

Total No. of Printed Pages : 17

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ARE ASKED TO DO SO)

A

SET-X

PHD-EE-2023-24  
Textile Engineering

10009

Sr. No. ....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

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PHD-EE-2023-24/(Textile Engg.)(SET-X)/(A)

SEAL

1. Which is *not* a regenerated fibre :
  - (1) Viscose
  - (2) Tencel
  - (3) Nylon
  - (4) Bamboo
  
2. Spandex fibre is known for its :
  - (1) Strength
  - (2) Extensibility
  - (3) Moisture regain
  - (4) Modulus
  
3. Most suitable test for parachute fabric is :
  - (1) Tensile strip strength
  - (2) Bursting strength
  - (3) Tearing strength
  - (4) Tensile grab strength
  
4. Pressure bar in draw frame is used to :
  - (1) Apply pressure to the front top roller
  - (2) Apply pressure to the middle top roller
  - (3) Control the long fibre movement.
  - (4) Control the short fibre movement.
  
5. A loom is weaving the design of 1 up 2 down twill. If the loom is running at 240 rpm, the speed of tappet shaft will be :
  - (1) 60 rpm
  - (2) 120 rpm
  - (3) 80 rpm
  - (4) 240 rpm
  
6. In comparison with the ring spun yam, air-jet spun yarn is :
  - (1) Weaker, stiffer and harder
  - (2) Stronger, softer and smoother
  - (3) Weaker, bulkier and harsher
  - (4) Stronger, hairier and evener

7. Sublimation transfer printing is most suitable for :
- (1) Cotton (2) Polyester  
(3) Silk (4) Acrylic
8. Which of the following fibers has excellent elastic recovery ?
- (1) Cotton (2) Polyester  
(3) Nylon (4) Viscose
9. Which of the following fibre properties is not governed by its amorphous content ?
- (1) Dye uptake (2) Moisture content  
(3) Extensibility (4) Friction
10. If the front top roller of a ring frame having diameter of 1 inch becomes eccentric, at what wave length of spectrogram do you expect a peak ?
- (1) 8 cm (2) 2.54 cm  
(3) 4 cm (4) 1.27 cm
11. 8 slivers each with a CVm of 2.8% are fed to a draw frame. If the draw frame adds a CVm of 1 %, what will be the CVm of output sliver ?
- (1) 3.8% (2) 1.1%  
(3) 1.41% (4) 1.8%
12. For same count, rotor yarn TM is :
- (1) 2 times greater than that of ring yarn.  
(2) 10-15 % greater than ring yarn.  
(3) Same as ring yarn.  
(4) 10-15% lower than ring yarn.

13. The term stoving is associated with :
- (1) Desizing
  - (2) Burning away of protruding fibers
  - (3) Burning of vegetable impurities
  - (4) Bleaching with sulphur dioxide
14. In sizing, polyvinyl alcohol is used as :
- (1) Antiseptic
  - (2) Anti-mildew agent
  - (3) Humectant
  - (4) Adhesive
15. Of the following machines which will occupy the last position in blowroom line :
- (1) Bale plucker
  - (2) ERM cleaner
  - (3) Monocylinder opener
  - (4) Step cleaner
16. Which of the following is used in the coagulating bath, for the spinning of viscose rayon ?
- (1) Sulphuric acid
  - (2) Acetic anhydride
  - (3) Hydrochloric acid
  - (4) Nitric acid
17. Which of the following holds good for card web ?
- (1) Majority of the fibers are having trailing hooks
  - (2) Majority of the fibers are having Leading hooks
  - (3) Majority of the fibers are having double hooks
  - (4) Majority of the fibers are having no hooks
18. In which of the following process, the yarn is characterised by wrapper fibers ?
- (1) TFO
  - (2) Ring spinning
  - (3) DREF spinning
  - (4) Rotor spinning

19. A machine that does not improve the mass evenness is :
- (1) Draw frame (2) Ring doubler  
(3) Speed frame (4) Ribbon lap
20. The principle which *cannot* be used to measure hairiness of yarn is :
- (1) Light scattering (2) Image analysis  
(3) Photoelectric (4) Capacitance
21. Which property of fiber *cannot* be measured by HVI ?
- (1) Colour (reflectance = Rd, yellowness = +b)  
(2) SFI - Short Fibre Index  
(3) NRE% (Neps Removal Efficiency)  
(4) Trash (% area, trash count) and trash grade
22. The U% of single yarn is 17.3%. The expected U% of a 3-ply yarn produced from this yarn will be :
- (1) 5.76% (2) 9.9 %  
(3) 29.96% (4) 17.6%
23. If the numerical value of yarn linear density expressed in Tex and that in English system is the same, this value to the nearest integer is :
- (1) 30 (2) 28  
(3) 24 (4) 22
24. The property that Kawabata Evaluation System (KES) does *not* measure is :
- (1) Shear rigidity (2) Bending rigidity  
(3) Compressional resilience (4) Tensile strength

25. Drop wires is used for the :
- (1) Warp stop (2) Weft stop  
(3) Warp protection (4) None of the above
26. What will be the type of Jacquard if the cylinder turns in two pick ?
- (1) Single lift and single cylinder (2) Double lift and single cylinder  
(3) Double lift and double cylinder (4) None of the above
27. Cleaning efficiency of modern blowroom is :
- (1) 50-60 (2) 20-30  
(3) 30-40 (4) 90-100
28. What is Rd &+B value of cotton fibre ?
- (1) indicate maturity (2) colour of fibre  
(3) strength of fibre (4) thickness of fibre
29. Fabric abrasion resistance **cannot** be assessed by the loss in :
- (1) Strength (2) Weight  
(3) Air permeability (4) Thickness
30. S3 value is measured for :
- (1) IPI (2) Twist  
(3) Strength (4) Hairiness
31. Combing process improves :
- (1) 2.5% Span length (2) 50% Span length  
(3) Both (4) None of these

32. Compact spinning increases yarn :
- |                      |               |
|----------------------|---------------|
| (1) Tensile strength | (2) Hairiness |
| (3) Uster%           | (4) Diameter  |
33. What would be the efficiency of blowroom if cleaning efficiency of two individual m/cs are 50% and 40% respectively ?
- |        |        |
|--------|--------|
| (1) 45 | (2) 50 |
| (3) 70 | (4) 90 |
34. Which is *not* a pneumatic compact spinning system ?
- |                     |           |
|---------------------|-----------|
| (1) COM4            | (2) ELITE |
| (3) ZINSER COMPACT3 | (4) ROCOS |
35. Tinting at blowroom is done :
- |                                 |                                     |
|---------------------------------|-------------------------------------|
| (1) For improving fibre comfort | (2) For segregation                 |
| (3) For Fancy effect            | (4) To improve inter-fibre cohesion |
36. In which spinning system, twisting element imparts multiple twist in single rotation ?
- |                    |                       |
|--------------------|-----------------------|
| (1) Rotor Spinning | (2) Ring Spinning     |
| (3) Wrap Spinning  | (4) Friction Spinning |
37. During disperse dye for polyester, dispersing agent is used :
- |  |
|--|
| (1) To make insoluble dye water soluble        |
| (2) To increase the exhaustion of disperse dye |
| (3) To ensure level dyeing                     |
| (4) To prevent precipitation of disperse dye   |

38. As compared to the yarn fault A1, the fault D4 is :
- (1) Thinner and longer
  - (2) Thinner and shorter
  - (3) Thicker and longer
  - (4) Thicker and shorter
39. Bobbin leading mechanism is preferred over flyer lead mechanism in roving frame because :
- (1) It helps to reduce the power requirements of the machine
  - (2) When roving breaks, it will trail and not unwind
  - (3) Both of these
  - (4) None of these
40. The cone hardness during winding can be changed by changing the :
- (1) Traverse
  - (2) Wind angle
  - (3) Wind per double traverse
  - (4) Conicity of the package
41. During drum winding, package density is independent of :
- (1) Yarn tension
  - (2) Yarn strength
  - (3) Applied package/drum pressure
  - (4) Angle of wind
42. A 2.5 crossing drum means there are :
- (1) 2.5 turns in a double traverse
  - (2) 5 turns in a double traverse
  - (3) 5 turns in a single traverse
  - (4) None of the above
43. The sizing is done on warp yarns to :
- (1) Increase yarn uniformity
  - (2) Increase yarn elongation
  - (3) Increase yarn modulus
  - (4) Provide protective coating against abrasion

44. Size pick up is not influenced by :
- (1) Squeeze pressure
  - (2) Size paste concentration
  - (3) Machine speed
  - (4) Drying cylinder temperature
45. During shedding operations, negative cams actually control :
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48. In case of weft break, center weft fork motion would stop the loom :
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49. Restarting a loom after the overnight stoppage will have :
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50. Water jet stream emerging from nozzle has a much lower velocity than that of air jet stream, because :
- (1) Water cannot be compressed to the same extent that air can be
  - (2) The efficiency of water jet nozzle in conversion of potential energy to kinetic energy is lower than that of air jet nozzle
  - (3) Aerodynamic resistance to water jet stream is higher than that against air jet stream
  - (4) Kinematic viscosity of water is much higher than that of air
51. A plain single jersey fabric :
- (1) Exhibits curling from technical back to technical front along course line
  - (2) Exhibits curling from technical back to technical front along wale line
  - (3) Exhibits curling from technical front to technical back along wale line
  - (4) Exhibits curling from technical back to technical front along course line and curling from technical front to technical back along wale line
52. Yarn property that affects the knitted fabric feel and appearance most is :
- |                        |                                  |
|------------------------|----------------------------------|
| (1) Yarn extensibility | (2) Yarn regularity              |
| (3) Yarn strength      | (4) Yarn coefficient of friction |
53. Which of the following types of bonding is followed by needle punching ?
- |                        |                       |
|------------------------|-----------------------|
| (1) Mechanical bonding | (2) Thermal bonding   |
| (3) Chemical bonding   | (4) None of the above |
54. Which of the following barbed needles provide the most aggressive punching ?
- |                  |                       |
|------------------|-----------------------|
| (1) Regular barb | (2) Medium barb       |
| (3) Close barb   | (4) High density barb |

55. Which of the following process sequences is *correct* for spunbond process ?
- (1) preparation, extrusion, quenching, lay-down, bonding, drawing, winding.
  - (2) preparation, extrusion, quenching, bonding, lay-down, drawing, winding.
  - (3) preparation, extrusion, quenching, drawing, lay-down, bonding, winding
  - (4) preparation, quenching, extrusion, drawing, lay-down, bonding, winding.
56. Bio-polishing is a process to remove the ..... of a fabric through the action of enzyme.
- (1) Colour
  - (2) Crease
  - (3) Protruding fibers
  - (4) None
57. The main constituent of cotton fiber is :
- (1) Cellulose
  - (2) Fibroin
  - (3) Amino acids
  - (4) Lignin
58. Which printing is a resist style printing.
- (1) Batik
  - (2) Screen
  - (3) Roller
  - (4) Stencil
59. The function of urea in the printing paste of direct dye is .....
- (1) Solvent
  - (2) Anti-septic
  - (3) Thickening agent
  - (4) Tinting agent
60. Procion yellow is which type of dye ?
- (1) Azoic
  - (2) Basic
  - (3) Direct
  - (4) Reactive

61. Which is an universal bleaching agent ?
- (1) Bleaching powder (2) Hydrogen peroxide  
(3) Copper sulphate (4) Hydrogen chloride
62. Indigo belongs to which class of dyes ?
- (1) Sulphur (2) Basic  
(3) Vat (4) Reactive
63. The class of dyes which are formed from two components usually referred to as naphthols and bases :
- (1) Dispersed dyes (2) Sulphur dyes  
(3) Azoic dyes (4) Reactive dyes
64. The function of common salt in the dye bath of direct dyes on cotton is :
- (1) As an exhausting agent (2) As a retarding agent  
(3) As a solvent (4) As a softening agent
65. The function of doctor blade in roller printing is to :
- (1) Give pressure to the roller  
(2) Scrap off excess colour paste from the roller  
(3) Give pressure to the cloth  
(4) Steaming the roller
66. For the application of basic dyes on cotton which process is essential :
- (1) Mordanting (2) Acetylating  
(3) Coupling (4) Vatting

67. Which is a pre-treatment process for printing of cotton ?
- (1) Scouring (2) Sanforizing  
(3) Fixing (4) Calendaring
68. Kier boiling is done on which material ?
- (1) Cotton (2) Rayon  
(3) Nylon (4) Arylic
69. Acid dyes are mainly applied on :
- (1) Cotton (2) Linen  
(3) Wool (4) Linen
70. Commercial sodium hypochlorite solution generally contain ..... % of available chlorine.
- (1) 5-7 (2) 2-4  
(3) 20-24 (4) 15-18
71. A 5% shade means :
- (1) 5g dye dissolved 100 ml water (2) 5g dye in 5g material  
(3) 5g dye in 100 g material (4) 5 g dye in 1000 g material
72. The botanical name of cotton plant is :
- (1) Oriza setiva (2) Maymsopudica  
(3) Asephetoda (4) Gossypium
73. The bleaching of cotton is done to remove :
- (1) Oils and waxes (2) Natural colouring matter  
(3) Cellulose (4) Lignin

74. Degumming is done on :
- (1) Cotton (2) Silk  
(3) Linen (4) Jute
75. 'Knowles' balance is used to determine :
- (1) Strength of yarn (2) Length of fibre  
(3) Count of yarn (4) Drape of fabric
76. The main constituent of wool fiber is :
- (1) Keratin (2) Cellulose  
(3) Glucose (4) Lignin
77. The pH of peroxide bleaching is :
- (1) 13-15 (2) 3-5  
(3) 6-7 (4) 8-10
78. Anti-shrink finish is given by :
- (1) Embossing (2) Winch  
(3) Sanforizing (4) Drapping
79. 20 kg of cloth has to be dyed with 2% shade the amount of dye stuff to be taken is :
- (1) 400 g (2) 40 g  
(3) 4 kg (4) 2 kg
80. A natural polyamide fiber is :
- (1) Cotton (2) Jute  
(3) Hemp (4) Wool

81. Shrink resistant wool is prepared by :
- (1) Carbonisation (2) Vulcanisation  
(3) Acetylation (4) Chlorination
82. Type of fluting employed for apron roller is :
- (1) Helical (2) Parallel  
(3) Knurled (4) Opposite helical
83. Which property of sized yarn may lacks as compared with its parent yarn ?
- (1) Tensile Strength (2) Bending Rigidity  
(3) Breaking Elongation (4) Abrasion resistance
84. The property of wool that helps it in carbonizing is :
- (1) Resistance to alkali (2) Resistance to acids  
(3) Resistance high temperature (4) Resistance to cold weather
85. What is tentative speed if ring diameter is 38 mm & spindle speed is 15000 rpm ?
- (1) 32 meter/min (2) 30 meter/sec  
(3) 31 meter/min (4) 33 meter/sec
86. Monomer used in the preparation of nylon 6 :
- (1) Adipic acid (2) Caprolactum  
(3) Hexamethylene diamine (4) Terephthalic acid
87. Term scrooping is associated with :
- (1) Shearing of wool (2) Dyeing with sulphur dyes  
(3) Treating wool with sulphuric acid (4) Treating silk with acetic acid

88. The speed of traveller is :
- (1) Equal to the speed of the spindle
  - (2) Always more than the speed of the spindle
  - (3) Always less than the speed of the spindle
  - (4) Seldom less than the speed of the spindle
89. In bobbin leading :
- (1) Speed of bobbin increases with the progress of build
  - (2) Speed of bobbin reduces with the progress of build
  - (3) Speed of flyer reduces with the progress of build
  - (4) Speed of flyer increases with progress of build
90. Which one of these clothings is best suited in fire prone areas ?
- (1) Wool
  - (2) Cotton
  - (3) Silk
  - (4) Linen
91. Which of the following is the right concentration of sodium hydroxide (W/V) in cold mercerizing ?
- (1) 3-7%
  - (2) 7-9%
  - (3) 18-22%
  - (4) 30-34%
92. Which of the following minimise channeling on top roller ?
- (1) Lappet hook
  - (2) ABC ring
  - (3) Traversing roving guide
  - (4) Helically fluted roller
93. When each succeeding coil of yarn is placed exactly upon the previously laid coil in a package, the defect is called :
- (1) Ballooning
  - (2) Stitching
  - (3) Doubling
  - (4) Ribboning

94. Number of 2 denier fibres in 10s cotton count yarn will be nearly :
- (1) 66 (2) 100  
(3) 200 (4) 266
95. The yarn strength expressed as RKM is equivalent of :
- (1) Grams per denier (2) Grams per Tex  
(3) C S P (4) Breaking load in grams
96. Uniformity ratio is the ratio of :
- (1) 50% span length and 2.5% span length  
(2) 2.5% span length and 50% span length  
(3) Mean length and upper half mean length  
(4) Upper half mean length and mean length
97. In a tensile test, if the strain rate is increased, the apparent tensile strength of a ring spun yarn will :
- (1) increases (2) decreases  
(3) not change (4) show no trend
98. Bursting strength is normally carried out for :
- (1) Woven fabrics (2) Non-woven fabrics  
(3) Knitted fabrics (4) Braided fabrics
99. The 2.5% span length of 25 mm means that 2.5% of the clamped fibres are :
- (1) shorter than 25 mm (2) 25 mm or longer  
(3) equal to or shorter than 25 mm (4) 25 mm in length
100. Yarn strength for shorter gauge length is comparatively :
- (1) Lower (2) Higher  
(3) Same (4) Sometimes Lower, sometimes higher

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17. The pH of peroxide bleaching is :
- (1) 13-15 (2) 3-5  
(3) 6-7 (4) 8-10
18. Anti-shrink finish is given by :
- (1) Embossing (2) Winch  
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19. 20 kg of cloth has to be dyed with 2% shade the amount of dye stuff to be taken is :
- (1) 400 g (2) 40 g  
(3) 4 kg (4) 2 kg

20. A natural polyamide fiber is :
- (1) Cotton (2) Jute  
(3) Hemp (4) Wool
21. Which of the following is the right concentration of sodium hydroxide (W/V) in cold mercerizing ?
- (1) 3-7% (2) 7-9%  
(3) 18-22% (4) 30-34%
22. Which of the following minimise channeling on top roller ?
- (1) Lappet hook (2) ABC ring  
(3) Traversing roving guide (4) Helically fluted roller
23. When each succeeding coil of yarn is placed exactly upon the previously laid coil in a package, the defect is called :
- (1) Ballooning (2) Stitching  
(3) Doubling (4) Ribboning
24. Number of 2 denier fibres in 10s cotton count yarn will be nearly :
- (1) 66 (2) 100  
(3) 200 (4) 266
25. The yarn strength expressed as RKM is equivalent of :
- (1) Grams per denier (2) Grams per Tex  
(3) C S P (4) Breaking load in grams
26. Uniformity ratio is the ratio of :
- (1) 50% span length and 2.5% span length  
(2) 2.5% span length and 50% span length  
(3) Mean length and upper half mean length  
(4) Upper half mean length and mean length

27. In a tensile test, if the strain rate is increased, the apparent tensile strength of a ring spun yarn will :
- (1) increases (2) decreases  
(3) not change (4) show no trend
28. Bursting strength is normally carried out for :
- (1) Woven fabrics (2) Non-woven fabrics  
(3) Knitted fabrics (4) Braided fabrics
29. The 2.5% span length of 25 mm means that 2.5% of the clamped fibres are :
- (1) shorter than 25 mm (2) 25 mm or longer  
(3) equal to or shorter than 25 mm (4) 25 mm in length
30. Yarn strength for shorter gauge length is comparatively :
- (1) Lower (2) Higher  
(3) Same (4) Sometimes Lower, sometimes higher
31. Which is **not** a regenerated fibre :
- (1) Viscose (2) Tencel  
(3) Nylon (4) Bamboo
32. Spandex fibre is known for its :
- (1) Strength (2) Extensibility  
(3) Moisture regain (4) Modulus
33. Most suitable test for parachute fabric is :
- (1) Tensile strip strength  
(2) Bursting strength  
(3) Tearing strength  
(4) Tensile grab strength

34. Pressure bar in draw frame is used to :
- (1) Apply pressure to the front top roller
  - (2) Apply pressure to the middle top roller
  - (3) Control the long fibre movement.
  - (4) Control the short fibre movement.
35. A loom is weaving the design of 1 up 2 down twill. If the loom is running at 240 rpm, the speed of tappet shaft will be :
- (1) 60 rpm
  - (2) 120 rpm
  - (3) 80 rpm
  - (4) 240 rpm
36. In comparison with the ring spun yarn, air-jet spun yarn is :
- (1) Weaker, stiffer and harder
  - (2) Stronger, softer and smoother
  - (3) Weaker, bulkier and harsher
  - (4) Stronger, hairier and evenner
37. Sublimation transfer printing is most suitable for :
- (1) Cotton
  - (2) Polyester
  - (3) Silk
  - (4) Acrylic
38. Which of the following fibers has excellent elastic recovery ?
- (1) Cotton
  - (2) Polyester
  - (3) Nylon
  - (4) Viscose
39. Which of the following fibre properties is not governed by its amorphous content ?
- (1) Dye uptake
  - (2) Moisture content
  - (3) Extensibility
  - (4) Friction

40. If the front top roller of a ring frame having diameter of 1 inch becomes eccentric, at what wave length of spectrogram do you expect a peak ?
- (1) 8 cm (2) 2.54 cm  
(3) 4 cm (4) 1.27 cm
41. A plain single jersey fabric :
- (1) Exhibits curling from technical back to technical front along course line  
(2) Exhibits curling from technical back to technical front along wale line  
(3) Exhibits curling from technical front to technical back along wale line  
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46. Bio-polishing is a process to remove the ..... of a fabric through the action of enzyme.
- (1) Colour (2) Crease  
(3) Protruding fibers (4) None
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49. The function of urea in the printing paste of direct dye is .....
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(3) Thickening agent (4) Tinting agent
50. Procion yellow is which type of dye ?
- (1) Azoic (2) Basic  
(3) Direct (4) Reactive
51. Which is an universal bleaching agent ?
- (1) Bleaching powder (2) Hydrogen peroxide  
(3) Copper sulphate (4) Hydrogen chloride
52. Indigo belongs to which class of dyes ?
- (1) Sulphur (2) Basic  
(3) Vat (4) Reactive

53. The class of dyes which are formed from two components usually referred to as naphthols and bases :
- (1) Dispersed dyes (2) Sulphur dyes  
(3) Azoic dyes (4) Reactive dyes
54. The function of common salt in the dye bath of direct dyes on cotton is :
- (1) As an exhausting agent (2) As a retarding agent  
(3) As a solvent (4) As a softening agent
55. The function of doctor blade in roller printing is to :
- (1) Give pressure to the roller  
(2) Scrap off excess colour paste from the roller  
(3) Give pressure to the cloth  
(4) Steaming the roller
56. For the application of basic dyes on cotton which process is essential :
- (1) Mordanting (2) Acetylating  
(3) Coupling (4) Vatting
57. Which is a pre-treatment process for printing of cotton ?
- (1) Scouring (2) Sanforizing  
(3) Fixing (4) Calendaring
58. Kier boiling is done on which material ?
- (1) Cotton (2) Rayon  
(3) Nylon (4) Arylic

59. Acid dyes are mainly applied on :
- (1) Cotton (2) Linen  
(3) Wool (4) Linen
60. Commercial sodium hypochlorite solution generally contain ..... % of available chlorine.
- (1) 5-7 (2) 2-4  
(3) 20-24 (4) 15-18
61. Which property of fiber **cannot** be measured by HVI ?
- (1) Colour (reflectance = Rd, yellowness = +b)  
(2) SFI - Short Fibre Index  
(3) NRE% (Neps Removal Efficiency)  
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62. The U% of single yarn is 17.3%. The expected U% of a 3-ply yarn produced from this yarn will be :
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(3) Strength (4) Hairiness
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(3) 1.41% (4) 1.8%

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- (1) 2 times greater than that of ring yarn.
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- (1) Speed of bobbin increases with the progress of build  
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- (1) Wool (2) Cotton  
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91. Combing process improves :
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  - (2) 50% Span length
  - (3) Both
  - (4) None of these
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- (1) 45
  - (2) 50
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  - (4) 90
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- (1) COM4
  - (2) ELITE
  - (3) ZINSER COMPACT3
  - (4) ROCOS
95. Tinting at blowroom is done :
- (1) For improving fibre comfort
  - (2) For segregation
  - (3) For Fancy effect
  - (4) To improve inter-fibre cohesion
96. In which spinning system, twisting element imparts multiple twist in single rotation ?
- (1) Rotor Spinning
  - (2) Ring Spinning
  - (3) Wrap Spinning
  - (4) Friction Spinning

97. During disperse dye for polyester, dispersing agent is used :
- (1) To make insoluble dye water soluble
  - (2) To increase the exhaustion of disperse dye
  - (3) To ensure level dyeing
  - (4) To prevent precipitation of disperse dye
98. As compared to the yarn fault A1, the fault D4 is :
- (1) Thinner and longer
  - (2) Thinner and shorter
  - (3) Thicker and longer
  - (4) Thicker and shorter
99. Bobbin leading mechanism is preferred over flyer lead mechanism in roving frame because :
- (1) It helps to reduce the power requirements of the machine
  - (2) When roving breaks, it will trail and not unwind
  - (3) Both of these
  - (4) None of these
100. The cone hardness during winding can be changed by changing the :
- (1) Traverse
  - (2) Wind angle
  - (3) Wind per double traverse
  - (4) Conicity of the package

Total No. of Printed Pages : 17

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ARE ASKED TO DO SO)

C

SET-X

PHD-EE-2023-24  
Textile Engineering

10007

Sr. No. ....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

\_\_\_\_\_  
(Signature of the Invigilator)

**CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE  
STARTING THE QUESTION PAPER.**

1. **All questions are compulsory.**
2. The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
6. **There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
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8. **Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.**

PHD-EE-2023-24/(Textile Engg.)(SET-X)/(C)

SEAL

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- (1) Oriza setiva (2) Maymsopudica  
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55. Tinting at blowroom is done :
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(3) For Fancy effect (4) To improve inter-fibre cohesion
56. In which spinning system, twisting element imparts multiple twist in single rotation ?
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(3) Wrap Spinning (4) Friction Spinning

57. During disperse dye for polyester, dispersing agent is used :

- (1) To make insoluble dye water soluble
- (2) To increase the exhaustion of disperse dye
- (3) To ensure level dyeing
- (4) To prevent precipitation of disperse dye

58. As compared to the yarn fault A1, the fault D4 is :

- (1) Thinner and longer
- (2) Thinner and shorter
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59. Bobbin leading mechanism is preferred over flyer lead mechanism in roving frame because :

- (1) It helps to reduce the power requirements of the machine
- (2) When roving breaks, it will trail and not unwind
- (3) Both of these
- (4) None of these

60. The cone hardness during winding can be changed by changing the :

- (1) Traverse
- (2) Wind angle
- (3) Wind per double traverse
- (4) Conicity of the package

61. Which is *not* a regenerated fibre :

- (1) Viscose
- (2) Tencel
- (3) Nylon
- (4) Bamboo

62. Spandex fibre is known for its :

- (1) Strength
- (2) Extensibility
- (3) Moisture regain
- (4) Modulus

63. Most suitable test for parachute fabric is :
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65. A loom is weaving the design of 1 up 2 down twill. If the loom is running at 240 rpm, the speed of tappet shaft will be :
- (1) 60 rpm
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  - (4) 240 rpm
66. In comparison with the ring spun yarn, air-jet spun yarn is :
- (1) Weaker, stiffer and harder
  - (2) Stronger, softer and smoother
  - (3) Weaker, bulkier and harsher
  - (4) Stronger, hairier and evenner
67. Sublimation transfer printing is most suitable for :
- (1) Cotton
  - (2) Polyester
  - (3) Silk
  - (4) Acrylic
68. Which of the following fibers has excellent elastic recovery ?
- (1) Cotton
  - (2) Polyester
  - (3) Nylon
  - (4) Viscose

69. Which of the following fibre properties is not governed by its amorphous content ?
- (1) Dye uptake (2) Moisture content  
(3) Extensibility (4) Friction
70. If the front top roller of a ring frame having diameter of 1 inch becomes eccentric, at what wave length of spectrogram do you expect a peak ?
- (1) 8 cm (2) 2.54 cm  
(3) 4 cm (4) 1.27 cm
71. During drum winding, package density is independent of :
- (1) Yarn tension (2) Yarn strength  
(3) Applied package/drum pressure (4) Angle of wind
72. A 2.5 crossing drum means there are :
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84. Number of 2 denier fibres in 10s cotton count yarn will be nearly :
- (1) 66 (2) 100  
(3) 200 (4) 266
85. The yarn strength expressed as RKM is equivalent of :
- (1) Grams per denier (2) Grams per Tex  
(3) C S P (4) Breaking load in grams
86. Uniformity ratio is the ratio of :
- (1) 50% span length and 2.5% span length  
(2) 2.5% span length and 50% span length  
(3) Mean length and upper half mean length  
(4) Upper half mean length and mean length
87. In a tensile test, if the strain rate is increased, the apparent tensile strength of a ring spun yarn will :
- (1) increases (2) decreases  
(3) not change (4) show no trend

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- (1) Woven fabrics
  - (2) Non-woven fabrics
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89. The 2.5% span length of 25 mm means that 2.5% of the clamped fibres are :
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- (1) Bleaching powder
  - (2) Hydrogen peroxide
  - (3) Copper sulphate
  - (4) Hydrogen chloride
92. Indigo belongs to which class of dyes ?
- (1) Sulphur
  - (2) Basic
  - (3) Vat
  - (4) Reactive
93. The class of dyes which are formed from two components usually referred to as naphthols and bases :
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94. The function of common salt in the dye bath of direct dyes on cotton is :
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  - (2) 2-4
  - (3) 20-24
  - (4) 15-18

Total No. of Printed Pages : 17

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D

SET-X

PHD-EE-2023-24  
Textile Engineering

10004

Sr. No. ....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

\_\_\_\_\_  
(Signature of the Invigilator)

**CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.**

1. **All questions are compulsory.**
2. The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University Website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the question booklet/answer key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
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11. Combing process improves :
- (1) 2.5% Span length
  - (2) 50% Span length
  - (3) Both
  - (4) None of these
12. Compact spinning increases yarn :
- (1) Tensile strength
  - (2) Hairiness
  - (3) Uster%
  - (4) Diameter
13. What would be the efficiency of blowroom if cleaning efficiency of two individual m/cs are 50% and 40% respectively ?
- (1) 45
  - (2) 50
  - (3) 70
  - (4) 90
14. Which is *not* a pneumatic compact spinning system ?
- (1) COM4
  - (2) ELITE
  - (3) ZINSER COMPACT3
  - (4) ROCOS

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- (1) Traverse
  - (2) Wind angle
  - (3) Wind per double traverse
  - (4) Conicity of the package

21. A 5% shade means :

- (1) 5g dye dissolved 100 ml water (2) 5g dye in 5g material  
(3) 5g dye in 100 g material (4) 5 g dye in 1000 g material

22. The botanical name of cotton plant is :

- (1) Oriza setiva (2) Maymsopudica  
(3) Asephetoda (4) Gossypium

23. The bleaching of cotton is done to remove :

- (1) Oils and waxes (2) Natural colouring matter  
(3) Cellulose (4) Lignin

24. Degumming is done on :

- (1) Cotton (2) Silk  
(3) Linen (4) Jute

25. 'Knowles' balance is used to determine :

- (1) Strength of yarn (2) Length of fibre  
(3) Count of yarn (4) Drape of fabric

26. The main constituent of wool fiber is :

- (1) Keratin (2) Cellulose  
(3) Glucose (4) Lignin

27. The pH of peroxide bleaching is :

- (1) 13-15 (2) 3-5  
(3) 6-7 (4) 8-10

28. Anti-shrink finish is given by :
- (1) Embossing (2) Winch  
(3) Sanforizing (4) Drapping
29. 20 kg of cloth has to be dyed with 2% shade the amount of dye stuff to be taken is :
- (1) 400 g (2) 40 g  
(3) 4 kg (4) 2 kg
30. A natural polyamide fiber is :
- (1) Cotton (2) Jute  
(3) Hemp (4) Wool
31. Which property of fiber *cannot* be measured by HVI ?
- (1) Colour (reflectance = Rd, yellowness = +b)  
(2) SFI - Short Fibre Index  
(3) NRE% (Neps Removal Efficiency)  
(4) Trash (% area, trash count) and trash grade
32. The U% of single yarn is 17.3%. The expected U% of a 3-ply yarn produced from this yarn will be :
- (1) 5.76% (2) 9.9 %  
(3) 29.96% (4) 17.6%
33. If the numerical value of yarn linear density expressed in Tex and that in English system is the same, this value to the nearest integer is :
- (1) 30 (2) 28  
(3) 24 (4) 22

34. The property that Kawabata Evaluation System (KES) does *not* measure is :
- (1) Shear rigidity (2) Bending rigidity  
(3) Compressional resilience (4) Tensile strength
35. Drop wires is used for the :
- (1) Warp stop (2) Weft stop  
(3) Warp protection (4) None of the above
36. What will be the type of Jacquard if the cylinder turns in two pick ?
- (1) Single lift and single cylinder (2) Double lift and single cylinder  
(3) Double lift and double cylinder (4) None of the above
37. Cleaning efficiency of modern blowroom is :
- (1) 50-60 (2) 20-30  
(3) 30-40 (4) 90-100
38. What is Rd &+B value of cotton fibre ?
- (1) indicate maturity (2) colour of fibre  
(3) strength of fibre (4) thickness of fibre
39. Fabric abrasion resistance *cannot* be assessed by the loss in :
- (1) Strength (2) Weight  
(3) Air permeability (4) Thickness
40. S3 value is measured for :
- (1) IPI (2) Twist  
(3) Strength (4) Hairiness

41. Which is an universal bleaching agent ?
- (1) Bleaching powder (2) Hydrogen peroxide  
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50. Commercial sodium hypochlorite solution generally contain ..... % of available chlorine.
- (1) 5-7 (2) 2-4  
(3) 20-24 (4) 15-18
51. Shrink resistant wool is prepared by :
- (1) Carbonisation (2) Vulcanisation  
(3) Acetylation (4) Chlorination
52. Type of fluting employed for apron roller is :
- (1) Helical (2) Parallel  
(3) Knurled (4) Opposite helical
53. Which property of sized yarn may lacks as compared with its parent yarn ?
- (1) Tensile Strength (2) Bending Rigidity  
(3) Breaking Elongation (4) Abrasion resistance

54. The property of wool that helps it in carbonizing is :
- (1) Resistance to alkali (2) Resistance to acids  
(3) Resistance high temperature (4) Resistance to cold weather
55. What is tentative speed if ring diameter is 38 mm & spindle speed is 15000 rpm ?
- (1) 32 meter/min (2) 30 meter/sec  
(3) 31 meter/min (4) 33 meter/sec
56. Monomer used in the preparation of nylon 6 :
- (1) Adipic acid (2) Caprolactum  
(3) Hexamethylene diamine (4) Terephthalic acid
57. Term scrooping is associated with :
- (1) Shearing of wool (2) Dyeing with sulphur dyes  
(3) Treating wool with sulphuric acid (4) Treating silk with acetic acid
58. The speed of traveller is :
- (1) Equal to the speed of the spindle  
(2) Always more than the speed of the spindle  
(3) Always less than the speed of the spindle  
(4) Seldom less than the speed of the spindle
59. In bobbin leading :
- (1) Speed of bobbin increases with the progress of build  
(2) Speed of bobbin reduces with the progress of build  
(3) Speed of flyer reduces with the progress of build  
(4) Speed of flyer increases with progress of build

60. Which one of these clothings is best suited in fire prone areas ?
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71. A plain single jersey fabric :

- (1) Exhibits curling from technical back to technical front along course line
- (2) Exhibits curling from technical back to technical front along wale line
- (3) Exhibits curling from technical front to technical back along wale line
- (4) Exhibits curling from technical back to technical front along course line and curling from technical front to technical back along wale line

72. Yarn property that affects the knitted fabric feel and appearance most is :

- (1) Yarn extensibility
- (2) Yarn regularity
- (3) Yarn strength
- (4) Yarn coefficient of friction

73. Which of the following types of bonding is followed by needle punching ?

- (1) Mechanical bonding
- (2) Thermal bonding
- (3) Chemical bonding
- (4) None of the above

74. Which of the following barbed needles provide the most aggressive punching ?

- (1) Regular barb
- (2) Medium barb
- (3) Close barb
- (4) High density barb

75. Which of the following process sequences is *correct* for spunbond process ?

- (1) preparation, extrusion, quenching, lay-down, bonding, drawing, winding.
- (2) preparation, extrusion, quenching, bonding, lay-down, drawing, winding.
- (3) preparation, extrusion, quenching, drawing, lay-down, bonding, winding
- (4) preparation, quenching, extrusion, drawing, lay-down, bonding, winding.

76. Bio-polishing is a process to remove the ..... of a fabric through the action of enzyme.
- (1) Colour (2) Crease  
(3) Protruding fibers (4) None
77. The main constituent of cotton fiber is :
- (1) Cellulose (2) Fibroin  
(3) Amino acids (4) Lignin
78. Which printing is a resist style printing.
- (1) Batik (2) Screen  
(3) Roller (4) Stencil
79. The function of urea in the printing paste of direct dye is .....
- (1) Solvent (2) Anti-septic  
(3) Thickening agent (4) Tinting agent
80. Procion yellow is which type of dye ?
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  - (2) Stronger, softer and smoother
  - (3) Weaker, bulkier and harsher
  - (4) Stronger, hairier and evenner
87. Sublimation transfer printing is most suitable for :
- (1) Cotton
  - (2) Polyester
  - (3) Silk
  - (4) Acrylic
88. Which of the following fibers has excellent elastic recovery ?
- (1) Cotton
  - (2) Polyester
  - (3) Nylon
  - (4) Viscose

89. Which of the following fibre properties is not governed by its amorphous content ?
- (1) Dye uptake
  - (2) Moisture content
  - (3) Extensibility
  - (4) Friction
90. If the front top roller of a ring frame having diameter of 1 inch becomes eccentric, at what wave length of spectrogram do you expect a peak ?
- (1) 8 cm
  - (2) 2.54 cm
  - (3) 4 cm
  - (4) 1.27 cm
91. 8 slivers each with a CVm of 2.8% are fed to a draw frame. If the draw frame adds a CVm of 1 %, what will be the CVm of output sliver ?
- (1) 3.8%
  - (2) 1.1%
  - (3) 1.41%
  - (4) 1.8%
92. For same count, rotor yarn TM is :
- (1) 2 times greater than that of ring yarn.
  - (2) 10-15 % greater than ring yarn.
  - (3) Same as ring yarn.
  - (4) 10-15% lower than ring yarn.
93. The term stoving is associated with :
- (1) Desizing
  - (2) Burning away of protruding fibers
  - (3) Burning of vegetable impurities
  - (4) Bleaching with sulphur dioxide
94. In sizing, polyvinyl alcohol is used as :
- (1) Antiseptic
  - (2) Anti-mildew agent
  - (3) Humectant
  - (4) Adhesive

95. Of the following machines which will occupy the last position in blowroom line :
- (1) Bale plucker (2) ERM cleaner  
(3) Monocylinder opener (4) Step cleaner
96. Which of the following is used in the coagulating bath, for the spinning of viscose rayon ?
- (1) Sulphuric acid (2) Acetic anhydride  
(3) Hydrochloric acid (4) Nitric acid
97. Which of the following holds good for card web ?
- (1) Majority of the fibers are having trailing hooks  
(2) Majority of the fibers are having Leading hooks  
(3) Majority of the fibers are having double hooks  
(4) Majority of the fibers are having no hooks
98. In which of the following process, the yarn is characterised by wrapper fibers ?
- (1) TFO (2) Ring spinning  
(3) DREF spinning (4) Rotor spinning
99. A machine that does not improve the mass evenness is :
- (1) Draw frame (2) Ring doubler  
(3) Speed frame (4) Ribbon lap
100. The principle which *cannot* be used to measure hairiness of yarn is :
- (1) Light scattering (2) Image analysis  
(3) Photoelectric (4) Capacitance

Answer keys of PHD-EE-2023-24 (TEXTILE) entrance exam dated 22.03.2024

Q. NO.	A	B	C	D
1	3	2	3	3
2	2	2	2	3
3	2	4	3	4
4	4	4	4	4
5	3	3	1	2
6	1	3	2	1
7	2	2	1	1
8	3	3	2	3
9	4	2	3	2
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27	1	1	4	4
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30	4	2	1	4
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44	4	4	4	1
45	3	3	2	2
46	3	3	1	1
47	2	1	1	1
48	3	1	4	1
49	2	1	3	3
50	4	4	4	4

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Answer keys of PHD-EE-2023-24 (TEXTILE) entrance exam dated 22.03.2024

Q. NO.	A	B	C	D
51	2	2	2	4
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94	4	4	1	4
95	2	2	2	2
96	1	4	1	1
97	1	4	1	1
98	3	3	1	4
99	2	3	3	3
100	2	2	4	4

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