

PGCET-2022

Seat No. _____

SUB: TEXTILE TECHNOLOGY

Time: 1 Hour 30 minutes

Instructions:

1. Ensure that all pages are printed.
2. Use Black ball pen only
3. Change in option is not allowed
4. There is no negative marking
5. Use of non-programmable scientific calculator is allowed

1.	The courses must be connected to each other in _____ fabrics.			
	A	Knitted	B	Woven
	C	Triaxial	D	Multi-layer
2.	The roller setting of any drafting system should be just _____ than the fibre length.			
	A	Greater	B	Less
	C	Equal	D	None
3.	_____ fibre is classified as protein fibre.			
	A	cotton	B	polyester
	C	jute	D	wool
4.	In natural fibres, initially strength _____ with increase in humidity.			
	A	Increases	B	Decreases
	C	No change	D	None
5.	The let-off motion provided on weaving machine maintains _____.			
	A	Weft density	B	Warp & weft densities
	C	Cloth densities	D	Tension
6.	The coils on the edges of the package tend to slip inwards during the process of winding and creating a deformed package if the coil angle is _____.			
	A	Too small	B	Too large
	C	Medium	D	None
7.	The moisture regain of nylon fibre is _____ %.			
	A	4	B	6

	C	8	D	10
8.	Light fastness of fabrics is assessed by using _____.			
	A	Rubbing tests	B	Wet tests
	C	White scales	D	Grey scales
9.	Finer fibres produce a _____ lustrous effect for the same mass of fibres.			
	A	more	B	less
	C	average	D	none
10.	Polyester fibres are produced by _____.			
	A	Dry spinning	B	Short staple spinning
	C	Melt spinning	D	Wet spinning
11.	_____ type of weft feelers are preferred for synthetic materials.			
	A	Side-sweep	B	Depth
	C	Photo electric	D	Two prong
12.	Density of viscose fibres is _____ gms/cc.			
	A	1.44	B	1.34
	C	1.64	D	1.54
13.	In man-made fibres, generation of static charges _____ with increase in humidity.			
	A	Increases	B	Decreases
	C	No change	D	None
14.	The back zone draft of Ring Spinning machine should be in the range of _____.			
	A	1.2 to 2.0	B	0.1 to 1.0
	C	2.1 to 2.4	D	2.5 to 3.9
15.	The relative humidity % of weaving department is generally kept above _____ %.			
	A	40	B	50
	C	60	D	70

16.	_____ weaves have extensive floats of warp ends on the fabric surface.			
	A	Satin	B	Sateen
	C	Twill	D	Mockleno
17.	The initial modulus of acrylic fibre is _____ than polyester fibre.			
	A	higher	B	lower
	C	equal	D	none
18.	One of the general properties of staple yarns is _____.			
	A	Excellent handle	B	Excellent uniformity
	C	High stretchability	D	Purely functional
19.	Plaiting is a derivative of			
	A	Rib knitted structure	B	Single Jersey structure
	C	Purl knitted structure	D	Interlock knitted structure
20.	Cop change automatic looms are used for the production of _____ materials.			
	A	Cotton and blends	B	Man-made fibres
	C	Protein fibres	D	Bast fibres
21.	Most dyeing processes are carried out at _____ temperatures.			
	A	Low	B	Medium
	C	High	D	Ambient
22.	With an increase in gauge length, the tenacity of a spun yarn would			
	A	Increase	B	Decrease
	C	Remain same	D	First increase and then decrease
23.	The strength of _____ bond is least.			
	A	hydrogen	B	polar
	C	van de waal's	D	oxygen
24.	The torsion bar of Projectile loom is twisted through _____ degrees at the time of picking.			
	A	28	B	30
	C	32	D	34

25.	_____ finishing is used to improve the crease recovery problems associated with cellulosic materials.			
	A	Microbiocidal	B	Soil release
	C	Resin	D	Water repellent
26.	The prominence of a twill is dependent on _____ in the warp and weft threads.			
	A	Direction of twist	B	Amount of twist
	C	Type of twist	D	None of the above
27	The electrical energy usage in weaving process of any textile mill is _____%.			
	A	24-26	B	26-28
	C	28-30	D	30-32
28	The traditional scouring process for cotton goods involves a treatment with _____ solution at quite high temperature.			
	A	Sodium chloride	B	Sodium hydroxide
	C	Sodium sulphate	D	Sodium carbonate
29	In a carpet, _____ fibres do not show soiling to the same extent as circular fibres.			
	A	trilobal	B	dog bone shape
	C	multilobal	D	square
30	In biological treatment of Effluent Treatment Plant, _____ supplied to the bacteria is consumed under controlled conditions so that most of the BOD is removed in this treatment.			
	A	Carbon dioxide	B	Oxygen
	C	Carbon	D	Nitrogen
31	Bursting strength measurement is commonly used with _____ fabrics.			
	A	Knitted	B	Woven
	C	Braided	D	Triaxial
32	The depth of shed of lever dobby shedding mechanism is always _____ than/to that of tappet shedding mechanism.			
	A	Higher	B	Lower
	C	Equal	D	Optimum

33	The resistance to twisting of a fibre is called its _____.			
	A	Flexural rigidity	B	Torsional rigidity
	C	Crimp rigidity	D	None
34	_____ type of shuttleless loom is preferable for fancy varieties of fabrics.			
	A	Water-jet	B	Air-jet
	C	Rapier	D	Projectile
35	The cleaning efficiencies of spinning machines vary in _____ proportion with the amount of trash in the raw material.			
	A	inverse	B	direct
	C	equal	D	none
36	Voile and crepe fabrics are produced by using highly twisted _____ fold yarns.			
	A	One	B	Two
	C	Three	D	Four
37	The Draw Ratio kept during POY production is generally _____.			
	A	2	B	4
	C	6	D	8
38	_____ fabrics are produced using highly twisted two-fold yarns, with the doubling twist in the same direction as that of the single yarn.			
	A	Matts	B	Satin
	C	Rib	D	Voile
39	The apparatus used to test the fabric for colour fastness is _____.			
	A	Stelometer	B	Crockmeter
	C	Nelometer	D	Colorimeter
40	In weft knitting, each weft thread is fed, more or less, at _____ to the direction in which the fabric is produced.			
	A	30°	B	60°
	C	90°	D	120°
41	Air pressure required for insertion of pick in air jet loom is _____			
	A	2 bar	B	5 bar
	C	6 bar	D	7bar

42	A knitted fabric with vertical rows(wales) of loops meshed in the opposite direction to each other is called _____ fabric.			
	A	Plain	B	Rib
	C	Purl	D	Interlock
43	The diameter of spliced joint of yarn is _____ than/to yarn diameter.			
	A	Less	B	More
	C	Equal	D	Double
44	The yarn take-up package must be directly driven in _____ winding to wind delicate yarns.			
	A	Direct	B	Indirect
	C	Drum	D	Precision
45	_____ is the immediate change in elongation after the load is removed.			
	A	Plastic recovery	B	Plastic extension
	C	Elastic recovery	D	Elastic extension
46	Cabled yarns are produced by _____ separate twisting operations.			
	A	0	B	1
	C	2	D	None
47	Only oxidizing agents are used to bleach _____.			
	A	Cotton	B	Wool
	C	Silk	D	Acrylic
48	Steel fibres are used for filters where _____ resistance is important.			
	A	Electrical	B	Thermal
	C	Chemical	D	Mechanical
49	The chemical and physical properties of the fibre can be altered by _____.			
	A	Bleaching	B	Mercerising
	C	Scouring	D	Finishing
50	The conversion factor used to convert tex into cotton count is _____.			
	A	390.5	B	490.5
	C	590.5	D	690.5

51	The take-up motions provided on weaving machines determine _____ by winding up the cloth at the correct rate.			
	A	Warp density	B	Weft density
	C	Warp & weft densities	D	Cloth densities
52	The effective production of latest comber is generally _____ kgs / day .			
	A	2	B	20
	C	200	D	2000
53	The shape and appearance of a fibre under an optical microscope is called _____			
	A	Fine structure	B	Chemical structure
	C	Gross morphology	D	Coarse structure
54	The linear density of 100 meter hank of yarn weighing 3.08 grams is _____ tex.			
	A	12.5	B	40.6
	C	30.8	D	40.8
55	In combing process, _____ % of waste is extracted.			
	A	4-7	B	12-17
	C	17-20	D	20-23
56	Long term blend variations in yarns may be caused by _____.			
	A	Changing the fibre supplier	B	Inadequate fibre separation
	C	Inadequate number of doublings at card/draw frame	D	Too few fibres in the yarn cross section
57	_____ fabric has a smooth , lustrous surface created by extensive floating of warp or weft on the face of fabric.			
	A	Plain	B	Twill
	C	Satin	D	Terry
58	HVI is a combination of instruments providing data based on at least _____ measurable parameters.			
	A	5	B	6
	C	7	D	8
59	_____ is a mechanical finishing process.			
	A	Calendering	B	Bleaching
	C	Scouring	D	Finishing

60	In a cotton card, the wire point density on			
	A	Cylinder is greater than that on flat	B	Doffer is greater than that on cylinder
	C	Cylinder is lesser than that on flat	D	Flat is greater than that on doffer
61	Amorphous region in fibre is responsible for its higher _____.			
	A	Elongation	B	Strength
	C	Crimp	D	Twist
62	Single end sizing process is used for _____ yarns.			
	A	cotton	B	polyester
	C	wool	D	hair
63	_____ is equal to the area covered under the Load Elongation curve.			
	A	Breaking load	B	Tenacity
	C	Work of rupture	D	Initial modulus
64	A single lift jacquard produces			
	A	Open shedding	B	Cross shedding
	C	Bottom closed shedding	D	Centre closed shedding
65	In terry fabrics, always _____ number of picks are inserted as loose picks.			
	A	1	B	2
	C	3	D	4
66	In a drawframe with 3 over 3 drafting system, the roller most prone to slip is			
	A	Middle top roller	B	Front top roller
	C	Back top roller	D	Front bottom roller
67	_____ type of shed if formed by tappet shedding mechanism.			
	A	Bottom stationary close shed	B	Centre close shed
	C	Open shed	D	Semi-open shed
68	All electronic jacquards employ _____ hooks for each end.			
	A	1	B	2
	C	3	D	4

69	'Doup' is frequently used in producing			
	A	Terry towels	B	Double cloths
	C	Gauze and leno weaves	D	Stripes and checks
70	Short-staple spinning process is used for spinning of fibres of between _____ mm to _____ mm length.			
	A	10 to 60	B	20 to 70
	C	30 to 80	D	40 to 90
71	Polyester is dyed with ____ dyes			
	A	Cationic	B	Vat
	C	Disperse	D	Direct
72	Double acting dobby is driven from			
	A	Bottom shaft	B	Crank shaft
	C	Tappet shaft	D	Rocking shaft
73	_____ of yarn is affected by variation in fineness.			
	A	Strength	B	Elongation
	C	Initial modulus	D	Strain
74	_____ fibres are dissolved in 90% formic acid or meta cresol.			
	A	Polyamide	B	Polyacrylic
	C	Polyolefine	D	Polyester
75	Multicoloured yarn effect can be achieved with			
	A	Cheese winding machine	B	Sectional warping machine
	C	Cone winding machine	D	None of above
76	A short term variation of irregularity occurs at _____.			
	A	1-10 times the fibre length	B	10-100 times the fibre length
	C	100-1000 times the fibre length	D	1000-10000 times the fibre length
77	The number of kg of paste on 100 kg of oven-dry yarn as it leaves the tip of the squeeze rollers is called _____.			
	A	% size	B	% size add-on
	C	% size pick-up	D	% concentration

78	In M8300 Multi-phase weaving machine, _____ picks are inserted at a time.			
	A	1	B	2
	C	3	D	4
79	More floor space requirement is the main limitation of _____ type of rapier loom.			
	A	Single rapier	B	Double rapier
	C	Rigid rapier	D	Flexible rapier
80	Retting is the extraction process applied for the production of			
	A	Wool	B	Viscose
	C	Silk	D	Jute
81	The inverse Laplace transform of $F(s) = \frac{4s+12}{s^2+8s+16}$ is			
	A	$4e^{-4t}(1-t)$	B	$4e^{-4t}(1-2t)$
	C	$4e^{-2t}(1-t)$	D	$4e^{-2t}(1-2t)$
82	The Laplace transform of $f(t) = t \sin 3t$ is			
	A	$\frac{6s}{s^2+9}$	B	$\frac{3s}{s^2+9}$
	C	$\frac{3s}{(s^2+9)^2}$	D	$\frac{6s}{(s^2+9)^2}$
83	If α and β are respectively the order and degree of the differential equation $\left(\frac{dy}{dx}\right)^2 - 2xy^3 = \sin x$ then			
	A	$(\alpha, \beta) = (1, 3)$	B	$(\alpha, \beta) = (1, 2)$
	C	$(\alpha, \beta) = (2, 1)$	D	$(\alpha, \beta) = (3, 1)$
84	The solution of the differential equation $9ydy + 4xdx = 0$ represents			
	A	Family of ellipses centered at the origin	B	Family of circles centered at the origin
	C	Family of straight lines through the origin	D	None of these
85	The general solution of the differential equation $(D^2 + 6D + 9)y = 0$ is			
	A	$y = (c_1 + c_2)xe^{-3x}$	B	$y = c_1e^{-3x} + c_2xe^{-3x}$
	C	$y = (c_1 + c_2)xe^{3x}$	D	$y = c_1e^{3x} + c_2xe^{3x}$

86	If $z = f(x, y) = x + y^x$ then the value of $\frac{\partial^2 z}{\partial y \partial x}$ at the point (0,2) is			
	A	2	B	$\frac{1}{2}$
	C	-2	D	$-\frac{1}{2}$
87	If $u = x + y$ and $v = 2x - y$ then the value of the Jacobian $\frac{\partial(x,y)}{\partial(u,v)}$ is			
	A	3	B	-3
	C	1/3	D	-1/3
88	If $f(x, y) = x + y + \frac{1}{x} + \frac{1}{y}$ then the point (1,1) is			
	A	A point of maxima	B	A point of minima
	C	A saddle point	D	None of these
89	Let $f(x) = \frac{e^{2x-1}}{x}$ for $x \neq 0$ and $f(0) = \alpha$. Then f is continuous at $x = 0$ if α equals			
	A	0	B	1
	C	2	D	1/2
90	If f is a continuous and differentiable function then which of the following statements is true for the function $ f $?			
	A	$ f $ is also continuous and differentiable	B	$ f $ is continuous but may not be differentiable
	C	$ f $ is differentiable but may not be continuous	D	$ f $ is neither continuous nor differentiable
91	If the vector field $\vec{F} = (x + y + az)\hat{i} + (x + 2y - z)\hat{j} + (-x - y + 2z)\hat{k}$, is irrotational then the value of a is			
	A	-1	B	1
	C	0	D	2
92	If C is the circle $ z - 2 = 3$ then $\int_C \frac{z}{z-2} dz$ equals			
	A	0	B	$2\pi i$
	C	2π	D	$4\pi i$
93	The radius of convergence of the series $\sum_{n=1}^{\infty} \frac{z^n}{2^{n+1}}$ is			
	A	0	B	1
	C	2	D	∞

94	Consider a system of linear equations $Ax = b$ with $\det A \neq 0$. Then the system has			
	A	Infinite solutions	B	A unique solution
	C	No solution	D	Unique solution if and only if $b = 0$
95	Consider the matrix $A = \begin{bmatrix} a & 0 \\ b & c \end{bmatrix}$ Then 0 is the eigen value of A if and only if			
	A	$ac = 0$	B	$ab = 0$
	C	$bc = 0$	D	$abc = 0$
96	Which of the following matrices have non-zero and distinct eigen values?			
	A	$\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$	B	$\begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}$
	C	$\begin{bmatrix} 2 & 1 \\ 0 & 2 \end{bmatrix}$	D	$\begin{bmatrix} 0 & 1 \\ 0 & 1 \end{bmatrix}$
97	If the median of the observations 20, 25, 30, 35, 26, 18, 40 and the median of the observations 20, 25, 30, 35, 26, 18, 40, x, y are equal then the possible values of x and y is			
	A	16 and 24	B	16 and 33
	C	33 and 38	D	28 and 33
98	If the mean of the 21 observations x_1, x_2, \dots, x_{21} is 30 and $y_i = x_i + i$ for $i = 1, 2, \dots, 21$ then the mean of the observations y_1, y_2, \dots, y_{21} is			
	A	41	B	42
	C	51	D	52
99	Which of the following is associated with Numerical Integration?			
	A	Trapezoidal rule	B	Newton Raphson formula
	C	Gauss elimination method	D	Gauss Jacobi method
100	Which of the following equations represent one dimensional heat equation?			
	A	$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial u}{\partial x}$	B	$\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$
	C	$\frac{\partial u}{\partial t} = c^2 \frac{\partial^2 u}{\partial x^2}$	D	$\frac{\partial^2 u}{\partial x \partial t} = c^2 \frac{\partial u}{\partial x}$