A) First order transition temperature
(B) Freezing temperature
(C) Second order transition temperature
(D) Decomposition temperature

3. The co-efficient of expansion of nylon fibre is ———— per degree C.

(A) –3 (B) 1.4 (C) 0.5 (D) 2.5

4. Fibroin is the major polymer of ———— fibre.

(A) Cotton
(B) Wool
(C) Silk
(D) Acrylic

5. Pycnometer is used to measure ———— of the fibre.

(A) Crystallinity
(B) Melting point
(C) Density
(D) Orientation

6. The suitable chemicals which are used for measuring the density of fibre by density gradient coloum are ———— and ————.

(A) HCl, H_2SO_4
(B) Pentachlorethane, Xylol
(C) Xylol, HCl
(D) H_2SO_4, Pentachlorethane

7. The density of acrylic fibre is

(A) 1.17 mg/mm^3
(B) 2.1 g/cm^3
(C) 1.42 mg/ mm^3
(D) 1.52 g/ cm^3

8. The terylene fibre have great birefringence due to

(A) The bond polarization

(B) The zigzag arrangement in main chain

(C) The presence of benzene in main chain

(D) The right angle atomic bonding

9. The birefringence value is zero for ———— fibre.

(A) Wool

(B) Glass

(C) Acrylic

(D) Flax

10. The birefringence value of nylon is

(A) Greater than polyester

(B) Lesser than polyester

(C) Lesser than cotton but greater then polyester

(D) Lesser than viscose rayon

11. The birefringence value of longer cotton fibre is

(A) Higher than shorter cotton fibre

(B) Lower than shorter cotton fibre

(C) Equal with shorter cotton fibre

(D) Equal with wool fibre

12. The lustre of the synthetic fibre ———— while mixing the titanium dioxide in its dope.

(A) increase

(B) decreases

(C) is similar

(D) improves the surface evenness

13. Upon thermal treatment of synthetic fibres amorphous orientation ———— and crystalline regions changes from ———— to ————.

(A) Increases, small to big

(B) Decreases, big to small

(C) Decreases, small to big

(D) Increases, big to small

14. Time dependant elongation of thermoplastic fibres are regarded as

(A) Stress relaxation (B) Elasticity

(C) Extended elongation (D) Creep

15. If a fibre obeyed Hooke's law, the load-elongation curve would be a

(A) Convex curve (B) Concave curve

(C) Straight line (D) Sine wave

16. Which one of the following equation is used to calculate the work factor?

(A) Work factor = $\frac{\text{work of rupture}}{\text{Breaking load} \times \text{Breaking elongation}}$

(B) Work factor = $\frac{\text{Breaking load}}{\text{Breaking elongation}}$

(C) Work factor = $\frac{\text{Breaking elongation}}{\text{Breaking load}}$

(D) Work factor = $\frac{\text{Breaking load} \times \text{Breaking elongation}}{\text{work of rupture}}$

17. For fibres, with respect to creep, the primary creep is

(A) Instantaneous extension (B) Plastic deformation

(C) Instantaneous recovery (D) Recoverable in time

18. Among the following fibres, which one is having higher sheers modulus?

(A) Silk (B) Kapok

(C) Cotton (D) Glass

19. The unit for specific flexural rigidity is

(A) g - wt.cm/tex^2 (B) g - wt.cm^2/tex^2

(C) g – wt/cm^2/tex^2 (D) g . wt/cm/tex

20. The zone of the extruder in which mostly melt is homogenized and has a drag flow is

(A) Feed zone
(B) Compression zone
(C) Metering zone
(D) Solid transport zone

21. The POY polyester yarn is produced in the range of

(A) 500 m/min
(B) 3500 m/min
(C) 5000 m/min
(D) 6000 m/min

22. Among the following given fibres, the crystallinty is developed while spinning at a speed of 3000 m/min under normal moisture containing environment for

(A) PET
(B) Nylon 6
(C) Low pill PET
(D) Cationisied dyeable PET

23. The most widely used method of polymerisation for production of acrylic polymer is

(A) Suspension polymerisation
(B) Ring opening polymerisation
(C) Emulsion polymerisation
(D) Ziegler Natta polymerisation

24. Which one of the following statement is not correct about acrylic fibre?

(A) High jet stretch conditions produce small void structures
(B) At low temperatures in the bath coagulation is retarded
(C) Low coagulation temperature gives fibres of non circular shape and Higher fibre density
(D) By raising solid content in dope the homogeneity of the fibre improver

25. Acrylic fibre is popularly produced through ———— spinning.

(A) Wet
(B) Dry
(C) Melt
(D) Reaction

26. Choose the correct match of the following :

(a)	Polyester (PET)	1.	Caprolactum
(b)	Nylon 6	2.	Dimethyl terephthalate and Ethyleneglycol
(c)	Nylon 6,6	3.	Acrylonitrite and Vinylacetate
(d)	Acetate	4.	Hexamethylene diamine and adipic acid

	(a)	(b)	(c)	(d)
(A)	1	2	4	3
(B)	2	1	4	3
(C)	2	1	3	4
(D)	1	2	3	4

27. Which of the following polymer type can be used for fibre formation

(A) Branchell (B) Linear

(C) Cross-linked (D) Branchell and cross-linked

28. Cleaning efficiency of step cleaned is 60% and monocylinder cleaner is 70%. If 100 kg cotton with 6% trash is fed in these two machines in series (firol in step cleaner and then in monocylinder cleaner), what would be the trash % in the cotton after passing through these two machines.

(A) 0.76 (B) 7.6 (C) 0.38 (D) 3.8

29. If two yarns each of 40 Ne count is twisted together, the resultant count would be

(A) <20 Ne (B) 20 Ne (C) 40 Ne (D) > 40 Ne

30. The increase in traveller weight leads to an increase in

(A) Moisture content (B) Traveller lap

(C) Yarn tension (D) Balbon diameter

31. For woolen and worsted spinning system, the type of ring used is

(A) Single sided ring
(B) Double sided ring
(C) Lubricated ring
(D) Low crown ring

32. Soft covering of top rollers in ring frame leads to

(A) Decrease in quality of yarn
(B) A greater area of contact and better guidance of fibres
(C) Poor guidance of fibres
(D) Increase in the life of top rollers

33. During the bobbin winding in a roving frame, the bobbin rotation rate must be _____ while the increase in the package diameter

(A) Increased after each layer
(B) Decreased after each layer
(C) Maintained as constant
(D) Increased after each 2 layers

34. The range of draft required to convert the sliver into yarn is

(A) 10 – 20
(B) 75 – 85
(C) 300 – 500
(D) Less than 20

35. Usually the wire print density of top comb is

(A) 10 needles per cm
(B) 23 –32 needles per cm
(C) 40 – 60 needles per cm
(D) 60 – 72 needles per cm

36. For producing semi combed yarn, the percentage of noil removed by the combing process is

(A) 4%
(B) 5 – 10%
(C) 10 – 20%
(D) above 20%

37. In which of the following shuttle loom the possibility of oil stain on fabric is more

(A) Loom with over picking mechanism

(B) Loom with under picking mechanism

(C) Loom with positive shedding mechanism

(D) Loom with negative shedding mechanism

38. Fast reed mechanism is mostly preferred for weaving

(A) Light weight fabric

(B) Heavy weight fabric

(C) Synthetic fabric

(D) Silk fabric

39. Which of the following dobby is used in high speed shuttle less weaving machine?

(A) Climax dobby

(B) Cam dobby

(C) Rotary dobby

(D) Keighley dobby

40. In torsion bar mechanism, the twisting length of the torsion bar is around

(A) 520 mm

(B) 620 mm

(C) 720 mm

(D) 820 mm

41. In case of mechanical cleaner, if the 64 tex yarn requires 0.3 mm gap, what will be the gap required for 16 tex yarn?

(A) 0.1 mm

(B) 0.15 mm

(C) 0.2 mm

(D) 0.25 mm

42. The 'draw warping' process is mainly used for

(A) Synthetic fabric

(B) Silk fabric

(C) Denium fabric

(D) Stripe and checked cotton fabric

43. The huck-a-back design is mostly suitable for ———— application.

(A) Carpet

(B) Bath towel

(C) Shirting

(D) Blouse

44. Which of the following woven structure gives maximum amount of support to the adjacent threads?

(A) Twill
(B) Plain
(C) Satin
(D) Crepe

45. Peg plan in point paper representation of weave design is used for

(A) Reed selection
(B) Heald lifting order
(C) Beat-up force
(D) Fell of the cloth

46. Match the following :

(a)	Calico	1.	Weft faced fabric with $\frac{1}{2}$ twill
(b)	Cashmere	2.	Warp rib fabric
(c)	Poplin	3.	Plain woven cotton
(d)	Plush	4.	Pile fabric

	(a)	(b)	(c)	(d)
(A)	2	1	3	4
(B)	3	1	2	4
(C)	1	2	3	4
(D)	2	4	1	3

47. With a standard 7 wheel takeup, 27 T standard wheel is available instead of 36 T. Calculate the teeth of change wheel to be used to give 64 picks per inch.

(A) 48 T
(B) 85 T
(C) 16 T
(D) 62 T

48. To achieve uniform hydraulic loading and BOD, the effluent is kept in holding tank. This process is called

(A) Equalisation
(B) Neutralisation
(C) Acidification
(D) Tertiary treatment

49. Ratio of tenacity of yarn in gf/tex measured in lea form to single yarn form is

(A) < 1
(B) > 1
(C) 0.5
(D) 1

50. If the numerical value of yarn linear density expenses in tex and that in English system is the same. This value to the nearest integer is

(A) 28
(B) 24
(C) 22
(D) 30

51. The property of fibres that HVI does not mean is

(A) Fibre length
(B) Fibre maturity
(C) Short fibre index
(D) Nep content

52. Following technique is used for sample collection from raw cotton for testing

(A) Cut squaring
(B) Zoning
(C) Tong sampling
(D) Core sampling

53. The unit of shear rigidity expressed in KES-F system is

(A) gf/cm
(B) $gf \cdot cm^2/cm$
(C) gf · degree
(D) gf/cm. degree

54. The second scale in the quadrant balance is used to read the count of

(A) Sliver
(B) Roving
(C) Spun yarn
(D) Filament yarn

55. In case of fully matured cotton crops, the difference between rod like fibres and dead fibres in a group of 100 fibres is

(A) 40
(B) 50
(C) 60
(D) 70

56. Which of the following cotton fibre property is determined by using gravimetric method?

(A) Maturity
(B) Fineness
(C) Strength
(D) Twist

57. ———————— sampling method is used to determine the wool substances i.e. grease, vegetables matters and moisture.

(A) Tong
(B) Squaring
(C) Core
(D) Cut

58. A formulator adds 200 ml of water to 1000 ml of silicon emulsion whose solid content is 45%. The % solid content of the diluted silicone emulsion is

(A) 3.75
(B) 37.5
(C) 2.75
(D) 27.5

59. Flip-flop mechanism is associated with ———————— finish.

(A) Antistatic
(B) Crease resistant
(C) Fire retardant
(D) Soil release

60. Mercerization of cotton does not result in

(A) Strength increase

(B) Shade depth increase

(C) Crystal modification

(D) Decrease in moisture regain

61. Which one of the following statements is incorrect about disperse dye?

(A) Disperse dyes are available in micro disperse granules and liquids

(B) Disperse dyes have polar groups

(C) Disperse dyes have NO_2, CN and halogen groups

(D) Disperse dyes are sensitive to pH

62. Which one of the following is not ' True' regarding light fastness of textile substrates?

(A) For direct dyes light fastness is higher on viscose then cotton

(B) Light shade has lower grade of fastness

(C) Azoic dyeing by coupling gives higher fastness

(D) Light fastness does not depend on moisture regain of fibre and relative humidity

63. The ideal pH to get efficient wash down property of Indigo dyed yarn is

(A) 3.5

(B) 5.5

(C) 7.5

(D) 10.5

64. Direct dyes are most preferably dyed at pH of

(A) 3

(B) 4.5

(C) 7.0

(D) 11.0

65. For scouring of wool, the most preferred agent is

(A) Sodium hydroxide
(B) Sodium carbonate
(C) Formic acid
(D) Acetic acid

66. The enzyme that can be used to remove residual peroxide after bleaching is

(A) cellulose
(B) amylase
(C) catalase
(D) pectinase

67. In ———— style of printing, the fabric is first dyed with suitable method followed by printing with print paste containing reducing agent.

(A) discharge
(B) resist
(C) direct
(D) blotch

68. In plain circular knitting machine, when the latch needle reaches the tuck-in-position, the loop in the needle

(A) stays in the hook region
(B) opens the latch and stays on the latch
(C) opens the latch and stays just below the latch
(D) opens the latch and stays away from the latch

69. Under the normal knitting conditions, the stroke length of compound needle is ———— times of latch needle stroke length.

(A) 1/2
(B) 1/3
(C) 1.5
(D) 2

70. 'French Seam' is a subclass of

(A) Edge neatening seam
(B) Flat seam
(C) Bound seam
(D) Super imposed seam

71. Which of the following stitch is preferred for button holing process?

(A) Lock stitch
(B) Chain stitch
(C) Multi thread chain stitch
(D) Covering chain stitch

72. While sewing woven apparels, the seam thickness decreases with

(A) increase in sewing thread tension and decrease in stitch density
(B) decrease in sewing thread tension and increase in stitch density
(C) increase in sewing thread tension and increase in stitch density
(D) decrease in sewing thread tension and decrease in stitch density

73. Which of the following is not the factor of woven fabric seam puckering?

(A) Fabric dimensional in stability
(B) Elasticity of sewing thread
(C) Fabric structure
(D) Size of the needle

74. The over-lock sewing machine may run upto ———————— rpm.

(A) 2000
(B) 5000
(C) 10,000
(D) 15,000

75. 'Whipping' operation is carried out after ———————— operation.

(A) Button sewing
(B) Collar attachment
(C) Button holing
(D) Cuff attachment

76. Ratio of the single yarn strength of same count sewing yarn to the fabric yarn.

(A) > 1 (B) < 1

(C) 1 (D) 0.5

77. The choice of sewing thread for a 67/33 P/C blend is

(A) Coarse cotton yarn (B) Nylon

(C) Polyester (D) Recycled polyester

78. Following ———— fibre and ———— structure combinations can be preferred for vegetable packing.

(A) Atactic polypropylene; close (B) Isotactic polypropylene; close

(C) Atactic polypropylene; open (D) Isotactic polypropylene; open

79. The three essential property requirements for geo textile applications are

(A) Thermal, Electrical and Moisture properties

(B) Mechanical, Filtration and Chemical resistance

(C) Thermal, Mechanical and Filtration properties

(D) Thermal, Chemical resistance and Filtration properties

80. ———— polymer fibre is suitable for making air bag fabrics

(A) Aliphatic polyamide (B) Aromatic polyamide

(C) Aromatic polyester (D) Aliphatic-Aromatic polyester

81. The bonding in incontinence products is mostly done by

(A) needle punching
(B) bulk calendering
(C) chemical bonding
(D) lamination

82. Identify the 'Incorrect' statement about hydro entanglement process.

(A) Fine fibres with high fibre surface area lead to better entanglement
(B) Crimp influences the strength of fabric produced by low to medium pressure hydro entanglement process
(C) Hydrophilic fibre finishes are preferred for PET and PP fibres for hydro entanglement process
(D) Pre-wetting is not carried out in hydro entanglement process

83. Velour fabrics are produced using

(A) star blade needles
(B) fork needles
(C) open barbed needles
(D) foster barbed needles

84. The fibre suitable for bonding of fibres by melting in non-woven is

(A) polyethylene
(B) polyester
(C) modified acrylic
(D) acrylic

85. Air bags are preferably made of

(A) Nylon 6
(B) Cotton
(C) Viscose
(D) Wool

86. Inflators primarily made of sodium azide upon combustion produces

(A) Oxygen gas

(B) Nitrogen gas

(C) Carbon monoxide gas

(D) Carbon dioxide gas

87. Which of the following needles is used in Raschel warp knitting machine?

(A) Latch needles

(B) Compound needles

(C) Bearded needles

(D) Double headed needles

88. While testing tensile property of yarn in a variable material, the breaking load will be

(A) less for short specimen length

(B) less for long specimen length

(C) more for long specimen length

(D) none of the above

89. Which one of the following is a simulation models of the tools of management studies?

(A) Artificial intelligence

(B) Network models

(C) Mathematical programming

(D) Decision trees

90. It is one of the example for direct material cost in a textile industry.
(A) Yarn cost
(B) Lubricant cost
(C) Stationary cost
(D) Catalogue cost

91. Interest on bank deposit is an example for ———————— income that appear on P & L account.
(A) Trading
(B) Non-Trading
(C) Machine
(D) Process

92. It denotes continuous improvement in a textile industry.
(A) Kaizon
(B) Business Process Re-engineering
(C) Management Information System
(D) ISO

93. Normally this type of concept is practiced with unsought goods.
(A) Production
(B) Product
(C) Selling
(D) Process

94. When the electrical field parallel to the fibre axis, the refractive index will be
(A) More
(B) Less
(C) Zero
(D) Greatest

95. Tertiary treatment of textile effluent
(A) RO process
(B) Microbial treatment
(C) Coagulation
(D) Floculation

96. The dye house effluent of cotton dyeing industries has a pH of
(A) 1.5 (B) 2.5 (C) 3.5 (D) 8.5

97. Among the following process, colour can be removed to a maximum extent in
(A) sedimentation
(B) floatation
(C) chemical coagulation
(D) screening

98. TGA is used for the purpose of elucidating any one of the following fibre properties

(A) Degradation temperature (B) Second order transition temperature

(C) First order transition temperature (D) Crystalline temperature

99. First order transition temperature of Nylon 6 fibre is

(A) 40°C (B) 80°C

(C) 230°C (D) 260°C

100. Degree of order in a semi-crystalline fibre is determined by the following equation (where ρ_c, S_a and ρ_f represent densities of 100% crystlline, 100% amorphous and semi crystalline fibre, respectively) in density gradient measurement principle

(A) $(\rho_f - \rho_a)/(\rho_c - \rho_a)$ (B) $(\rho_c - \rho_a)/(\rho_f - \rho_a)$

(C) $(\rho_a - \rho_c)/(\rho_c - \rho_f)$ (D) $(\rho_c - \rho_f)/(\rho_a - \rho_f)$

101. Fibre that is soluble in 5% NaOH at boil but not in 60% HCl is

(A) Cotton (B) Silk

(C) Polyester (D) Wool

102. Average helix angle of Fibrils in bast fibres compared to those in cotton fibre is

(A) Smaller (B) Higher

(C) Same (D) Random

103. Percentage of crystalline and amorphous regions in cotton fibre is

(A) 40% and 60% (B) 60% and 40%

(C) 80% and 20% (D) 20% and 80%

104. Coir fibre is classified as natural cellulosic ———— fibre.

(A) Bast (B) Fruit

(C) Seed (D) Leaf

105. XRD study is used to

(A) Estimate the degree of orientation

(B) Estimate the degree of crystallinity

(C) Estimate the degree of order

(D) Estimate the end groups of the fibre structure

106. The crystalline percentage of unoriented nylon is

(A) 50 – 60 (B) 70 – 80 (C) 40 (D) 100

107. The length of the molecule of regenerated cellulose is

(A) Less than one tenth of the native cellulose

(B) Twice of the native cellulose

(C) One fourth of the native cellulose

(D) Greater than half of the native cellulose

108. In native cellulose fibres, the chains are composed of about ———— glucose rings.

(A) 10^8 (B) 10^4 (C) 10^2 (D) 10^{-4}

109. Which one of the following is a simplest linear polymer?

(A) Cotton (B) Nylon

(C) Wool (D) Polyethylene

110. Nylon is a ———— fibre.

(A) Natural polyamide (B) Synthetic polyamide

(C) Poly olefin (D) Cellulose ester

111. Lustre of silk is because of

(A) Fibroin (B) Sericin

(C) Triangular cross section (D) High crystalinity

112. With increase in moisture regain the electrical resistance of textile fibres

(A) Decreases
(B) Increases
(C) Unaffected
(D) Increases to some limit

113. The rate of flame propagation for textile fabric is

(A) Proportional to weight/unit area
(B) Inversely proportional to weight/unit area
(C) Proportional to weight/unit length
(D) Inversely proportional to weight/unit length

114. The decomposition temperature of silk is

(A) 150°C (B) 180°C (C) 100°F (D) 115°C

115. Among the following fibre, which one is most troubled fibre by static changes during the process?

(A) Cotton
(B) Wool
(C) Nylon
(D) Silk

116. The electrical resistance of fibres ———— on the temperature

(A) increases, decreases
(B) decreases, increases
(C) is constant, increases
(D) decreases, is constant

117. The dielectric constant of wool is lower due to

(A) α and β keratin
(B) crimpy nature
(C) the absorbed water molecules are loosely held and cannot line up in the field
(D) the absorbed water molecules are tightly held and cannot lineup in the field

118. The breaking load of a 200 denier multifilament yarn containing 130 filaments is found to be 800 gram force. Its tensile strength in gram force/denier is

(A) 4 (B) 1.54 (C) 6.15 (D) 5

119. The crystallisation rate is maximum for

(A) PET
(B) Nylon 6
(C) Nylon 6,6
(D) PPT

120. ———— method can be used to measure degree of set

(A) Critical dissolution time
(B) Reverberation
(C) Spectrophotometric
(D) Titration

121. ———— fibre is more susceptible to oxidative and radiation induced degradation even at room temperature

(A) Polypropylene
(B) Polyurethane
(C) Polyester
(D) Nylon 66

122. Surging defect in yarns occurs in false twist texturising due to variation in

(A) Twist
(B) Spinfinish
(C) Primary heater temperature
(D) Secondary heater temperature

123. Drawing of synthetic filament does not lead to an increase in

(A) Crystallinity
(B) Tenacity
(C) Tensile modulus
(D) Elongation at break

124. Crimp cutting of synthetic filaments are done for

(A) Bulking
(B) Staple fibre manufacture
(C) Decrease inter-fibre cohesion
(D) Texturing

125. A filament yarn of 300 denies is being spun at a take up speed of 1200 m/min. Assuming the density of the melt as 1.2 g/cm^3, the throughput speed (cm^3/min) at the spinneret would be

(A) 33 (B) 3.3 (C) 25 (D) 2.5

126. In the context of viscose fibre production, choose the correct statement

(A) Ageing is an oxidative polymerization step

(B) The coagulation bath requires acid for regeneration of cellulose

(C) Ripening is carried out just before xanthation process

(D) Xanthation is necessary for converting cellulose to alkali cellulose

127. Identify the condition which is not 'TRUE' for a material to show rubber like properties

(A) The long chain molecules should possess freely rotating chains

(B) The forces between the molecules must be weak

(C) The molecules must be cross linked at certain points along length

(D) The molecules should be highly anisotropic

128. The glass transition temperature of nylon 6 is

(A) 50°C (B) 70°C (C) 105°C (D) –70°C

129. The as spun polypropylene fibre is ———— crystal form.

(A) α (B) β

(C) γ (D) Smectic

130. Match the following :

(a)	Acrylic	1.	Melt spinning
(b)	Kevla	2.	Wet spinning
(c)	PET	3.	Dry spinning
(d)	Triacetate	4.	Dry-Jet wet spinning

	(a)	(b)	(c)	(d)
(A)	2	4	1	3
(B)	2	3	1	4
(C)	4	1	2	3
(D)	4	1	3	2

131. In cotton combing, oil extraction increases

(A) with a decrease in detaching setting

(B) with an increase in short fibres

(C) if majority of hooks are presented in leading direction

(D) with an increase in pre-combing draft

132. The combing force increases with

(A) Decrease in mass/unit length as lap

(B) Decrease in nips/minute

(C) Decrease in needles/cm on half lap

(D) Decrease in pre-combing draft

133. Front top roller of a drafting system would normally arranged (when looked from the front side as the drafting system) on the front bottom roller with

(A) Front off-set

(B) Backward off-set

(C) With no off-set

(D) Centre to centre alignment

134. The blending technique that gives homogeneous mixing of fibre is

(A) Tuft blending

(B) Slive blending

(C) Roving blending

(D) Lap blending

135. The yarn relationship between yarn diameter and twist is

(A) Yarn diameter α yarn twist

(B) Yarn diameter α $1/\text{yarn twist}$

(C) Yarn diameter α $\sqrt{\text{yarn twist}}$

(D) Yarn diameter α $1/(\text{yarn twist})^2$

136. For fines slivers, what is the relation between the diameter of trumpet bore (d) and linear density in tex?

(A) $d = K/\sqrt{\text{Ktex}}$ where $K = 1.6$

(B) $d = K.\sqrt{\text{Ktex}}$ where $K = 1.6$

(C) $d = K/\text{Ktex}$ where $K = 1.9$

(D) $d = K/\sqrt{\text{Ktex}}$ where $K = 1.9$

137. The fibres in card sliver are relatively

(A) Parallely oriented than roving

(B) Randomly oriented

(C) Parallely oriented than draw frame sliver

(D) Parallely oriented than comber sliver

138. The approximate number of fibres in a card sliver in between ———— and ————.

(A) 100, 500

(B) 5000, 10,000

(C) 20,000, 40,000

(D) 1,00,000, 2,00,000

139. If a ring yarn produced from a roving with a CV value of 4% has an uneveness of CV=13.6%, then the CV added by the ring spinning process is

(A) 5%

(B) 7%

(C) 13%

(D) 18%

140. In drum winding machine, as the package diameter increases

(A) the speed of the drum decreases

(B) the speed of the package decreases

(C) yarn traverse speed increases

(D) yarn traverse speed decreases

141. Dobby shedding mechanism control upto ———— heald frames than tappet shedding mechanism.

(A) 20

(B) 24

(C) 32

(D) 36

142. In case of multi phase, weaving, the maximum weft insertion rate is around

(A) 2000 m/min (B) 3000 m/min

(C) 4000 m/min (D) 5000 m/min

143. Winding angle 'θ' of random winding is given by

(A) $\tan^{-1}\left(\frac{V_e}{V_t}\right)$ (B) $\tan^{-1}\left(\frac{\pi D N_P}{\pi D N_D}\right)$

(C) $\tan^{-1}\left(\frac{V_t}{V_S}\right)$ (D) $\tan^{-1}\left(\frac{\pi D N_D}{\pi D N_P}\right)$

144. Tip bunch in the pirn is given for

(A) Hand loom (B) Shuttle loom

(C) Shuttle less loom (D) Semiauto loom

145. 40 S yarn cone package fixed in the warpe's creel has a yarn mass of 1.5 kg. If the warper's beam are produced for a warp length of 7800 m, calculate number of doffs for which the cone will supply the yarn.

(A) 10 (B) 13 (C) 16 (D) 19

146. Sley eccentricity 'e' is given by ———— where 'r' = radius of crank and 'l' is length of connecting rod.

(A) $e = \frac{l}{r}$ (B) $e = \frac{r}{l}$

(C) $e = \frac{l}{r+l}$ (D) $e = \frac{r}{l+r}$

147. Type of shed formed in single lift single cylinder jacquard loom is

(A) Centre closed shed (B) Bottom closed shed

(C) Semi open shed (D) Open shed

148. Calculate the number of ends per inch in a reed of $\frac{3}{64}$ stock port.

(A) 96 ends
(B) 192 ends
(C) 21 ends
(D) 64 ends

149. Pineapple is a ———— fibre.

(A) Fruit
(B) Leaf
(C) Bast
(D) Seed

150. Find out the equivalent worsted count of yarn, if the yarn is having 20 tex.

(A) 44.3
(B) 46.6
(C) 42.2
(D) 40.3

151. Expand AFIS

(A) Advanced Fibre Information System
(B) Advanced Fibre Information Source
(C) Access Fibre Information Source
(D) Access Fire Information System

152. The mean range of the count test results on a 50^s cotton yarn is 3.4. Four bobbins are tested in each sample. Calculate the percentage mean deviation.

(A) 1.65%
(B) 3.3%
(C) 2.1%
(D) 2.6%

153. The property that Kawabata Evaluation System (KES) does not measure is

(A) Shear rigidity
(B) Bending rigidity
(C) Compressional resilience
(D) Tensile strength

154. The FAST system is used to measure the properties of fabric which affects _____ of the fabric.

(A) Tailoring performance
(B) Washing performance
(C) Dyeing performance
(D) Coating performance

155. Which of the following fabric will break first during hydraulic bursting strength tester?

(A) A fabric with 50% weaker threads and high crimp %
(B) A fabric with 50% stronger threads and higher crimp %
(C) A fabric with 50% weaker threads and lower crimp %
(D) A fabric with 50% stronger threads and lower crimp %

156. The woven fabric air permeability is expressed in

(A) $cm^3/cm^2/sec$
(B) cm^3/sec
(C) cm^3/cm^2
(D) Pascal

157. Which of the following one is considered as the main disadvantage of the lea-strength tester?

(A) Duration of the test
(B) No measure of Elongation
(C) High thread wastages
(D) No accurate test result

158. The Pressley index is the ratio between

(A) $\frac{\text{Breaking load in kgs.}}{\text{Bundle weight in milligrams}}$
(B) $\frac{\text{Breaking load in grams}}{\text{Bundle weight in milligrams}}$
(C) $\frac{\text{Breaking load in pounds}}{\text{Bundle weight in milligrams}}$
(D) $\frac{\text{Breaking load in ounce}}{\text{Bundle weight in mililgrams}}$

159. Printing of Polyester (PET) with disperse dye

(A) Screen Printing
(B) Roller Printing
(C) Transfer Printing
(D) Tie & Dye Printing

160. Printing paste has the property of

(A) Shear thickening
(B) Shear thinning
(C) Newtonian semisolid
(D) Newtonian liquid

161. Batch dyeing machine

(A) J-box
(B) Roberts Roller
(C) Jigger
(D) Padding mangle

162. In the case of reactive dyeing of cotton, the exhaustion is 80% and the reaction efficiency is 80%. Assuming that the initial dye concentration is 2% on the weight of fabric. The amount of un-reacted dye on the fabric expressed as percentage of fabric weight would be

(A) 0.16
(B) 0.32
(C) 1.6
(D) 3.2

163. Match the following dye fibre combinations :

(a)	Cotton	1.	Disperse dye
(b)	Polyester	2.	Acid dye
(c)	Acrylic	3.	Reactive dye
(d)	Silk	4.	Basic dye

	(a)	(b)	(c)	(d)
(A)	3	1	2	4
(B)	3	1	4	2
(C)	1	3	4	2
(D)	2	3	4	1

164. Knitted fabrics are commonly dyed in

(A) Stents
(B) Jigger
(C) Winch
(D) Kier

165. Freundlich isotherm is applicable to

(A) direct dyes on cellulosic fibres
(B) disperse dyes on cellulose acetate
(C) acid dyes on wool
(D) acid dyes on silk

166. Sanforized fabric relates to

(A) anti-shrink finishing
(B) water repellant finishing
(C) flame retardant finishing
(D) softening finish

167. The dry curing of crease proofed cloth for short duration at elevated temperature compared to 'wet curing' for long duration at low temperature results in

(A) High dry crease recovery angle
(B) Low dry crease recovery angle
(C) High wet crease recovery angle
(D) Improvement in tear strength

168. Which one of the following does not come under 'saturation'-removal type of low wet pick up applicator for a finishing agent?

(A) Air jet ejectors
(B) Vacuum extraction
(C) Kiss-roll
(D) Porous bowl technique

169. In case of circular plain knit fabric the number of courses per design repeat indicates

(A) Minimum number of needles to produce the design

(B) Maximum number of yarn packages required to produce the design

(C) Minimum number of feeders required to produce the design

(D) Maximum number of needles in the knit zone

170. The circular weft knitting machine that rotates in clockwise direction demands 'z' twist yarn that 's' twist yarn because 'z' twist yarn

(A) has high work of rupture

(B) could minimize fabric spirality

(C) will produce stable loop

(D) has lower friction value

171. In bearded needle tricot knitting machine, the needle bars have ———————— movement.

(A) To and Fro

(B) Up and down

(C) Circular

(D) Eliptical

172. Which of the following fabric spreading factor is depends on the fabric type and pattern shape?

(A) Alignment of plies

(B) Ply tension

(C) Ply direction

(D) Ply distortion

173. The fine edge bladed straight knife cutting machine is preferred to cut

(A) Densely woven fabrics

(B) Loosely woven fabrics

(C) Coated fabrics

(D) Bonded fabrics

174. Which of the following sewing thread package is mostly used for high speed sewing machine?

(A) spools
(B) cups
(C) cones
(D) vicores

175. The period of merchandising cycle in the merchandising process is around ———— week.

(A) 12
(B) 22
(C) 38
(D) 52

176. During loop formation, when the new loop emerges through the old loop from back to the face side, it is called

(A) open loop
(B) closed loop
(C) face loop
(D) back loop

177. Visual merchandising is one of the activity of

(A) Line planning
(B) Line development
(C) Line presentation
(D) Line loading

178. It refers to the number of stock keeping units within a merchandise category, group or department.

(A) Assortment
(B) Display
(C) Book keeping
(D) Sales

179. For industrial ropes which of the following property should be considered?

(A) work factor
(B) work of rupture
(C) cyclic loading
(D) creep

180. Ratio of tensile strengths of woven and non-woven fabrics of GSM same would be

(A) > 1
(B) < 1
(C) 1
(D) 0.5

181. Which of the following can be classified under wet bonding method?

(A) Thermal
(B) Mechanical
(C) Chemical
(D) Thermal and Chemical

182. For a fibre density of 0.5 – 1.5 (Denies) the preferred needle gauge for usage in needle punching is

(A) 42
(B) 32
(C) 22
(D) 12

183. In the following non-woven production process, very high voltage (kV) is applied for production of fibres in

(A) centrifugal spinning
(B) electro spinning
(C) melt blown
(D) spun lace

184. The formation of three dimensional pile on the surface of a non-woven backing is

(A) flocking
(B) wet lamination
(C) dry lamination
(D) calendering

185. Which one of the following statement is not 'True' regarding filtration?

(A) Increase in porosity of filter media leads to decrease in pressure drop

(B) Filtration takes place at different planes in the fabric

(C) Pressure drop should be minimized for higher filter efficiency

(D) No physical bonding occurs between particles and fibres

186. The frictional resistance of a geo textile can be tested by

(A) shear box

(B) dynamic mechanical analyser

(C) thermo gravimetric analyser

(D) sonic modulus

187. The pore radius of a filter by bubble point cannot be calculated using the parameter

(A) surface tension of fluid

(B) bubble pressure

(C) density of fluid

(D) moisture regain

188. The fatigue resistance of cord fabric materials is high for

(A) Nylon 6

(B) Polyester

(C) Cotton

(D) Viscose Rayon

189. A fibre should be selected for making filter to separate gases containing SO_2 with moisture. The fibre that can be selected is

(A) Nylon 6

(B) Nylon 6, 11

(C) Nylon 6, 12

(D) Polyphenylene sulphide

190. Among the following treatment process 90% of BOD of effluent can be reduced by

(A) aerated lagoons (B) coagulation

(C) reverse osmosis (D) screening

191. ——————— is an prerequisite when the waste is subjected to secondary anaerobic treatment.

(A) Sedimentation (B) Equalisation

(C) Reverse osmosis (D) Secondary equalisation

192. Which one of the following is a coagulation-aid?

(A) Alum (B) Ferric sulphate

(C) Ferrous sulphate (D) Activated silica

193. The ratio of the fabric area covered by the yarn to the total fabric area is called

(A) Area density (B) Tightness factor

(C) Stitch density (D) Gauge

194. In a yarn manufacturing process, the cleaning index of a machine is defined as

(A) $\left(\frac{D_F - D_D}{D_D}\right) \times 100$ (B) $D_F - D_D \times 100$

(C) $(D_F/D_D) \times 100$ (D) $\frac{(D_F - D_D)}{D_F} \times 100$

where D_F = the direct content of the feed material

D_D = the direct content of the delivered material.

195. The minimum number of fibres required for a yarn cross section is

(A) 10 (B) 30

(C) 210 (D) 400

196. Which one of the following equation is used to convert observed time into normal time in time study?

(A) Normal time = observed time $\times \frac{\text{Std. performance level expected}}{\text{Performance level of the worker}}$

(B) Normal time = $\frac{\text{Std. performance level expected}}{\text{Observed time}} \times$ Performance level of the worker

(C) Normal time = observed time $\times \frac{\text{Performance level of the worker}}{\text{Std. performance level expected}}$

(D) Normal time = $\frac{\text{Observed time}}{\text{Performance level of the worker}}$

197. To calculate the cost/kg of yarn, which equation is used to calculate the raw material cost?

(A) raw material cost = $\frac{100\,C \times P}{g}$

(B) raw material cost = $\frac{100\,(C - P)}{g}$

(C) raw material cost = $g/100\,(C - P)$

(D) raw material cost = $\frac{(100 \times C)/P}{g}$

where C = fibre cost/kg

g = yarn realization

P = Price realised for wastes/kg of fibre

198. In a modern mill, what is the units consumed by ring frame for producing 100 kg of 40 Ne yarn?

(A) 3

(B) 12

(C) 260

(D) 33

199. Which one of the following is a variable cost?

(A) Staff salaries

(B) Depreciation

(C) Administration expenses

(D) Direct materials

200. It deals with job simplification in an industry.

(A) Method study

(B) Work sampling

(C) Predetermined time standard

(D) Time study