ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ
PUNJAB TECHNICAL UNIVERSITY JALANDHAR

Max.   Marks: 90   **Time: 90 Mins.**

Entrance Test for Enrollment in Ph.D. Programme

Stream: ………………………………………………..

Discipline   ………Textile Engineering…………………..

Name   ………………………………………………..

Fathers Name   ………………………………………………..

Roll Number   **Date: 15-07-2012**

Signature of Candidate: ………………………………………………..

Signature of Invigilator   ………………………………………………..

1. Tension in yarn during winding from bobbin depends on the unwinding speed is proportional to
  (A) V
  (B) V^2
  (C) V^3
  (D) 1/V

2. During Sizing, the pick up will increase if
  (A) squeeze pressure is increased
  (B) machine speed is increased
  (C) temp of drying cylinder is increased
  (D) None of the above

3. Drawing of 4 ends per dent instead of 2 ends per dent in reed will result in
  (A) increased warp breakage rate
  (B) reduced warp breakage rate
  (C) improved fabric quality
  (D) reduced reed life

4. A design repeating on 10cm along length and 6 cm along width of fabric having 40 ends and 30 picks per cm will require Jacquard Capacity of

  (A) 180
  (B) 240
  (C) 300
  (D) 400

5. The speed of tappet shaft on a loom weaving design on 4 ends and 3 picks will be
  (A) same as that of crankshaft
  (B) half that of crankshaft
  (C) one third that of crankshaft
  (D) d.none of the above

6. If 10 cm of yarn produces 9 cm of fabric, the yarn crimp is
  (A) 11.1%
  (B) 10%
  (C) Data is incomplete
  (D) 9%

7. Sectional warping is considered more practical than beam warping
  (A) For executing big orders
  (B) For producing striped fabrics
  (C) When sizing is considered necessary
  (D) When two fold yarn has to be used in warp and weft

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8. 1 kg of 20 Nm will have a length of
  (A) 16,800 meters
  (B) 33,600 meters
  (C) 20,000 meters
  (D) 16,800 meters

9. A sheeting fabric having 30 tex in warp and 20 tex in weft, and having 40x30 ends and picks per centimeter respectively,. The gsm of the fabric will be
  (A) 90 g/m2
  (B) 170 g/m2
  (C) 180 g/m2
  (D) 250 g/m2

10. In an automatic loom
  (A) Weft-break is repaired automatically
  (B) Warp-break is repaired automatically
  (C) Exhausted weft bobbin is replaced automatically
  (D) Exhausted warp beam is replaced automatically

11. In shuttleless weaving, weft waste is minimum on
  (A) Air-jet loom
  (B) water-jet loom
  (C) Rapier loom
  (D) Gripper (or projectile) loom

12. On Sulzer projectile loom, the number of projectiles depends on
  (A) Weight of projectile
  (B) Width of loom
  (C) r p m of loom
  (D) Picking force

13. Circular looms are preferred over conventional looms
  (A) When weft pattern is complicated
  (B) When the silk yarn is involved
  (C) When hose type of fabrics are required
  (D) Because circular looms give higher efficiency

14. Gauge of the knitting machine
  (A) no. of needles in two inches
  (B) no. of needle per inch
  (C) no of sinkers
  (D) total no. of needles

15. With an increase in the friction between the yarns, the tear strength of a fabric is
  (A) increases
  (B) decreases
  (C) not change
  (D) show no trend

16. Yarn tension during unwinding is proportional
  (A)   √tex
  (B)   tex
  (C)   √Ne
  (D)   Ne

17. In surface driven winder, the winding speed is constant
  (A)   Constant
  (B)   Increases with increase in package diameter
  (C)   Decreases with increase in package diameter
  (D)   None of the above

18. A 2.5 crossing drum means there are
  (A) 2.5 turns in a double traverse
  (B) 5 turns in a double traverse
  (C) 5 turns in a single traverse
  (D) None of the above

19. Singeing of cotton is carried out to
  (A) remove protruding fibres from fabrics surface
  (B) impart luster
  (C) cut long threads from fabric surface
  (D) none of the above

20. Mercerization of cotton is carried by using
  (A) Sodium hydroxide
  (B) Sulphuric acid
  (C) Acetic acid
  (D) Sodium carbonate

21. Dyeing of polyester is carried out by using
  (A) Acid dyes
  (B) direct dyes
  (C) Disperse dyes
  (D) Vat dyes

22. The most productive method for textile printing is
(A) Rotary screen-printing
(B) Automatic Flat-bed screen-printing
(C) Block printing
(D) Discharge printing

23. Sublimation Transfer printing is most suitable for
(A) Wool
(B) Jute
(C) Polyester
(D) cotton

24. Fixation of Disperse Dyes on Polyester is carried out of
(A) atmospheric steaming
(B) pressure steaming
(C) curing at 140oC for 5 minute
(D) room temperature

25. Wash & Wear finishing of cotton is carried out to improve
(A) crease resistance
(B) fabric feel
(C) abrasion resistance
(D) none of the above

26. Soil release finish is more effective on
(A) Polyester
(B) Cotton
(C) Wool
(D) Jute

27. Batch-wise scouring can be carried out in
(A) Winch
(B) Jigger
(C) Kier
(D) J-Box

28. The most important ingredient of a scouring composition is
(A) Wetting agent
(B) Alkali
(C) Emulsifying agent
(D) Sodium silicate

29. An optical brightener is
(A) A synthetic bluing agent
(B) A colourless dye
(C) A fluorescent compound
(D) An optical whitener

30. Limiting oxygen index is determined to test the efficiency of
(A) Wash and wear finishing
(B) Water proofing
(C) Flame retardant finishing
(D) none of the above

31. HT-HP Jet-dyeing machine is commonly used for dyeing of
(A) Wool
(B) Cotton
(C) Polyester
(D) Acrylic

32. Enzyme treatment of cotton is carried out to remove
(A) Size
(B) Colouring matter
(C) nitrogenous substances
(D) Waxes

33. Dyeing of silk is carried out by using
(A) Disperse dyes
(B) Acid dyes
(C) pigment colours
(D) None of the above.

34. Weight reduction finish is more commonly given to
(A) Nylon
(B) Silk
(C) Polyester
(D) Cotton

35. Heat-setting of polyester is carried out on
(A) mercerizing machine
(B) Pin stenter
(C) Open width washing machine
(D) None of the above

36. Rot Proof finish is given to
(A) Cotton
(B) Polyester
(C) Nylon
(D) Acrylic

37. Highest order of tensile strength
    (A) Cotton
    (B) Viscose
    (C) Wool
    (D) Ramie

38. Highest moisture regains at 65% RH and 20°C
    (A) Cotton
    (B) PET
    (C) Nylon 6
    (D) Viscose

39. Highest possibility of static charge generation under standard conditions
    (A) Wool
    (B) Silk
    (C) Polyester
    (D) Cotton

40. Lowest density fibre
    (A) Cotton
    (B) Polypropylene
    (C) Nylon
    (D) Polyester

41. Average molecular orientation can be measured by :
    (A) X-ray diffraction
    (B) Infrared spectra
    (C) Scanning electron microscopy
    (D) Birefringence

42. Density of cotton fibre in g/cc is
    (A) 1.52
    (B) 1.39
    (C) 1.10
    (D) 0.91

43. Melting point of polypropylene in ^{0}c is
    (A) 110
    (B) 150
    (C) 170
    (D) 200

44. Among the following, strength/Weight ratio is highest for
    (A) Steel
    (B) Nylon
    (C) Kevlar
    (D) Polyester

45. Typical mass of a cotton staple fibre in microgram(s) is of the order of

    (A) 0.1
    (B) 3
    (C) 10
    (D) 100

46. Percentage moisture regain of nylon is
    (A)   0.4
    (B)   4
    (C)   6
    (D)   8

47. Alkali resistance is highest in case of
    (A)   Cotton
    (B)   Wool
    (C)   Silk
    (D)   Polyester

48 Metric count (Nm) equivalent of 90 denier yarn is
    (A) 9
    (B) 10
    (C) 90
    (D) 100

49. One Newton force is equivalent to

    (A) 98 gf
    (B) 100 gf
    (C) 102 gf
    (D) 1000 gf

50. The end groups in PET are
    (A) Carboxyl
    (B) Hydroxyl
    (C) Carboxyl and hydroxyl
    (D) Carboxyl and Amino

51. Which of the following is extremely sensitive to photo degradation?
    (A) Polyester
    (B) Nylon
    (C) Polypropylene
    (D) Cotton

52. Viscose Rayon are produced through the process of manufacturing known as
    (A) Solution spinning

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(B) Melt spinning
(C) Gel spinning
(D) Dry-jet spinning

53. Special luster of silk is related to
(A) fine denier of silk
(B) triangular cross section of filaments
(C) high uniformity of filament denier
(D) none of the above

54. Tenacity of cotton fibre changes with increasing moisture regain in the following manner:
(A) increases
(B) decreases
(C) remains constant
(D) increases rapidly

55. The increase in pro-comber draft
(A) reduces the waste at comber
(B) increases the waste at comber
(C) does not change the comber waste
(D) none of the above

56. For synthetic fibre
(A) heavier laps are preferred for finer denier fibre
(B) higher laps are preferred for coarse denier fibre
(C) lighter laps are preferred for finer denier fibre
(D) none of the above

57. Roller and clearer card is used for carding of
(A) cotton
(B) cotton waste
(C) wool fibres
(D) man-made fibres

58. The coarser fibres preferentially migrate
(A) to the surface of the yarn
(B) to the core of the yarn
(C) at random
(D) surface to core and back

59. Balloon control rings are more effective
(A) at the end of the doff
(B) at the middle of the doff
(C) at the beginning of the doff

(D) throughout the doff

60. Bigger rotor diameter
(A) reduces the yarn strength and improves the yarn uniformity
(B) increases the yarn strength and reduces the yarn uniformity
(C) increases the yarn strength and improves the yarn uniformity
(D) none of the above

61. In a continuous filament yarn , at the centre of the yarn
(A) fibre extension = yarn extension
(B) yarn extension > fibre extension
(C) fibre extension > yarn extension
(D) none of the above

62. The most preferred bleater for processing man-made fibres is
(A) shirley opener
(B) kirschner beater
(C) creighton
(D) three bladed beater

63. Twist multiplier(TM) is a better indicator of twist characteristic of yarn than T.P.I because
(A) TM is directly proportional to the tangent of twist angle
(B) TM describe level of twist in yarn irrespective of linear density
(C) TM is related to both the above characters
(D) None of the above

64. Murata Air-jet spinning
(A) first nozzles twist the fibre bundle and second nozzle wraps the fibre
(B) first nozzles wrap the fibre bundle and second nozzle twist the fibre
(C) both the nozzles twist the fibre bundle in opposite direction
(D) both the nozzles twist the fibre bundle in same direction

65. In a open packing of fibres in yarn, the maximum number of fibres in 3rd layer is:
(A) 6
(B) 12.
(C) 16

(D) 18

66. As a guide line, the optimum level of comber waste should be
    (A) equal to short fibre %
    (B) twice the short fibre %
    (C) 1.3 times the short fibre %
    (D) 0.5 times the short fibre %

67. The twist in the roving made from finer fibres should be comparatively
    (A) same
    (B) higher
    (C) lower
    (D) zero

68. The hooks which are preferentially removed in roller drafting are
    (A) trailing
    (B) leading
    (C) 'U' shaped
    (D) double

69. The traveller weight employed for polyester and its blends, compared to that employed for viscose rayon is
    (A) less
    (B) 1-2 numbers heavier
    (C) the same
    (D) 4-5 numbers heavier

70. . In a ideal yarn geometry, tension on fibre:
    (A) specific stress × area/specific volume
    (B) specific stress ÷ area/specific volume
    (C) specific stress× 1/linear density
    (D) none of the above

71. If the index of blend irregularity (IBI) is less; it means
    (A) blending is better
    (B) blending is poor
    (C) a moderate blending
    (D) none of the above

72. For two ply yarn, the value of the

Schwarz's constant (K) is

    (A) 0.50
    (B) 0.54
    (C) 0.60

(D) 0.75

73. Unripe cotton fibres lead to
    (A) varying dyeability
    (B) smooth processing in card
    (C) increase in spinning limit
    (D) none of the above

74. Long fibre length influences
    (A) handle of the product
    (B) proportion of short fibres
    (C) processing in card
    (D) none of the above

75. Fibre fineness influences primarily:
    (A) drape of the fabric product
    (B) percentage loss in yarn strength
    (C) varying dyeability
    (D) staple diagram

76. The conversion factor : dtex equal to
    (A) micronaire value ×0.394
    (B) micronaire value ×0.324
    (C) micronaire value ×0.314
    (D) none of the above

77. The weight-biased staple diagram corresponding to
    (A) the distribution of fibres in the yarn cross-section
    (B) proportion of short fibres
    (C) a good assessment of the running behaviour in the process
    (D) none of the above

78. The breaking strength of cotton fibre
    (A) 35-60 cN/tex
    (B) 15-40 cN/tex
    (C) 12-18 cN/tex
    (D) none of the above

79. Range of maturity ratio (M) of cotton is
    (A) 0 to 1
    (B) 0 to 100
    (C) 0.2 to 1.2
    (D) 0.5 to 1.5

80. During length measurement on fibrograph, 2.5% span length was found to be 25 mm. It means
    (A) 2.5% of fibres clamped are 25 mm is length

(B) 2.5% of fibres clamped are longer than 25 mm

(C) 2.5% of fibres clamped are 25 mm or longer

(D) 2.5% of fibres clamped are less than 25 mm

81. The RKm of a yarn is equal to
(A) g/tex
(B) g/den
(C) breaking length in Km
(D) CSP

82. Uster classimat is used for classifying
(A) yarn faults
(B) yarn imperfections
(C) yarn irregularity
(D) yarn strength cv%

83. If mass variation in a yarn is distributed normally, which of the following relations hold good

(A) CV % > 1.25 u%

(B) CV% = 1.25 u%

(C) CV% < 1.25 u%

(D) CV% = u%

84. In a spinning mill, fibre bundle strength is preferred over single fibre strength, because
(A) bundle strength test is easy and quick
(B) It gives less variation
(C) It has better correlation with yarn strength
(D) It gives benefit of all above three

85. Number of 2 denier fibres in 10s cotton count yarn will be nearly
(A) 66
(B) 100

(C) 200
(D) 266

86. If N is the number of fibres in a yarn cross section, the limiting irregularity **is** proportional to
(A) $1/N$
(B) $1/N^2$
(C) $1/\sqrt{N}$
(D) N

87. Imperfections are sum total of
(A) thick places and thin place
(B) all classimat faults
(C) thick places and neps
(D) thick places, thin places and neps

88. The correct relationship between specific surface (s) and diameter (d) of a fibre can be described by
(A) s = 1/d
(B) s = 4/d
(C) s = perimeter of cross-section / area of cross-section
(D) none of the above

89. Yarn strength for longer gauge length
(A) is lower
(B) is higher
(C) depends on tensile tester
(D) remains the same

90. In a twist-untwist method to determine yarn twist using 10 inch sample, 400 rotations of a jaw are required to complete the test. Twist per inch in the yarn is
(A) 10
(B) 20
(C) 40.
(D) 80