Textile Engineering Question Paper for Ph.D. Entrance Test
MRSPTU, Bathinda

Q1. Which one of the following is a leaf fibre?

    (A) Coir
    (B) Sisal
    (C) Jute
    (D) Hemp

Q2. The pair of fibres most prone to accumulation of static charge is

    (A) Cotton and Polyester
    (B) Silk and Polyester
    (C) Polyester and Polypropylene
    (D) Silk and Polypropylene

Q3. Acrylic fibre is made from at least 85% by weight of

    (A) Acrylic acid
    (B) Acrylonitrile
    (C) Acrylamide
    (D) Methyl methacrylate

Q4. The gum present in the raw mulberry silk fibre is

    (A) Sericin
    (B) Fibroin
    (C) Keratin
    (D) Casein

Q.5 Which of the following amino acids is responsible for relatively higher wet strength in wool fiber?

    (A) Threonine
    (B) Serine
    (C) Cystine
    (D) Tryosine

Q.6 Which one of the following stereo structures of polypropylene is (are) used for commercial fibre manufacture?

    (A) Atactic
    (B) Syndiotactic
    (C) Isotactic & Syndiotactic
    (D) Isotactic

Q.7 Acrylic fibre has high glass transition temperature ($Tg \approx 100^\circ$ C) primarily due to

    (A) Presence of polar side groups
    (B) Presence of bulky side groups
    (C) High crystallinity
    (D) Main chain stiffness

Q.8 In which of the following polymerization methods the rate of reaction is very high and leads to uncontrolled polymerization?

  (A) Solution polymerization
  (B) Suspension polymerization
  (C) Bulk polymerization
  (D) Emulsion polymerization

Q.9 Which of the following textile strands is the finest?

  (A) 20s Ne
  (B) 20 denier
  (C) 20 tex
  (D) 20s Nm

Q.10 The term 'half-lap' is associated with

  (A) Card
  (B) Drawframe
  (C) Comber
  (D) Roving frame

Q11. In a carding machine, in which of the following zones the fibre alignment is negatively affected to the maximum extent?

  (A) Cylinder to flats carding region
  (B) Licker-in to cylinder transfer region
  (C) Cylinder to doffer transfer region
  (D) Doffer to calendar roller region

Q12. Which of the following is the correct sequence of events which happen in a roller drafting zone?

(A) Fibre elongation-fibre decrimping- fibre sliding
(B) Fibre sliding-fibre elongation-fibre decrimping
(C) Fibre decrimping- fibre sliding- fibre elongation
(D) Fibre decrimping- fibre elongation- fibre sliding

Q13. In which region of ring spinning, Coriolis force acts?
(A) Lappet to ring cop
(B) Delivery pair of drafting rollers to lappet
(C) Back pair of drafting rollers to delivery pair of drafting rollers
(D) Feed bobbin to back pair of drafting rollers

Q14. In a modern card, the highest angular velocity (rpm) is found in

  (A) Taker-in
  (B) Feed roller
  (C) Cylinder
  (D) Doffer

Q.15 Six carded slivers of 4 ktex each are drawn to produce a sliver of 5 ktex. The draft required is

     (A) 4.4
     (B) 5.2
     (C) 6.0
     (D) 6.8

Q.16 The purpose of having grooves or notches in modern flyer tops in speed frames is to

     (A) Increase real twist in roving
     (B) Insert false twist in roving
     (C) Reduce neps in roving
     (D) Increase fineness of roving

Q17. Which of the following shedding mechanisms provides control of individual warp thread during weaving?

     (A) Crank
     (B) Tappet
     (C) Dobby
     (D) Jacquard

Q18. The filling yarn density at selvage is doubled in case of

     (A) Fringe selvage
     (B) Tucked-in selvage
     (C) Shuttle selvage
     (D) Leno selvage

Q19. The time required to wind 10 kg of 40 tex yarn when the winding machine works at 1000 m/min with an efficiency of 90% is approximately,

     (A) 127.5 min
     (B) 206.6 min
     (C) 277.8 min
     (D) 327.5 min

Q20. The movements of guide bars in warp knitting are

     (A) Swinging and shaking
     (B) Shaking and shogging
     (C) Shogging and twisting
     (D) Swinging and shogging

Q.21 With time, wind per double traverse in a drum-driven winder

     (A) Increases
     (B) Decreases
     (C) Remains constant
     (D) First increases and then decreases

Q.22 In a loom, seven-wheel take-up motion is
   (A) Negative and intermittent
   (B) Negative and continuous
   (C) Positive and intermittent
   (D) Positive and continuous

Q23 Which of the following shuttleless weaving systems can offer maximum fabric width?
(A) Air jet
(B) Water jet
(C) Projectile
(D) Rapier

Q24. Amongst the following tests, the one with a least chance of the change in direction during tear test is
   (A) Single rip tear test
   (B) Wing rip tear test
   (C) Tongue tear test
   (D) Double rip tear test

Q25 The instrument, amongst the following, CANNOT be used for measurement of bundle strength of cotton is/are
   (A) AFIS
   (B) HVI
   (C) Pressley fiber strength tester
   (D) Stelometer

Q.26 Standard error of the means (S.E.) of Yarn A is 6 and Standard error of the means (S.E.) of Yarn B is 7 then Standard error of the difference between the means (S.E. $_{diff}$) will be
   (A) 3.21
   (B) 5.21
   (C) 7.21
   (D) 9.21

Q.27 If N is the number of sample, the Standard Error (SE) of StandardDeviation (SD) in t-test is expressed as
   (A) Standard deviation of the sample /$\sqrt{(2N)}$
   (B) Standard deviation of the sample /$(\sqrt{N})$
   (C) Standard deviation of the sample $\times \sqrt{(N)}$
   (D) Standard deviation of the sample $\times\sqrt{(2N)}$

Q.28 If the 50 % span length of a cotton fibre is 20 mm and the uniformity ratio is 46 %, The 2.5 % span length in mm is approximately
   (A) 30.5
   (B) 43.5
   (C) 52.5
   (D) 62.5

Q.29 The correct statement(s) amongst the following with reference to Shirley stiffness tester is/are

(A) Overhanging length is half of the bending length
(B) Overhanging length is equal to the bending length
(C) Overhanging length is twice the bending length
(D) Overhanging length is three times the bending length

Q.30 Two yarn samples have standard deviations of strength $\sigma 1$ and $\sigma 2$. If $\sigma 1 < \sigma 2$, the 'F' ratio would be

(A) $\sigma 1 / \sigma 2$
(B) $\sigma 2 / \sigma 1$
(C) $\sigma 1^2 / \sigma 2^2$
(D) $\sigma 2^2 / \sigma 1^2$

Q.31 The Classimat fault amongst the following having highest probability of causing an end breakage during further processing is

(A) A1
(B) F
(C) H1
(D) I2

Q.32 The correct relationship amongst the following is

(A) Cotton Count, Ne = 453.8 × (Length in yard/Mass in g)
(B) Cotton Count, Ne = 540 × (Length in yard/Mass in g)
(C) Cotton Count, Ne = 0.54 × (Length in yard/Mass in g)
(D) Cotton Count, Ne = 590.5 × (Length in yard/Mass in g)

Q.33 Shear characteristics of fabric are measured by

(A) KES-FB1
(B) KES-FB2
(C) KES-FB3
(D) KES-FB4

Q.34 The discharging agent used in discharge printing of cotton with reactive dyes is

(A) Citric acid
(B) Sodium dithionite
(C) Thio-urea dioxide
(D) Sodium formaldehyde sulphoxylate

Q.35 Application of a fluorochemical based finish on a textile fabric imparts

P. Water repellency
Q. Oil repellency
R. Soil repellency
S. Insect repellency

(A) P, Q & R only
(B) Q, R & S only

(C) P, R & S only
(D) P, Q & S only

Q.36 Shrinkage of cotton fabric during wetting is caused by
(A) Extension of fibre
(B) Crimping of fibre
(C) Swelling of fibre
(D) Compression of fibre

Q.37 Sodium persulphate is used in
(A) Bleaching
(B) Scouring
(C) Mercerization
(D) Desizing

Q.38 A dye with dischargeability rating of 1 (one) WILL NOT be suitable for
(A) Resist printing
(B) Direct printing
(C) Discharge printing
(D) Melt transfer printing

Q.39 The enzyme used for biopolishing of cotton is
(A) Cellulase
(B) Pectinase
(C) Amylase
(D) Lipase

Q.40 During bleaching of cotton with hydrogen peroxide, addition of sodium silicate
(A) Controls the rate of decomposition of perhydroxyl ions ($HO_2 -$)
(B) Reduces the viscosity of bath
(C) Reduces the surface tension of bath
(D) Enhances swelling of cotton