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Booklet Series

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Register			
Number	•		

2008 TEXTILE ENGINEERING

Time	Alla	med	. 2	Hours	ì
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Maximum Marks: 300

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

IMPORTANT INSTRUCTIONS

- This Booklet has a cover (this page) which should not be opened till the invigilator gives signal
 to open it at the commencement of the examination. As soon as the signal is received you should
 tear the right side of the booklet cover carefully to open the booklet. Then proceed to answer the
 questions.
- This Question Booklet contains 200 questions.
- 3. Answer all questions.
- 4. All questions carry equal marks.
- 5. The Test Booklet is printed in four series e.g. A B C or D (See Top left side of this page). The candidate has to indicate in the space provided in the Answer Sheet the series of the booklet. For example, if the candidate gets A series booklet, he/she has to indicate in the side 2 of the Answer Sheet with Blue or Black ink Ball point pen as follows:

A [B] [C] [D]

- 6. 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.
- 7. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers. You must write your Name, Register No. and other particulars on side 1 of the Answer Sheet provided, failing which your Answer Sheet will not be evaluated.
- 8. You will also encode your Register Number, Subject Code 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, your Answer Sheet will not be evaluated.
- 9. 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.
- 10. In the Answer Sheet there are **four** brackets [A] [B] [C] and [D] against each question. To answer the questions you are to mark with Ball point pen ONLY ONE bracket 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, (B) is the correct answer, you have to mark as follows:

[A] [C] [D]

- 11. 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.
- 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.
- 13. Do not tick-mark or mark the answers in the Question Booklet.

Turn over

1.	1. The speed at which POY (PET) is produced is					
	A)	100 m / min	B)	6000 m / min		
	C)	3000 m / min	D)	4500 m / min.		
2.	Poly	vstyrene cannot be made into f	lbre becaus	se .		
	A)	it is amorphous	B)	it is linear		
	C)	it is semi-crystalline	D)	it is crystalline.		
3.	Gla	ss transition temperature (T_g) is	reaction.		
	A)	endothermic	B)	exothermic		
	C)	partially exothermic	D)	partially endothermic.		
4.	The	crystallinity % of polypropyler	ne fibre is	1		
	A)	6%	B)	75%		
	C) ,	25%	, D)	50%.		
5.	The	e fibre with negative birefringer	ice is			
	.A)	PET	В)	nylon-6		
٠.	C)	nylon-66	D)	acrylic.		
6.	The	e precursor for carbon fibre is				
	A)	nylon-6	B)	PET		
	C)	acrylic	D)	nylon-66.		
7.	The	melt flow index of high molecu	ılar weight	PP is		
	A)	3	B)	25		
	C)	30	D)	35.		
8.		is used as preferred ca	talyst for p	polymerisation of caprolactum.		
	A)	Acid	B)	Base		
	C)	Water	D)	Salt solution.		
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9.	The	he glass transition temperature of polypropylene is				
	A)	– 10° C	B)	- 100° C		
	C)	– 50° C	D)	10° C.		
10.	The	fibre that can be cold drawn is				
•	A)	nylon	B)	PET		
	C)	acrylic	D)	Aramid.		
11.		relationship between molecumerisation) in nylon-6 polymeris	-	ght (MW) and DP (degree of		
•	A)	$MW = 10 \times DP$	B)	$MW = 113 \times DP$		
	C)	$MW = 200 \times DP$	D)	$MW = 250 \times DP.$		
12.	PET	dissolves in				
	A)	acetic acid	B)	acrylic acid		
÷	C)	o-chlorophenol	D)	acetone.		
13.	The	length of screw in extruder is h	igher for			
	A)	nylon-6	B)	nylon-66		
	C)	PET	D)	PP.		
14.	The	density of fibre is high	ghest.			
	A)	polypropylene	B)	polyethylene		
	C)	nylon	D)	cotton.		
15.	Whi	ch one of the following is a fault	produce	d in friction texturising?		
	A)	Die swell	B)	Draw resonance		
	C)	Tight spots	D)	Melt drips.		
16.	The	melting point of high performan	ce polyet	hylene is		
	A) .	150° C	B)	200° C		
	C)	10' C	D)	70° C.		
17.	The	fibre that is used for ballistic pr	rotection	is		
	A)	carbon fibre	B)	glass fibre		
	C)	high performance polyethylene	D)	PET fibre.		
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18.	Acrylic fibres are solution spun because					
	A)	it is eco-friendly	B)	the production speed is higher		
	C)	it is cost effective	D)	acrylic polymer cannot be melted.		
19.	Ret fibr	-	pplied	for the production of		
-	A)	wool	B)	silk		
	C)	viscose	D)	jute.		
20.		temperature range adopted ufacture is	in the	shredding process of viscose		
	A)	60°C – 70°C	B)	90°C - 100°C		
	(C)	50°C - 55°C	D)	18°C - 20°C.		
21.	The	fibre that is produced by condensa	ition po	lymerisation is		
	A)	PP	B)	PE		
	C)	nylon	D)	acrylic.		
22.	The	moisture regain of silk at 65% RH	is arou	nd		
	A)	20%	B)	10%		
	C)	2%	D) .	30%.		
23.	The	thermal conductivity of cotton fibre	e in MW	/m ⁻¹ K ⁻¹ unit is around		
	A) .	25	B)	71		
	C)	5	D)	12.		
24.	The	wet strength of viscose fibre is	********	. its dry strength.		
	A)	equal to	B)	higher than		
	C)	lower than	Dj	none of these.		
25.	Crin	ikle type textured yarn is produced	by			
	A)	stuffer box method	B)	knit-de-knit method		
	C)	air jet texturing	D)	draw texturing.		
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A)

PET

Polypropylene

32.

B)

D)

Nylon

Glass.

The specific strength of which fibre is highest?

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	Which one of the following techniques is used to calculate crystallinity and orientation of crystals in fibre?							
	A)	Dens	ity			B)	DSC	
	C)	X-ray	y diffira	action		D)	Sonic modulus.	
34.	PET	can b	e easi	ly textı	urised bec	ause of		
	A)	high	specifi	c heat	and high	thermal con	ductivity	
	B)	low s	pecific	heat a	ınd high tl	nermal cond	uctivity	
	C)	C) low specific heat and low thermal conductivity						
-	D)	high	specifi	ic heat	and low tl	hermal cond	uctivity.	
35.	Wh	ich on	e of th	e follov	ving fibres	can be stea	ım set ?	
	A)	PET	-			B)	Acrylic	÷
	C)	Poly	propyle	ene		. D)	Polyethylene.	
36.	The	delive	ry rate	e of mo	dern high	production	card is upto about	
	A)	10 m	ı / mir	1		В)	50 m / min	•
	C)	250	m/m	in		D)	600 m / min.	-
37.	Mat belo		st I wii	th List	II correct	ly and select	your answer using the codes	given
		I	Ast I				List II	
	a)	Car	d			. 1)	open loop autoleveller	
	b)	Dra	w fran	ne		2)	planofeed regulation	
	c)	Spe	ed frai	ne		3)	closed loop autoleveller	
	d)	Blov	ving ro	om		4)	bobbin lead mechanism	•
	Cod	les :						
		а	b	c	đ			
	A)	3	1	2	4		•	•
	B)	3	4	1	2			
	C)	1	3	4	2	•		
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38.	Fib	ibres first reach the "Single fibre" state when they have been processed into				
	A)	blowing room lap		1		
	B)	card sliver				
	C)	first passage draw frame sliver				
	D)	second passage draw frame sliver	•			
39.	Сот	mbing efficiency is a measure of	•	•		
	A)	increase in 50% span length of fi	bre			
	B)	increase in 2.5% span length of	fibre			
	C)	decrease in 50% span length of i	fibre			
	D)	decrease in 2.5% span length of	fibre.			
40.	' Apı	rons are not used in the drafting sys	stem o	f		
	A)	ring frame	B)	draw frame		
	C)	speed frame	D)	air jet spinning machine.		
41.	The	e nbil % removal at the comber incre	eases	with		
	(A)	increase in feed/nip in forward fe	ed	-		
	B)	decrease in detaching distance		•		
,	C)	increase in feed / nip in backwar	d feed	; '		
,	D)	lower short fibre content in the fe	ed lap			
42.		e overall cleaning efficiency of b ividual cleaning efficiencies of 25%		g room having 3 machines with and 25% is		
	A)	80%	B)	20%		
	· C)	61%	D)	53%.		
43.		ring processing of cotton in the blo put compared to input	owing	room line, the neps present in the		
	A) (increase by about 100%	B)	decrease by about 50%		
v.	C)·	decrease by about 100%	D)	decrease by about 75%.		
x 4	97	500	14			

44.	The amount of belt shift on the cone drum of speed frame builder motion per
	roving layer formation on bobbin is

- A) higher for coarser roving
- B) lower for coarser roving
- C) higher for finer roving
- D) independent of fineness of roving.

45. The detaching roller of comber

- A) rotates in one direction intermittently
- B) rotates in both directions intermittently
- C) rotates in one direction continuously
- D) does not rotate.

46. The trash present in the raw cotton is 5%. If the cleaning efficiency of blowing room line is 60% and card is 90%, the trash present in the card sliver is

A) 0.2%

B) 0.1%

C) 0.75%

D) 0.4%

47. Which is the correct relationship, where P is waste % removed?

- A) Draft = Attenuation $\times \frac{100}{100 P}$
- B) Attenuation = Draft $\times \frac{100}{100 P}$
- C) Attenuation = Draft $\times P$
- D) Attenuation = $\frac{\text{Draft}}{P}$.

48. The carding angle, "the inclination of the leading face of the tooth to vertical" increases in the sequence of

- A) cylinder, licker-in, doffer
- B) licker-in, cylinder, doffer
- C) cylinder, doffer, licker-in
- D) doffer, cylinder, licker-in.

49. The process sequence for comber preparatory is

- A) ribbon lap machine sliver lap machine
- B) draw frame sliver lap machine ribbon lap machine
- C) draw frame super lap forming machine
- D) super lap forming machine draw frame.

50.	The hank (Ne) of the draw frame output sliver for 8 numbers of feed having input sliver hank of 0.12 Ne and draft at the draw frame of 7.8 is								
	A }	0.117	B)	0.120					
	C)	0.123	D)	0.126.					
51.	Con	sider the following statements:							
•	The formation of drafting wave in the ring frame drafting can be reduced by								
		I. proper selection of spacin	g betwee	en the aprons					
		II. proper selection of break	draft						
		III. proper selection of roller s	ettings						
	Of t	he statements :							
į	A)	(I) alone is correct	B)	(I) and (II) are correct					
,	C)	all are correct	D)	(I) and (III) are correct.					
52 .		nber of fibres in the cross-section as 4.0 micronaire fibre is	of yarr	n of linear density 59 tex and spun					
	A)	62	B)	75					
	C)	125	D)	375.					
53.	Sele	ect the odd one from the following	; : '						
•	A)	Low crown ring	B)	Orbit ring					
٠.	C)	Anti-wedge ring	D)	Double flange ring.					
54.	Rur	nning-in process is carried out wh	en						
-	A)	new rings are used	B)	new travellers are used					
•	C)	new spindles are used	Đ)	new ring cops are used.					
55.	The	shore hardness of rubber cots o	f draftin	g top roller lies in the range of					
	A)	10° to 30°	B)	30° to 60°					
	C) -	60° to 90°	D)	90° to 100°.					
56.		tube to ring diameter ratio ha uce yarn tension variations?	s to be	in which of the following limits to					
	A)	1:2 to 1:2.2	B)	2:1 to 2.2:1					
	C)	1:1 to 1:1.2	D)	1:1.2 to 1:1.					
	2	r -	1004						

5	7 .	In	ring	frame	P
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- A) Winding speed = Spindle speed + Traveller speed
- B) Winding speed = Traveller speed Spindle speed
- C) Winding speed = Spindle speed Traveller speed
- D) Winding speed = Spindle speed + Delivery rate.
- 58. The twist multiplier (in English count system) used while spinning the following yarns decreases in the sequence of
 - A) Cotton carded yarn, Cotton combed yarn, Polyester yarn
 - B) Cotton combed yarn, Cotton carded yarn, Polyester yarn
 - C) Polyester yarn, Cotton carded yarn, Cotton combed yarn
 - D) Polyester yarn, Cotton combed yarn, Cotton carded yarn.
- 59. The limit unevenness (U_{lim}) for the yarn having 100 fibres in cross-section is approximately
 - A) 8.0

B) 10.0

C) 0.8

- D) 1.0.
- 60. Select the wrong statement (in ring frame):
 - A) Production per spindle shift of coarser yarn is higher than finer yarn
 - B) Production per spindle shift of combed yarn is higher than carded yarn for the same fibre and yarn fineness
 - C) Production per spindle shift of carded yarn is higher than combed yarn for the same fibre and yarn fineness
 - D) Production per spindle shift of hosiery yarn is higher than weaving yarn for the same fibre and yarn fineness.
- 61. Which one of the following elements does not give false twist effect?
 - A) Flyer cap in the flyer of speed frame
 - B) Twisting nozzle of air jet spinning machine
 - C) Navel of rotor spinning machine
 - D) Transport tube of rotor spinning machine.

62.	Berkolisation is the process done on				
	A)	rubber cots of top rollers of drafting system			
	B)	B) aprons of drafting system			
	C)	bottom fluted rollers of drafting sy	stem		
	D)	spindles.			
63.	The	maximum traveller speed in ring s	pinnin	g system is about	
	A)	40 m / min	B)	40 m / sec	
	C)	40 m / hour	D)	40 km / hour.	
64.	The to	e winding tension on yarn in ring sp	inninį	g system is not directly proportional	
	A)	mass of the traveller	B)	spindle speed	
	C)	ring diameter	D)	mass of ring tube.	
65.		ree 60 Ne single yarns are plied to p ee-ply yarn is	roduc	e a ply yarn. The resultant count of	
	A)	30 Ne	B)	20 Ne	
	C)	60 Ne	D)	16·7 Ne.	
66.	The	e drafting force		,	
	A)	increases linearly with draft		•	
	B)	decreases linearly with draft			
	C)	initially increases with draft upto	certai	n level, then decreases	
	D)	initially decreases with draft upto	certai	n level, then increases.	
67.	Whi	ich of the following systems is not w	vorkin	g on open end spinning principle?	
	A)	Rotor spinning		•	
	B)	Electrostatic spinning			
	C)	Bobtex ICS			
	D)	DREF 2 spinning.	······		
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	C) >	Repco self-twist spinning syste	m D)	Twilo system.
	A)	Plyfil system	B)	Parafil system
74.	Con	nbining of two fibre strands with	a phase	shift is applied in
	C)	800	D)	2512.
I .	A)	6	B)	99
73.	The inch	· -	h diame	ter of 40 mm and for 20 twist per
	C)	Bobtex process	D)	Plyfil process.
-	А) •	Twilo process	B)	Pavena process
72.	Whi	ch one of the following systems	ls not ba	sed on adhesive principle?
	C)	10 - 30 Ne	D)	less than 0.2 Ne.
	A)	. 0·2 - 5 Ne	B)	10 - 20 Ne
71.		range of fineness of yarn that em is	can be	produced using DREF 2 spinning
	D)	The packing density of ring yar	n is high	er than friction spun yarn.
	C)	Stiffness of air jet yarn is higher	r than ro	tor yarn
•	B)	Tendency to snarl is higher for	rotor yar	n compared to ring yarn
	A)	Tensile strength of ring yarn is	higher th	nan rotor yarn
70.	Sele	ect the wrong statement for the s	imilar ya	m:
-	D)	Rotor spinning.	,	
	C)	Electrostatic spinning		
	B)	Double rove spinning	•	•
	A)	Ring spinning	·	
69.	Whi	ch of the following systems has	highest p	production rate?
•	C)	Ring spinning system	D)	DREF 3 spinning system.
,	A)	Rotor spinning system	B)	DREF 2 spinning system
68.	Sup	erfine yarns can be produced u	sing	•

75.	diff	· · · · · · · · · · · · · · · · · · ·		tem has which one of the following the yarn spun using normal ring
	A)	More hairiness	B)	Lower tensile strength
	C)	Higher tensile strength	D)	No difference.
76.		ich one of the following spinning s nning?	syster	ns is generally applied for woollen
	A)	Rotor spinning system	B)	DREF 3 system
	C)	SIRO system	D)	Twilo system.
77.	Whi	ich one of the following raw material	ls are	used for wrap spinning system?
	A)	Cotton fibres alone	B)	Synthetic fibres alone
	C)	Synthetic fibres and cotton fibres	D)	Synthetic fibres and filament.
78.	Coa	rser yarn cannot be produced using	,	
	A)	Ring spinning system	B)	Rotor spinning system
	C)	Friction spinning system	D)	Air jet spinning system.
79.	Fas	ciated yarn can be produced using		
		I. DREF 3 system		
		II. Air jet spinning system		
		III. Twilo spinning system.		
	Of :	these:		•
	A)	(I) alone is correct	B)	(II) alone is correct
	C)	(I) and (II) are correct	D)	All are correct.
80.	The	e pre-wet sizing technique		
	A)	increases size adhesion	B)	reduces abrasion resistance
	C)	increases hairiness	D)	reduces tensile strength.
81.	The	SIRO optical clearer in winding ma	chine	e clears
	A)	long thick faults present in the ya	m	
	B)	slubs present in the yarn	•	•
	C)	contaminations present in the yarr	n	· '· · · · · · · · · · · · · · · · · ·
	D)	neps present in the yarn.		

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82 .	In sizing, PVA adhesive is used for sizing			
	A)	cotton yarn	B)	polyester / cotton yarn
	C)	worsted yarn	D)	silk yarn.
83.	Sing	gle end sizing technique is used to s	ize	
	A)	multifilament yarn	B)	rotor yarn
	C)	silk yarn	D)	ply yarn:
84.	Sec	tional warping is used to prepare		
	A)	silk warp	B)	synthetic yarn warp
	C)	coloured warp	D } .	sized warp.
85.	The	breaking strength of ring spliced co	otton y	yarns to a parent yarn is
	A)	70% - 80%	B)	54% - 70%
	C)	80% - 90%	D)	50% - 60%.
86.		drum winding, which of the following the following minimum package density?	ng dri	ums gives maximum winding angle
	A)	1.0 scroll	B)	1.5 scroll
	C)	2·0 scroll	D)	2.5 scroll.
87.	In t	he surface driven machines as the	packa	ge builds up, the traverse ratio
	A)	steadily decreases	B)	steadily increases
	C)	no change	D)	none of these.
88.	Mag	gazine creel is used in warping for		
	A)	synthetic yarn	B)	continuous production
	C)	to minimize end breaks	D)	easy unwinding.
89.	Pre	cision winder is used to wind		
	A)	rotor yarn	B)	ring yarn
	C)	synthetic yarn	D)	worsted yarn.
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90.	Object of sizing is					
•	A)	to improve the yarn strength				
	B)	to bind hair fibres	. •			
	C)	to improve yarn abrasion resistance	ce			
	D)	to improve the yarn elongation at l	break.	•		
91.	1. Accelerated drum is used to prepare cone for					
	A)	knitting	B)	weaving		
	C)	sizing	D)	warping.		
92.	In v	vinding yarn, thin place is removed	at			
	A)	clearer	B)	tensioner		
	C)	balloon breaker	D)	none of these.		
93.	The	e objective of pick finding device is				
	- A)	sensing the pick				
	B)	sensing and stopping the loom if t	he we	ft yarn breaks		
	C)	sending, stopping the loom and re	movin	ng the broken pick from the fabric		
	D)	none of these.				
94.	The	increase in warp tension				
	A)	A) increases the warp crimp and decreases the west crimp				
	B)	B) decreases the warp crimp and increases the west crimp				
	C)	increases both warp and weft crin	nps			
	D)	decreases both warp and weft cris	nps.			
95.	The	beat-up is done on an open shed for	or			
	A)	worsted yarn	B)	rotor yarn		
	C)	filament yarn	D)	compact yarn.		
				•		

96.	The	most widely used non-shuttle loo	m in In	dia is of the
	A)	Projectile type	B)	Air jet type
·	C)	Rapier type	· D)	Water jet type.
97.	The	advantage of asymmetric shedding	ng is	
	A)	to improve the cloth cover	B)	to weave fancy threads
	C)	to weave low dense fabric	D)	none of these.
98.	Whi	ch of the following sheds is used	to weav	re gauze and leno fabrics?
	A)	Open shed	B)	Semi-open shed
	C)	Centre closed shed	D)	bottom closed shed.
99.	Late	shedding is used in weaving		,
	A)	plain weave fabrics	B)	heavy weight fabrics
	C)	lighter and fancier type fabrics	D)	twill fabrics.
100.	In w	ride width looms, sley eccentricity	ratio is	· }
	A)	high	B)	low
	C)	no relationship	D)	none of these.
101.	In a		nachine	e the projectile's movement comes
	A)	a pneumatic device	B)	a cam based picking stick
	C)	a torsion based picker	D}	a fly-wheel based picker.
102.	Con	sider the following statements:		•
		 Sulzer type projectile looms change motions. 	s have t	the option of both 2 weft and 4 weft
	· 4	II. Sulzer type projectile loom weft so as to reduce pickin		ompressed air to pre-accelerate the on on the yarn.
. If	Of the	he statements:		
	A)	Both are false	B)	(I) is true, but (II) is false
	C)	(I) is false, but (II) is true	D)	Both are true.
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103. The fastest rate of weft insertion is achieved by				
	A)	Multiphase looms	B)	Projectile looms
	C)	Rapier looms	D)	none of these.
104.	Dob	by shedding controls healed frames	upto	
	A)	12	B)	24
•	C)	40	, D)	16.
105.	The	waste of weft at the selvedges is hi	ghest	in
	A)	Multiphase loom	B)	Air jet loom
	C)	Projectile loom	D)	Rapier loom.
106.		weaving machine with the lowest	ener	gy consumption per metre of we
	A)	Air jet loom	B)	Rapier loom
	C)	Projectile loom	D)	Multiphase loom.
107.	Rota	ary dobby is used in		
	A)	non-automatic loom	B)	high speed shuttle loom
	C)	high speed shuttleless loom	D)	none of these.
108.	In k	nitting, the term 'plating' refers to		· · · · · · · · · · · · · · · · · · ·
	A)	tucking alternate courses		
	B)	missing alternate courses		
	C)	knitting two separate coloured the	reads	
	D)	knitting with fancy yarn.		
109.	In fl	at bed knitting machine, the term 'r	ackin	g' indicates
-	A)	removal of needle in one bed	•	•
	B)	shifting of one bed with respect t	o oth	er bed
	C)	knitting with one bed only		
	D)	none of these.		
		- · · · · · · · · · · · · · · · · · · ·		•

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10.	The	advantage of bearded needle is		,
	A)	knitting speed can be improved	B)	finer gauge is possible
	C)	less needle breakage	D)	high quality fabric is possible.
111.	The	tuck loop in the Rib fabric		
	A)	increases the thickness of the fabr	ic	·
	B)	decreases the thickness of the fab	ric	
	C)	increases the elongation of the fabr	ric	
	D)	none of these.		
112.	The	objective of loop transfer stitch in k	nittin	g is
	A)	to produce fancy effects		
	B)	to increase the dimensional stabilit	y	•
	C)	to increase the thickness		
	D)	none of these.		
113.	The	connecting loop in the warp knitted	fabri	c is called
	A)	sinker loop	B)	overlap
	C)	underlap	D)	needle loop.
114.	Whi	ch of the following needles is used in	n tricc	ot warp knitting machine?
	A)	Compound needle	B)	Latch needle
	C) ·	Bearded needle	D)	Double headed needle.
115.		length of the knitted fabric is varie	ed by	
	A)	changing the needle stroke	_	
	B)	increasing the distance between fe		and needle
	C)	increasing the speed of the machin	ie	•
	D)	none of these.		

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116.	Whi	hich of the following knit fabrics has more coursewise elongation?			
•	A)	Plain fabric	B)	Interlock fabric	
	C)	Purl fabric	D)	Rib fabric.	
117.	Long	g and short needles are used in			
	A)	Weft knitting machine	B)	Interlock machine	
	C)	Rib machine	D)	Single jersey machine.	
118.	The	disadvantage of delayed timing is			
	A)	more end breaks during knitting			
	B)	resultant fabric is not stable			
	C)	rib jacquard design is not possible	•		
	D)	needle breakage is high.			
119.	Whi	ch of the following needles is used	in higi	h speed knitting machine?	
	A)	Latch needle	B)	Compound needle	
	C)	Bearded needle	D)	None of these.	
120.	Whi	ch of the following structures is no	t prod	uced in weft knitting machine?	
	A)	Swiss pique	B)	Lock knit	
	C)	Cardigan	D)	Purl.	
121.	The	most commonly used method for p	redict	ing a colour mix recipe is known a	
	A)	the reflective curve matching meth	hod .		
	B)	the Kubelka-Munk method			
	C)	the C. I. E. method			
•	'D)	the absorption curve matching me	ethod.		
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		21		Gr.
122.	The	dissociation constant of Hydrogen	peroxi	de is
•	A)	200	B)	2.4×10^{-12}
	C)	1.0×10^{-2}	D)	0·8 × 10 ⁻⁴
123.		dyes are used for dyeing of Pl	ET.	·
	A)	Vat	B)	Sulphur
	C)	Reactive	D)	Disperse.
124.	You	ng-Dupre equation is given by (γ - s	urfac	e tension)
	A)	$\gamma_{SV} = \gamma_{SL} + \gamma_{LV} \cos \theta$	B)	$\gamma_{SL}^{\prime} = \gamma_{SV} + \gamma_{LV} \cos \theta$
	C)	$\gamma_{LV} = \gamma_{SV} + \gamma_{SL} \cos \theta$	D)	$\gamma_{SV} = \gamma_{SL} \cos \theta + \gamma_{LV}$
125.	The	surface tension of water γ_{LV} is		
	A)	5 dynes / cm	B)	73 dynes / cm
	C)	120 dynes / cm	D)	15 dynes / cm.
126.	The	most common defect faced during t	eam (dyeing of polyester is
	A)	Bulking	B)	Moire effect
	C)	Blinding	D)	Matt effect.
127.	The	pH at which H ₂ O ₂ can be stored is	,	
•	A)	3.5	B)	6-5
	C)	7.5	D)	10.5
128.	Tria	zinyl type reactive dye reacts with c	ellulos	se by
	A) .	ring opening reaction	B)	nucleophilic substitution reaction
	C)	nucleophilic addition reaction	D)	salt linkage reaction.
129.	The	most commonly used sequestering	agent	is
	A)	EDTA	B)	NaOH

Na₂CO₃

D)

 $Ca(OH)_2$.

- 130. Which one of the following is a universal bleaching agent?
 - A) NaOCl

B) NaClO₂

C) H₂O₂

- D) Na₂SO₃.
- 131. The enzyme that is used as peroxide killer is
 - A) catalase

B) amylase

C) maltase

D) cellulase.

- 132. Biopolishing is done
 - A) to remove protruding fibres
- B) to increase strength of fibres

C) to remove stains

- D) to decrease dyeability.
- 133. Which one of the following is used as oil / stain repellent finish in fabrics?
 - A) Vinyl ester resin

B) Polyester resin

C) Fluoro-polymer

- D) Epoxy resin.
- 134. Kubelka-Munk relation is given by

A)
$$\frac{K}{S} = \frac{2R}{(1-R)^2}$$

B)
$$\frac{K}{S} = \frac{(1-R\cdot)^2}{2R}$$

C)
$$\frac{S}{K} = \frac{(1-R)^2}{2R}$$

D)
$$\frac{K}{S} = \frac{(1-R)}{2R}$$
.

- 135. Class A direct dyes have properties.
 - A) good migration and poor levelling
 - B) poor migration and good levelling
 - C) good migration and good levelling
 - D) poor migration and poor levelling.
- 136. The difference in standard potential ($\Delta\mu$) between the two phases is given by

A)
$$\Delta \mu^{\circ} = RT \, L \, \frac{[D_s]}{[D_f]}$$

B)
$$\Delta \mu^* = RT \ln \frac{[D_f]}{[D_s]}$$

C)
$$-\Delta\mu^{\circ} = RT \ln \left\{ \frac{[D]_s}{[D]_f} \right\}$$

D)
$$-\Delta\mu^{\circ} = RT \ln \frac{[D]_f}{[D]_s}$$
.

137.	•••••	isotherm is applicable to t	he ad	sorption of direct and vat dyes by
	cellı	ılosic fibres.		
	A)	Nernst	B)	Langmuir
	C)	Freundlich	D)	Minch.
138.	The	distance between the conducting el	ement	ts of Shirley moisture meter is
	A)	equal for both fibres and yarns		
	B)	more for fibres than yarns		
	C)	less for fibres than yarns		
	D)	in the ratio of 4:1 for fibre to yar	n.	·
139.	The	modal length in a frequency distrib	ution	of fibres is
	A)	the maximum length	B)	the average length
	C)	the length of maximum frequency	D)	the lower quartile length.
140.	The	breaking strength of nylon parachu	te clo	th in kgs / cm width is
	A)	2 to 3	B)	7 to 10
	C)	25 to 30	D)	50 to 100.
141.		twist measurement in single yar	ns in	volves which one of the following
	fact	ors ?	i	
	A)	Elasticity	B)	Contraction
	C)	Rigidity	D)	Bending.
142.	The	rubbing surface employed in ICI Bo	x type	e pilling tester is
	A)	cork sheet of 1 mm thickness	•	
ų	B)	cork sheet of 3 mm thickness		
	C)	neoprene based rubberized cork sl	neet o	f 3 mm thickness
	D)	rubberized cork sheet of 2 mm this	cknes	s
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143.		duration of creasing time applied very measurements in fabrics is	i in t	he continental method of crease
	A)	2 minutes .	B)	1 hour
	C) .	30 seconds	D)	60 seconds.
144.	The	bending angle of fabric tested in Sh	irley i	fabric stiffness measurement is
	A)	41.5*	B) .	45'
	C)	46.5*	D)	47°.
145.	The	tension applied in the crimp measu	remer	nt of woollen yarn of 100 tex is
	A)	1 gm	B)	19 gm
	C)	16-5 gm	D)	3 gm.
146.		light weight applied in the measure IATRA method is	ment	of crimp rigidity of texturized yarns
	A) .	0·1 gm / denier		
	B)	0.002 gm / denier		
	C)	1 gm / denier	•	
	D)	10 gm / denier.		
147.	The	unit of mass of the cotton (continer	ntal)	counting system is
	A)	100 gm	B)	1 ounce
	C)	0.5 kg	D)	1 kg.
148.	The	Shirley fibre micronaire test require	s cott	on fibre weighing
	A)	50 gm	B)	1 kg
	C)	2.6 gm	D)	3·24 gm.
149.	The	speed of testing normally applied in	lea s	trength measurement is
	A)	100 mm / minute	B)	300 mm / minute
	C)	175 mm / minute	D)	1 metre / minute.
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	C)	Both are true	D)	(I) is false, but (II) is true.		
	A)	Both are false	B)	(I) is true, but (II) is false		
	Of th	ne statements :				
		at which the maximum stren		·		
•				the same count the twist per inch		
		which the maximum strengt				
			in coo	rser counts the twist per inch at		
155.		sider the following statements:	- ,	· · · · · · · · · · · · · · · · · · ·		
	C)	Count / √Twist per inch	D)	Twist per inch / √Count		
	A)	Count × √Twist per inch	B)	√Count × Twist per inch		
154.	54. In the English system for yarn count the formula for 'Twist factor' is					
	C)	increases and then decreases	D)	increases without limit.		
	A)	decreases	B)	does not change significantly		
153.	As ti	he amount of twist in a staple yarn	increa	ases, the strength of the yarn		
	C)	Shirley trash analyzer	D)	Instron tensile tester.		
,	A)	Lea strength tester	B)	Bursting strength tester		
152.	The	Wheatstone bridge electrical circui	t is ap	plied in		
	C)	10 kg / sec	D)	1 kg / sec.		
	A)	10 gms / sec	B)	1 kg / min		
151,	in s	telometer the fibres are loaded at t	he rate	e of		
	C)	unevenness percentage	D)	nep content percentage.		
	A)	uniformity percentage	B)	evenness percentage _		
150.	The	U% means		· ·		

- 156. As multi-filament yarns are twisted
 - A) the strength drops continuously
 - B) the strength first falls and then rises
 - C) the strength first rises and then falls
 - D) the strength rises continuously.
- 157. Some cotton fibres are said to be "Immature". This means that
 - A) the fibres are too short
 - B) the fibres lack strength
 - C) the fibres are too thick
 - D) the cell walls of the fibres are not complete.
- 158. If 'K₁' is the yarn cover factor from the warp and 'K₂' is the yarn cover factor from the west then the sabric cover factor is given by the formula

B)
$$K_1 + K_2 - \left(\frac{K_1 K_2}{28}\right)$$

D)
$$K_1 - K_2 + \left(\frac{K_1 K_2}{28}\right)$$

- 159. Yarn crimp (warp and weft) is defined as
 - A) ratio of fabric length to length of yarn in the fabric running in that direction
 - B) extent of shortening of a fabric in use
 - C) extent of shortening of a fabric on first wash
 - D) extent of change in the fabric on treating with live steam:
- 160. The continuing stretch of a fabric under a steady load is known as
 - A) creep

B) elastic stretch

C) shear

D) elastic recovery.

161.	Fabrics with long lengths of floating yarns are unstable. Stitching picks are used to stabilize such structures. The maximum float length without a stitching pick is									
	A)	thirty picks	B)	fifteen picks						
	C)	seven picks	D)	three picks.						
162.	Whi	Thich of the following weaves is most stable?								
,	A)	6-end twill weave	B }	plain weave						
	C)	mock leno weave	D)	gauze weave.						
163.	Con	sider the following statements :	,	·						
•		I. Bevel gears can change the d	irecti	on of rotation of shafts.						
		II. An epicyclic gear train can a shafts.	add o	or subtract the rotational speed of						
	Of t	he statements :								
	A)	Both are false	B)	(I) is true, but (II) is false						
	C)	(I) is false, but (II) is true	D)	Both are true.						
164.	An '	'edge cam" is	•							
-	A)	a cam with a sharp edge								
	B) a cam with tapered edges									
	C) a cam whose plane of rotation is parallel to the direction of motion of the follower									
	D) a cam whose plane of rotation is perpendicular to the direction of motion the follower.									
165.	Intro	oducing an extra 'Idler' gear into a ge	ar tra	nin						
	A) changes the speed and direction of the final gear									
-	B)	changes the speed but not the direct	ction	of the final gear						
	C)	does not change the speed but char	nges (the direction of the final gear						
	D)	does not change the speed or direction of the final gear.								
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- 166. "Simple Harmonic Motion" is a term used to define
 - A) motion where the acceleration is proportional to displacement
 - B) patterns of vibrations in a musical instrument
 - C) patterns of waves in liquid
 - D) the way in which the picker accelerates the shuttle.
- 167. The power that can be transmitted by a cone clutch of radius R_1 and R_2 , and coefficient of friction μ , where the plates are kept in contact with an axial force of W and cone angle 2α is

28

A)
$$\frac{2}{3}W\left(\frac{R_1^3-R_2^3}{R_1^2-R_2^2}\right)$$

B)
$$\frac{2}{3}\mu W\left(\frac{R_1^3 - R_2^3}{R_1^2 - R_2^2}\right)$$

C)
$$\frac{2}{3} \mu \alpha \left(\frac{R_1^3 - R_2^3}{R_1^2 - R_2^2} \right)$$

D)
$$\frac{2}{3} \mu W \operatorname{cosec} (\alpha) \left(\frac{R_1^3 - R_2^3}{R_1^2 - R_2^2} \right)$$

168. Consider the following statements:

When the sley's connecting arm length is reduced while keeping the crank radius unchanged

- I. the beat-up force increases
- II. the time for picking increases
- III. the wear and tear on the loom decreases.

Of the statements:

- A) (I) is true, but (II) & (III) are false B) (I) is false, but (II) & (III) are true
- C) (I) & (II) are true, but (III) is false D) (I) & (II) are false, but (III) is true.
- 169. An external block brake whose pivot is in line with the point of application of the normal reaction is
 - A) self-locking onto a clockwise rotating shaft
 - B) self-locking onto a counter clockwise rotating shaft
 - C) self-locking with both types of shafts
 - D) self-locking with neither type of shaft.

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170.		The kinetic energy in a rotating object of mass m , radius of gyration k and angular velocity ω is						
		$\frac{1}{2}$ m k^2 ω^2	B)	$\frac{1}{2} m \omega^2$ $\frac{1}{2} m^2 k^2 \omega^2.$				
	C)	$\frac{1}{2}$ m k^2	D)	$\frac{1}{2} m^2 k^2 \omega^2.$				
171. Cam surfaces are strengthened to enable them to resist frictional we treatment used is called								
	A)	Case hardening	B)	Bakelisation				
	C)	Anode polishing	D)	Plasma treatment.				
172.	The	feeler gauges used to set up a card	i, typi	cally have tolerances measured in				
; ;	A)	tenth of an inch	B)	hundredth of an inch				
	C)	thousandth of an inch	D)	ten thousandth of an inch.				
173.	173. Rotational balancing is an operation carried out on							
•	A)	cams	B)	gear wheels				
	C)	card cylinders	D)	ring frame tin rollers.				
174.	74. Tempering is a process that is applied to							
	A)	roving flyers	B)	card clothing wire				
	C)	cots and aprons	D)	nylon pickers in looms.				
175.	The	spacing of the drafting rollers is se	t to a	tolerance of a				
•	A)	millimetre	B)	tenth of a millimetre				
,	C)	hundredth of a millimetre	D)	thousandth of a millimetre.				
176. The grinding of card wire is carried out to								
•	A)							
*4	B)	polish off corroded outer layers						
	(C)	bring worn and broken points to a	unifo	orm height				
·	D)	adjust gap settings between differen	ent pa	arts.				

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- 177. The compressed air used to propel yarn in air jet looms must be dry because
 - A) water vapour will reduce the speed of the yarn
 - B) water will condense in the yarn and affect the beat-up operation
 - C) water vapour and atmospheric oxygen will corrode the compressed air tank and lines
 - D) adiabatic cooling in the jets will condense water droplets which will damage them.

178. Consider the following statements:

- I. The main advantages of single jet air-looms over multi-jet air-looms is the ability to weave a wider fabric and use a denser warp sheet.
- II. In a multi-jet air-loom the auxiliary jets consume most of the air.

Of the statements:

A) Both are true

- B) Both are false
- C) (I) is true, but (II) is false
- D) (I) is false, but (II) is true.
- 179. Air jet looms usually use air from an oil-free compressor. This is because
 - A) oil-free compressors give more air at higher pressure
 - B) oil droplets in the air damage the air jets and even stain the fabric
 - C) expanding air containing oil fumes is inflammable and explosive
 - D) the 'run-time' between maintenance of an oil-free compressor is longer than that of an ordinary compressor.

180. Consider the following statements:

- I. Air discharged into an open space slows to 4% of its initial speed at a distance of one and a half metres from the jet.
- II. When air is discharged into a confuser system it retains 14% to 23% of its initial speed at a distance of a metre and half from the jet (depending on the confuser diameter).

Of the statements:

A) Both are true

- B) Both are false
- C) (I) is true, but (II) is false
- D) (I) is false, but (II) is true.

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181.	. The typical pattern of air flow in an air jet loom is									
	A)	steady and laminar	B)	steady and turbulent						
	C)	unsteady and laminar	D)	unsteady and turbulent.						
182.		ing picking in an air jet loom the	typic	cal average tension and maximum						
	A)	3 gms and 20 gms	B)	6 gms and 30 gms						
:	C)	12 gms and 80 gms	D)	20 gms and 200 gms.						
183.	The	The primary purpose of Job Evaluation and Performance Rating is								
	A)	to find the best way of doing a job		,						
•	B)	to find the best worker doing the j	ob							
	C)	to determine how a job can be done better								
*	D)	to determine the pay ranges for various types of jobs.								
184.	84. Time Study allowances are classified as									
•	A)	Machine and Interference allowances								
B) Personal, Fatigue and Delay allowances C) Internal and External allowances										
									D)	Scheduled, Unscheduled and Unp
185.	185. When measuring frequencies of occurrence of various events over short periods, the data is best described in terms of									
	A)	Gaussian distributions	B)	Chi-square distributions						
	C)	Poisson's distributions	D)	F-distributions.						
,186.	The	two most commonly used methods	of ma	king a stopwatch time study are						
	A) .	the continuous method and the snap back method								
	B)	the multiwatch method and the in	terfere	ence free method						
	C)	the frequency method and the cycl	ić met	thod						
	D)	the basic time method and the allo	wance	e time method.						
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- 187. When combining the various variances that go up to make the total variance in a process, the proper procedure is to
 - A) add all the variances
 - B) take the N th root of the product of N variances
 - C) add the squares of the various variances and take the square root of the total
 - D) add the inverses of the various variances and invert the final total.
- 188. Resource allocation can be systematically undertaken by
 - A) R and \bar{x} charts
 - B) Linear programming and Network analysis
 - C) Motion time analysis
 - D) Job evaluation analysis.
- 189. The "ABC" model for Inventory Material Handling
 - A) classifies materials alphabetically and processes each letter in rotation with the same priority
 - B) divides materials into "fast", "medium" and "slow" moving classes and processes them with different priorities
 - C) divides the production lines into three sections and processes the material for each separately
 - D) divides materials into three classes according to safety of handling and prepares different rules to handle each.
- 190. In a mass production plant and a process plant, the ratio of supervisors to workers is about
 - A) 1:50 and 1:15

B) 1:30 and 1:20

C) 1:20 and 1:30

D) 1:15 and 1:50.

191.	The	he term "Balancing of Machinery" refers to						
	A)	the act of making sure that all the card cylinders are mechanically balanced						
	B)	making sure that at each stage of a process, the number of machines is sufficient to deal with the production of the previous stage						

- C) making sure that the electrical motors of the machines are balanced i.e. allocated equally between the 3 phases of the electric supply
- D) making sure that the machines allotted to the various tenders in each stage of the process is in balance with the number of works assigned to that stage.

192.	A	1960 s	2-head	blowing	room '	would	produce	sufficient	lap	for

A) 160 modern cards

B) 80 modern cards

C) 40 modern cards

D) 20 modern cards.

193. Ring rail guide bar is

- A) lubricated by solid lubricant
- B) lubricated by semi-solid lubricant
- C) lubricated by liquid lubricant
- D) not lubricated.

194. Which one of the following is solid lubricant?

A) Grease

B) Spindle oil

C) Steel wool

D) Graphite.

195. Which one of the following is not the method for calculating depreciation?

- A) Sinking fund method
- B) Internal Rate of Return method
- C) Reducing balance method
- D) Annuity method.

196. The reason for fitting condensers to older AC motors is to

- A) provide protection in cases of over-voltage
- B) improve the power factor of the motor
- C) prevent damage if the power is abruptly cut off
- D) allow the motors to run at constant speeds when the power flickers.

197. The purpose of Star / Delta connections for AC motors is

- A) to limit the starting current and thus prevent overheating of the motors
- B) allow the motors to rotate at constant speeds in spite of voltage variations
- C) to regulate the power factor, allowing high efficiency
- D) to allow the motors to start even when the line voltage is low.

198. Consider the following statements:

- Microprocessor based power control of electric motors can enable a motor to run at almost 100% power factor.
- II. Most modern textile machines use multiple motors and microprocessor based timing to coordinate them.

Of the statements:

A) Both are true

- B) (I) is true, but (II) is false
- C) (I) is false, but (II) is true
- D) Both are false.

199. The rating of a motor should be based on

- A) average load of the task
- B) maximum load of the task
- C) the speed of rotation required
- D) the range of power required.
- 200. The relative humidity range applied in carding room for processing man-made fibre is
 - A) 50 55%

B) 30 - 35%

C) 80 - 90%

D) 70 ~ 80%.