

National Testing Agency

Question Paper Name :	Refresher Course in Advances in Textile Engineering 21st Aug 2021 Shift 1
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Refresher Course in Advances in Textile Engineering

Group Number :	1
Group Id :	603489105
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Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	100
Is this Group for Examiner? :	No

Refresher Course in Advances in Textile Engineering-1

Section Id :	603489163
Section Number :	1
Section type :	Online

Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	603489290
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 6034897890 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

The fibre that belongs to second generation fibres is :

- 1. Nylon 66
- 2. Nylon 6
- 3. PET
- 4. Carbon

Options :
60348929535. 1
60348929536. 2
60348929537. 3
60348929538. 4

Question Number : 2 Question Id : 6034897891 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No
Correct Marks : 1 Wrong Marks : 0

The most suitable fibre for use in mooring ropes or fishing nets is :

1. High performance PE Gel fibre
2. Nomex Fibre
3. Kevlar fibre
4. PBO fibre

Options :

60348929539. 1

60348929540. 2

60348929541. 3

60348929542. 4

Question Number : 3 Question Id : 6034897892 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The value of the optimum number of entanglements per chain, in the gel spinning of ultra-high molecular polyethylene is :

1. 100
2. 10
3. 2
4. 1

Options :

60348929543. 1

60348929544. 2

60348929545. 3

60348929546. 4

Question Number : 4 Question Id : 6034897893 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In the context of Gel spinning of ultrahigh molecular weight PE, the critical concentration

1. Decreases with increase in molecular weight of polymer
2. Increases with increase in molecular weight of the polymer
3. Decreases with increase in entanglement molecular weight of the polymer
4. Does not depend upon the molecular weight of the polymer

Options :

60348929547. 1

60348929548. 2

60348929549. 3

60348929550. 4

Question Number : 5 Question Id : 6034897894 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

With respect to the structure of high performance Kevlar fibres, the INCORRECT statement, among the following is :

1. Rigid polymer chains
2. Strong chemical bonds in main chain
3. Ultra-high molecular weight and carbon-carbon bonds in the main chain
4. Inter molecular hydrogen bonding

Options :

60348929551. 1

60348929552. 2

60348929553. 3

60348929554. 4

Question Number : 6 Question Id : 6034897895 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Meta phenylenediamine is a monomer for production of :

1. Kevlar
2. Nomex
3. Poly benzoxazole
4. PIPD or M5

Options :

60348929555. 1

60348929556. 2

60348929557. 3

60348929558. 4

Question Number : 7 Question Id : 6034897896 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The solvent used for spinning/production of Kevlar fibres is:

1. 70% sulphuric acid
2. 80% sulphuric acid
3. 98% sulphuric acid
4. 100% sulphuric acid

Options :

60348929559. 1

60348929560. 2

60348929561. 3

60348929562. 4

Question Number : 8 Question Id : 6034897897 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The fibre that shows highest compressive strength is:

1. Kevlar
2. Nomex
3. PIPD (M5)
4. PBO

Options :

60348929563. 1

60348929564. 2

60348929565. 3

60348929566. 4

Question Number : 9 Question Id : 6034897898 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The transition temperature of the temperature responsive polymers can be decreased by:

1. Increasing the ratio of hydrophilic to hydrophobic groups
2. Decreasing the ratio of hydrophilic to hydrophobic groups
3. Increasing the molecular weight of the polymer
4. Decreasing the molecular weight of the polymer

Options :

60348929567. 1

60348929568. 2

60348929569. 3

60348929570. 4

Question Number : 10 Question Id : 6034897899 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The magnitude of response or equilibrium swelling % of the structures made from a temperature-responsive polymer will be largest in

1. Films of 100 micron thickness
2. Films of 50 micron thickness
3. Fibres of 100 micron thickness
4. Fibres 50 micron thickness

Options :

60348929571. 1

60348929572. 2

60348929573. 3

60348929574. 4

Question Number : 11 Question Id : 6034897900 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The DNA molecule has a diameter in the range of

1. 2-3 nm
2. 10-20 nm
3. 100-200 nm
4. 30-50 nm

Options :

60348929575. 1

60348929576. 2

60348929577. 3

60348929578. 4

Question Number : 12 Question Id : 6034897901 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following scientists used the term 'Nanotechnology' for the first time?

1. Eric Drexler
2. Norio Taniguchi
3. Richard Feynman
4. S Ijima

Options :

60348929579. 1

60348929580. 2

60348929581. 3

60348929582. 4

Question Number : 13 Question Id : 6034897902 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Nanoparticles of silver and gold show bright colours which change with shape and size due to

1. Change in chemical composition
2. Quantum Confinement
3. Surface Plasmon Resonance
4. Photoluminescence

Options :

60348929583. 1

60348929584. 2

60348929585. 3

60348929586. 4

Question Number : 14 Question Id : 6034897903 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following nanoparticles is used to impart self cleaning property to textiles?

1. Zinc oxide
2. Copper
3. Silver
4. Titanium dioxide

Options :

60348929587. 1

60348929588. 2

60348929589. 3

60348929590. 4

Question Number : 15 Question Id : 6034897904 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Zinc Oxide nanoparticle coating imparts UV protection to textiles due to which one of the following properties?

1. Wide Band gap
2. Small Band gap
3. Zero Band gap
4. None of the above

Options :

60348929591. 1

60348929592. 2

60348929593. 3

60348929594. 4

Question Number : 16 Question Id : 6034897905 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following nanoparticles shows photoluminescence?

1. Carbon Nanotube
2. Graphene
3. Quantum Dot
4. Nanoclay

Options :

60348929595. 1

60348929596. 2

60348929597. 3

60348929598. 4

Question Number : 17 Question Id : 6034897906 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Nanocoating on textile substrates can be done using which one of the following techniques?

1. Arc Discharge
2. Laser Ablation
3. Chemical Vapour Deposition
4. Layer by Layer deposition

Options :

60348929599. 1

60348929600. 2

60348929601. 3

60348929602. 4

Question Number : 18 Question Id : 6034897907 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

During electrospinning, beaded nanofibers are formed when there is

1. High Polymer Solution concentration
2. Low Polymer Solution concentration
3. High Polymer Molecular weight
4. High Viscosity of polymer solution

Options :

60348929603. 1

60348929604. 2

60348929605. 3

60348929606. 4

Question Number : 19 Question Id : 6034897908 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In Quantum Dots, as the size increases, the following change in optical property is seen

1. Blue Shift
2. White Shift
3. Red Shift
4. Black Shift

Options :

60348929607. 1

60348929608. 2

60348929609. 3

60348929610. 4

Question Number : 20 Question Id : 6034897909 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Silver nanoparticles can be prepared in the laboratory starting from silver salt using which one of the following techniques?

1. Chemical reduction
2. Chemical oxidation
3. Photochemical oxidation
4. Redox reaction

Options :

60348929611. 1

60348929612. 2

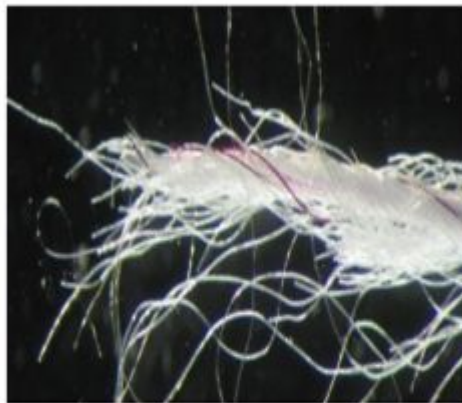
60348929613. 3

60348929614. 4

Question Number : 21 Question Id : 6034897910 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The broken ends of spun yarn is given below. Name the type of broken end



1. Sharp broken end
2. Tapered broken end
3. Slipped broken end
4. Undulated broken end

Options :

60348929615. 1

60348929616. 2

60348929617. 3

60348929618. 4

Question Number : 22 Question Id : 6034897911 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Compared to static tensile test performed on an Instron tensile tester, the dynamic tensile test results of spun yarns have

1. Lower proportion of fibre break, longer failure zone length and lesser proportion of sharp broken yarn ends
2. Lower proportion of fibre break, shorter failure zone length and larger proportion of sharp broken yarn ends
3. Higher proportion of fibre break, longer failure zone length and larger proportion of sharp broken yarn ends
4. None of the above

Options :

60348929619. 1

60348929620. 2

60348929621. 3

60348929622. 4

Question Number : 23 Question Id : 6034897912 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

What is the length of weakest link in a spun yarn before break when the yarn extension at break is 20% with the measured failure zone length after break is 10 mm?

1. 10 mm
2. 5.2 mm
3. 8.3 mm
4. 9.1 mm

Options :

60348929623. 1

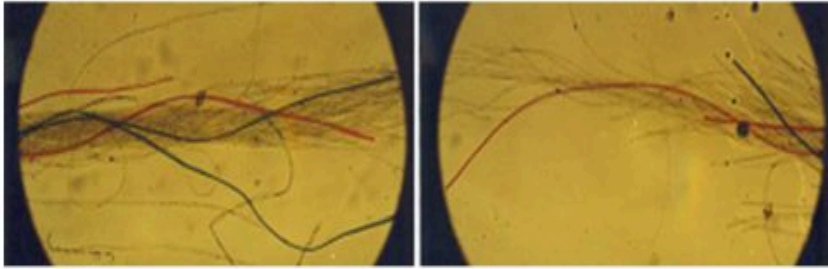
60348929624. 2

60348929625. 3

Question Number : 24 Question Id : 6034897913 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The photographs of broken ends of spun yarn are shown below. What is the percentage of slipped fibres in the yarn?



1. 75
2. 50
3. 80
4. 25

Options :

60348929627. 1

60348929628. 2

60348929629. 3

60348929630. 4

Question Number : 25 Question Id : 6034897914 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

What is the axial stress (cN/cm^2) on fibre in a spun yarn at a distance of 10 mm from its end when the yarn is under tension? Assume that the fibre -to -fibre friction coefficient is 0.2, lateral stress on the fibre is $X \text{ cN/cm}^2$ and the diameter of the fibre is $4 \times 10^{-4} \text{ cm}$.

1. $200X$
2. $150X$
3. $100X$
4. $50X$

Options :

- 60348929631. 1
- 60348929632. 2
- 60348929633. 3
- 60348929634. 4

Question Number : 26 Question Id : 6034897915 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

During tensile failure of PV spun yarns, which yarn always exhibits catastrophic failure when tested at low speed?

- 1. Rotor
- 2. Airjet
- 3. Ring
- 4. None of the above

Options :

- 60348929635. 1
- 60348929636. 2
- 60348929637. 3
- 60348929638. 4

Question Number : 27 Question Id : 6034897916 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which yarn is most compact?

- 1. Ring
- 2. Airjet
- 3. OE friction
- 4. Rotor

Options :

- 60348929639. 1

60348929640. 2

60348929641. 3

60348929642. 4

Question Number : 28 Question Id : 6034897917 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Higher yarn tenacity can be obtained when a yarn is tested at

1. Longer gauge length with slow rate of extension
2. Longer gauge length with high rate of extension
3. Shorter gauge length with slow rate of extension
4. With shorter gauge length and high rate of extension

Options :

60348929643. 1

60348929644. 2

60348929645. 3

60348929646. 4

Question Number : 29 Question Id : 6034897918 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Among the pairs given below, pick the related ones

1. Dynamic tenacity : Longer failure zone length
2. Lowest static tenacity : Fabric strength
3. Highest static tenacity : Weavability
4. Average static tenacity : Warping behaviour of yarn

Options :

60348929647. 1

60348929648. 2

60348929649. 3

60348929650. 4

Question Number : 30 Question Id : 6034897919 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Maximum axial stress on a fibre in a spun yarn under extension depends on

1. Length and shape of fibres
2. Breaking strength and shape of fibres
3. Fibre to fibre friction, length of fibre and breaking strength of fibre
4. Shape and rigidity of fibres

Options :

60348929651. 1

60348929652. 2

60348929653. 3

60348929654. 4

Question Number : 31 Question Id : 6034897920 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

At any given point of time after the steady state is reached, the linear density of fibre layer in the rotor groove is

1. Uniform through out the circumference of the rotor
2. Coarsest at the peel-off point and thins down, moving away from peel-off point
3. Finest at the peel-off point and thickens, moving away from peel-off point
4. Fluctuating along the rotor circumference

Options :

60348929655. 1

60348929656. 2

60348929657. 3

60348929658. 4

Question Number : 32 Question Id : 6034897921 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Higher the Blending Delay Time means

1. Slower is the production rate
2. Fibre tufts move at faster rate between the machines
3. Poor blending of fibres
4. More uniform blending of fibres

Options :

60348929659. 1

60348929660. 2

60348929661. 3

60348929662. 4

Question Number : 33 Question Id : 6034897922 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The purpose in providing curved portion at the bottom of each chamber in Unimix is

1. For smooth transfer of fibre tufts
2. To reduce nep formation
3. The change the pathlengths for each chamber
4. To remove short fibres

Options :

60348929663. 1

60348929664. 2

60348929665. 3

60348929666. 4

Question Number : 34 Question Id : 6034897923 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following statement is correct about BDT?

1. It increases with the mass flow rate
2. It increases with increase in number of chambers
3. It decreases with increase in number of chambers
4. It increases with opening roller speed

Options :

60348929667. 1

60348929668. 2

60348929669. 3

60348929670. 4

Question Number : 35 Question Id : 6034897924 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In blending machines, in comparison to the weighing hopper system, the metering system

1. Decreases the level of impurities
2. Improves the longitudinal blend uniformity
3. Improves the cross-sectional blend uniformity
4. Decreases the nep content

Options :

60348929671. 1

60348929672. 2

60348929673. 3

60348929674. 4

Question Number : 36 Question Id : 6034897925 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Degree of mixing value 1.5, means

1. Random blending
2. Poor blending
3. Close to perfect blending
4. None of the above

Options :

60348929675. 1

60348929676. 2

60348929677. 3

60348929678. 4

Question Number : 37 Question Id : 6034897926 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Degree of mixing gives idea about

1. Transverse blend uniformity
2. Longitudinal blend uniformity
3. Short-term blend uniformity
4. Long-term blend uniformity

Options :

60348929679. 1

60348929680. 2

60348929681. 3

60348929682. 4

Question Number : 38 Question Id : 6034897927 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In rotor spinning, the influence of cyclic aggregation of fibres in the rotor groove is to

1. Decrease the yarn hairiness
2. Improve the yarn evenness
3. Improve the twist flow
4. None of the above

Options :

60348929683. 1

60348929684. 2

60348929685. 3

60348929686. 4

Question Number : 39 Question Id : 6034897928 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In rotor spinning, cyclic aggregation means

1. Rotation of Rotor in cycles
2. Tuft opening in Opening roller in cycles
3. Fibres passing the Fibre transport Channel in cycles
4. Collection of fibre layers in Rotor groove in cycles

Options :

60348929687. 1

60348929688. 2

60348929689. 3

60348929690. 4

Question Number : 40 Question Id : 6034897929 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Doffing tube novels with grooves are used for

1. Improving the evenness of the yarn
2. Providing false twist in the yarn arm
3. Providing real twist in the yarn arm
4. Increasing the twist density in the final yarn

Options :

60348929691. 1

60348929692. 2

60348929693. 3

60348929694. 4

Question Number : 41 Question Id : 6034897930 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

According to Vanwyk, the number of times that a spherical particle of diameter (D) strikes fibers of the same diameter with length (L) that travels a distance of height (V), can be expressed in terms of

1. $\pi LD/(2V)$
2. LD/V
3. V/LD
4. $(2V)/\pi LD$

Options :

60348929695. 1

60348929696. 2

60348929697. 3

60348929698. 4

Question Number : 42 Question Id : 6034897931 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The ratio of the number of fibre-fibre contacts in the mesodomain in three dimensions to the corresponding fibre-fibre contacts in two dimensions is

1. $\pi/8$
2. $\pi/2$
3. π
4. $\pi/4$

Options :

60348929699. 1

60348929700. 2

60348929701. 3

60348929702. 4

Question Number : 43 Question Id : 6034897932 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following methods is NOT encapsulated in Vanwyk's model of compressibility?

1. Stereological approach
2. Geometrical probability approach
3. Beam bending theory
4. Finite element method

Options :

60348929703. 1

60348929704. 2

60348929705. 3

60348929706. 4

Question Number : 44 Question Id : 6034897933 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

What do the planar fibers refer to with regard to the spherical coordinate system?

1. A majority of fibers that have 90° out-of-plane orientation angle
2. A small proportion of fibers that have 90° out-of-plane orientation angle
3. A majority of fibers that have 0° out-of-plane orientation angle
4. A small proportion of fibers that have 0° out-of-plane orientation angle

Options :

60348929707. 1

60348929708. 2

60348929709. 3

60348929710. 4

Question Number : 45 Question Id : 6034897934 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A fibre of length of 2 mm is projected on the XZ and YZ planes such that 45° angle is made on each of the planes with respect to the z-axis. The fibre length (mm) projected on the XY plane is nearly

1. 0.63
2. 1.63
3. 1.87
4. 2

Options :

60348929711. 1

60348929712. 2

60348929713. 3

60348929714. 4

Question Number : 46 Question Id : 6034897935 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

According to Cavalieri's Principle, the principle states that the volumes of two solids contained between parallel planes are equal in three dimensions, if the planar cross-sections

1. Parallel to and at the same distance from a given plane have equal areas
2. Parallel to and at the same distance from a given plane have unequal areas
3. Perpendicular to and at the same distance from a given plane have unequal areas
4. Perpendicular to and at the same distance from a given plane have equal areas

Options :

60348929715. 1

60348929716. 2

60348929717. 3

60348929718. 4

Question Number : 47 Question Id : 6034897936 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A textile engineer wishes to predict the thickness of polypropylene-based random fibrous assembly having the same porosity and mass per unit area as that of the corresponding polyester (Fibre density = 1.38 g/cm^3) material. Considering the thickness of the polyester fibrous assembly is 4.1 mm, the thickness (mm) of the polypropylene (Fibre density = 0.91 g/cm^3) fibrous assembly should be

1. 4.2
2. 5.2
3. 6.2
4. 8.2

Options :

60348929719. 1

60348929720. 2

60348929721. 3

60348929722. 4

Question Number : 48 Question Id : 6034897937 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is beyond the current knowledge of theory of fibre-fibre contacts?

1. Predicting mechanical properties of disordered fibrous materials
2. Predicting electrical properties of disordered fibrous materials
3. Predicting wetting properties of disordered fibrous materials
4. Pruning the number and type of contacts in the network

Options :

60348929723. 1

60348929724. 2

60348929725. 3

60348929726. 4

Question Number : 49 Question Id : 6034897938 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A random fibrous assembly made up of polypropylene fiber of diameter $30\text{ }\mu\text{m}$ has been compressed by 60% strain in a confined container. Neglecting any changes caused by the sides of the container, what is the mean distance between the fiber-fiber contacts under an uncompressed state in μm when the compressed fiber volume fraction is 10%?

1. 150
2. 375
3. 550
4. 590

Options :

60348929727. 1

60348929728. 2

60348929729. 3

60348929730. 4

Question Number : 50 Question Id : 6034897939 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Fiber A with defined orientation characteristics $(\frac{\pi}{2}, \varphi)$ comes in contact with Fiber B with defined orientation characteristics $(\frac{\pi}{2}, \varphi')$. Assuming φ and φ' are the in-plane orientation angles of fiber A and B, respectively. The angle formed between the axes of fibers A and B is χ , then the relationship between $\sin \chi$ is given by

1. $\sin (\varphi - \varphi')$
2. $\cot (\varphi - \varphi')$
3. $\cos (\varphi - \varphi')$
4. $\tan (\varphi - \varphi')$

Options :

60348929731. 1

60348929732. 2

60348929733. 3

60348929734. 4

Question Number : 51 Question Id : 6034897940 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

3D woven Honeycomb structure is most suitable material for aerospace applications because

1. Its specific mass is very high
2. It has excellent in-plane mechanical properties
3. It is an excellent energy absorbent structure
4. Honeycomb give negative Poisson's ratio

Options :

60348929735. 1

60348929736. 2

60348929737. 3

60348929738. 4

Question Number : 52 Question Id : 6034897941 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A leno fabric is considered most suitable structure for aerostat application, because

1. It is a solid structure with high flexural rigidity
2. It is a hollow 3D structure
3. It gives very high tensile modulus
4. Leno is a porous structure with high strength per unit mass

Options :

60348929739. 1

60348929740. 2

60348929741. 3

60348929742. 4

Question Number : 53 Question Id : 6034897942 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Use of fillers in composite processing may not help to improve

1. Water resistance
2. Surface smoothness
3. Dimensional stability
4. Tensile strength

Options :

60348929743. 1

60348929744. 2

60348929745. 3

60348929746. 4

Question Number : 54 Question Id : 6034897943 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following is a composite material present in nature?

1. Wood
2. Aluminium
3. Polyester
4. Water

Options :

60348929747. 1

60348929748. 2

60348929749. 3

60348929750. 4

Question Number : 55 Question Id : 6034897944 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Specific modulus is defined as the ratio between the Young's modulus and the

1. Density of the material
2. Mass of the material
3. Volume of the material
4. Extension of the material

Options :

60348929751. 1

60348929752. 2

60348929753. 3

60348929754. 4

Question Number : 56 Question Id : 6034897945 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In filament winding based composite processing, increase in angle of wind

1. Increases radial and axial compression load
2. Decreases radial and axial compression load
3. Decreases radial and increases axial compression load
4. Increases radial and decreases axial compression load

Options :

60348929755. 1

60348929756. 2

60348929757. 3

60348929758. 4

Question Number : 57 Question Id : 6034897946 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

For prototype and short production runs, the most preferred composite manufacturing process would be

1. Vacuum Infusion Processing
2. Resin Transfer Molding
3. Hand lay up process
4. Compression Molding

Options :

60348929759. 1

60348929760. 2

60348929761. 3

60348929762. 4

Question Number : 58 Question Id : 6034897947 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In textile structural composites, the most important factor for resin impregnation is

1. Total fiber volume fraction of reinforcement structure
2. Distribution of fiber volume among warp, filling and Z directions
3. Straightness and alignment of fibers in all three directions
4. Consideration of crimp in the structure

Options :

60348929763. 1

60348929764. 2

60348929765. 3

60348929766. 4

Question Number : 59 Question Id : 6034897948 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A 3D woven composite preform is considered superior to its 2D woven counterpart because of

1. High fibre volume fraction
2. High strength
3. Low crimp
4. Better through thickness property

Options :

60348929767. 1

60348929768. 2

60348929769. 3

60348929770. 4

Question Number : 60 Question Id : 6034897949 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which one of the following structures CANNOT be a 3D structure?

1. Honeycomb structure
2. Leno structure
3. Profiled structure
4. Angle interlock

Options :

60348929771. 1

60348929772. 2

60348929773. 3

60348929774. 4

Question Number : 61 Question Id : 6034897950 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Colours used in inkjet printing are known as

1. Dot colours
2. Spot colours
3. Spotted colours
4. Process colours

Options :

60348929775. 1

60348929776. 2

60348929777. 3

60348929778. 4

Question Number : 62 Question Id : 6034897951 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Fabrics that CANNOT be printed by reactive ink are

1. Cotton
2. Silk
3. Polyester
4. Wool

Options :

60348929779. 1

60348929780. 2

60348929781. 3

60348929782. 4

Question Number : 63 Question Id : 6034897952 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Drop-on-demand thermal technology is NOT suitable for

1. Pigment inks
2. Water based inks
3. Disperse inks
4. Acid inks

Options :

60348929783. 1

60348929784. 2

60348929785. 3

60348929786. 4

Question Number : 64 Question Id : 6034897953 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The operating frequency of continuous inkjet printing technology

1. Is lower than that of drop-on-demand inkjet technology
2. Is higher than that of drop-on-demand inkjet technology
3. Is equal to that of drop-on-demand inkjet technology
4. Can be higher or lower to that of drop-on-demand inkjet technology depending on the nature of the ink being used for printing

Options :

60348929787. 1

60348929788. 2

60348929789. 3

60348929790. 4

Question Number : 65 Question Id : 6034897954 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

For a 300 dpi resolution, the distance (μm) between the center of the dots is nearly

1. 20
2. 40
3. 60
4. 80

Options :

60348929791. 1

60348929792. 2

60348929793. 3

60348929794. 4

Question Number : 66 Question Id : 6034897955 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The delay in the formation of a stable drop on restarting of inkjet printing machines is called

1. Potency
2. Latency
3. Jet instability
4. Satellite drop time

Options :

60348929795. 1

60348929796. 2

60348929797. 3

60348929798. 4

Question Number : 67 Question Id : 6034897956 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In the context of monochromatic digital printing, if the drop size is decreased keeping resolution the same, the perceived colour, as compared to the previous one will be

1. Lighter
2. Darker
3. The same
4. Lighter or darker based on the lighting condition

Options :

60348929799. 1

60348929800. 2

60348929801. 3

60348929802. 4

Question Number : 68 Question Id : 6034897957 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a 6x6 matrix resolution, the maximum number of grey levels that can be produced by a single colour is

- 1. 35
- 2. 36
- 3. 37
- 4. 38

Options :

60348929803. 1

60348929804. 2

60348929805. 3

60348929806. 4

Question Number : 69 Question Id : 6034897958 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

One inkjet printhead contains 200 nozzles. If each nozzle delivers 20 pL drop at 20000 drops per second, the ink consumed (L) by this printhead per hour is

- 1. 0.0144
- 2. 0.144
- 3. 0.0288
- 4. 0.288

Options :

60348929807. 1

60348929808. 2

60348929809. 3

60348929810. 4

Question Number : 70 Question Id : 6034897959 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The per cent change in Reynold number (R_e) on doubling both the printhead nozzle diameter and the velocity of the ink flow, while keeping the other parameter the same, will be

1. 200
2. 300
3. 400
4. 500

Options :

60348929811. 1

60348929812. 2

60348929813. 3

60348929814. 4

Question Number : 71 Question Id : 6034897960 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Essential oils can be used in textile finishing as

1. Flame retardant agents
2. Stiffening agents
3. Antibacterial agents
4. Cross-linking agents

Options :

60348929815. 1

60348929816. 2

60348929817. 3

60348929818. 4

Question Number : 72 Question Id : 6034897961 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which among the following is CORRECT?

1. Both the chitin and chitosan have equal antimicrobial effect
2. Chitosan has better antimicrobial efficacy than chitin
3. Chitin has better antimicrobial effect than chitosan
4. Chitin and chitosan are active only against Gram-positive bacteria

Options :

60348929819. 1

60348929820. 2

60348929821. 3

60348929822. 4

Question Number : 73 Question Id : 6034897962 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Azadirachtin is an active bioactive component presents in

1. Aloe vera gel
2. Tulsi leaf
3. Pomegranate rind
4. Neem seed

Options :

60348929823. 1

60348929824. 2

60348929825. 3

60348929826. 4

Question Number : 74 Question Id : 6034897963 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Chitosan in acidic pH, possesses

1. Negative charge
2. Positive charge
3. Zwitterion
4. No charge

Options :

60348929827. 1

60348929828. 2

60348929829. 3

60348929830. 4

Question Number : 75 Question Id : 6034897964 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Lipopolysaccharide layer is:

1. present in Gram-positive bacteria
2. present in Gram-negative bacteria
3. present in both the Gram-positive and Gram-negative bacteria
4. absent in both the Gram-positive and Gram-negative bacteria

Options :

60348929831. 1

60348929832. 2

60348929833. 3

60348929834. 4

Question Number : 76 Question Id : 6034897965 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Green coconut shell extract for flame retardant cotton,

1. Acts in gas phase mechanism
2. Physically coats the cotton and restricts oxygen penetration
3. Acts in condensed phase mechanism
4. Enhances the pyrolysis temperature of cotton

Options :

60348929835. 1

60348929836. 2

60348929837. 3

60348929838. 4

Question Number : 77 Question Id : 6034897966 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The extent of toxicity of tannins against bacteria mainly depends on

1. Number and arrangement of OH groups present in the phenolic ring
2. The easiness of dehydration ability of the OH groups
3. Number and arrangement of -NH₂ groups present in the phenolic ring
4. Tannins are not at all toxic against bacteria

Options :

60348929839. 1

60348929840. 2

60348929841. 3

60348929842. 4

Question Number : 78 Question Id : 6034897967 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Cross-linking of cotton with citric acid can be assessed by

1. UV-vis spectrophotometer
2. TGA analysis
3. FTIR analysis
4. Electron microscope

Options :

60348929843. 1

60348929844. 2

60348929845. 3

60348929846. 4

Question Number : 79 Question Id : 6034897968 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Lignosulphonate can be used for textile finishing as

1. Anti-crease agent
2. Softening agent
3. Water-repellent agent
4. Flame retardant agent

Options :

60348929847. 1

60348929848. 2

60348929849. 3

60348929850. 4

Question Number : 80 Question Id : 6034897969 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The chance of bacterial growth is maximum in case of

1. Cotton
2. PET
3. PP
4. Both PET and PP

Options :

60348929851. 1

60348929852. 2

60348929853. 3

60348929854. 4

Question Number : 81 Question Id : 6034897970 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In ATR-FTIR spectroscopy,

1. IR light is transmitted through the sample
2. IR light is internally reflected from the surface of the sample
3. IR light is mixed with the sample
4. IR light is emitted from the sample

Options :

60348929855. 1

60348929856. 2

60348929857. 3

60348929858. 4

Question Number : 82 Question Id : 6034897971 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

FTIR uses

1. Electron beam
2. X-ray beam
3. IR Light beam
4. Visible light beam

Options :

60348929859. 1

60348929860. 2

60348929861. 3

60348929862. 4

Question Number : 83 Question Id : 6034897972 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

ATR-FTIR technique is NOT suitable for

1. Surface chemical analysis of a solid sample
2. Chemical analysis of a liquid sample
3. Surface irregularities of the sample
4. Vibrational state analysis of a sample

Options :

60348929863. 1

60348929864. 2

60348929865. 3

60348929866. 4

Question Number : 84 Question Id : 6034897973 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Full form of RAMAN spectroscopy is

1. Radiation Attenuated Morphed Analysis of Nucleous
2. Radiation Attained Manual Analysis of Nature
3. Remitted Analysis of Migrated Atomic Nature
4. Has no full form

Options :

60348929867. 1

60348929868. 2

60348929869. 3

60348929870. 4

Question Number : 85 Question Id : 6034897974 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

RAMAN spectroscopy

1. Uses weak light source
2. Is not sensitive to water
3. Uses strong x-ray beam
4. Is sensitive to water

Options :

60348929871. 1

60348929872. 2

60348929873. 3

60348929874. 4

Question Number : 86 Question Id : 6034897975 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A Raman active molecule

1. Has no vibrations
2. Has polarization, which changes with vibrations of the bonds
3. Has polarization which is high, but constant
4. Has no polarization in electric field

Options :

60348929875. 1

60348929876. 2

60348929877. 3

60348929878. 4

Question Number : 87 Question Id : 6034897976 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

XPS is used for

1. Surface chemical analysis of a solid sample
2. Bulk chemical analysis of a solid sample
3. Chemical analysis of a liquid sample
4. Chemical analysis of gaseous sample

Options :

60348929879. 1

60348929880. 2

60348929881. 3

60348929882. 4

Question Number : 88 Question Id : 6034897977 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Scanning electron microscope uses

1. An electron beam
2. A strong laser laser
3. A coherent x-ray beam
4. A photoemission beam

Options :

60348929883. 1

60348929884. 2

60348929885. 3

60348929886. 4

Question Number : 89 Question Id : 6034897978 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In XPS

1. Sample is placed on a diamond crystal for surface analysis
2. X-ray beam is passed through the sample to record absorption
3. IR radiations are produced, which are analysed
4. Photoelectrons are emitted, which are then analysed

Options :

60348929887. 1

60348929888. 2

60348929889. 3

60348929890. 4

Question Number : 90 Question Id : 6034897979 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

SEM is

1. Transmission Electron Microscope
2. Surface Electron Microscope
3. Scanning Electron Microscope
4. Secondary Electron Microscope

Options :

60348929891. 1

60348929892. 2

60348929893. 3

60348929894. 4

Question Number : 91 Question Id : 6034897980 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The ratio of diameters of two polyester filaments of circular cross-section is 1.5. The ratio of deniers of these two filaments will be approximately

1. 1.22
2. 2.25
3. 3.25
4. 4.50

Options :

60348929895. 1

60348929896. 2

60348929897. 3

60348929898. 4

Question Number : 92 Question Id : 6034897981 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The correct combination, amongst the following, in KESF and FAST systems, used to evaluate same low stress mechanical characteristics of fabric, is

1. KESF-2 and FAST-2
2. KESF-1 and FAST-2
3. KESF-2 and FAST-3
4. KESF-3 and FAST-1

Options :

60348929899. 1

60348929900. 2

60348929901. 3

60348929902. 4

Question Number : 93 Question Id : 6034897982 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A yarn has mean strength of 12 g/tex with a standard deviation of 1.5 g/tex. Considering the 't' value at 99% confidence level is 2.58, *what is the number of tests that must be conducted so that at 99% confidence level, the maximum error in the estimated mean strength is 2.0%?*

1. 144
2. 169
3. 225
4. 260

Options :

60348929903. 1

60348929904. 2

60348929905. 3

60348929906. 4

Question Number : 94 Question Id : 6034897983 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The usual unit of water vapour permeability is

1. g/ m²/day
2. cc/m²/day
3. g/ m/m
4. l/ m/day

Options :

60348929907. 1

60348929908. 2

60348929909. 3

60348929910. 4

Question Number : 95 Question Id : 6034897984 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The correct statement amongst the following for KESF-2 is

1. Bending rigidity (B) is slope between $\pm 2.5 \text{ cm}^{-1}$ curvature
2. Bending rigidity (B) is slope between 0.5 cm^{-1} and 1.5 cm^{-1} curvature
3. Bending hysteresis (2HB) is measured at $\pm 5 \text{ cm}^{-1}$ curvature
4. Bending hysteresis (2HB) is measured at $\pm 2.5 \text{ cm}^{-1}$ curvature

Options :

60348929911. 1

60348929912. 2

60348929913. 3

60348929914. 4

Question Number : 96 Question Id : 6034897985 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In case of single plate Togmeter, which of the following statement is TRUE?

1. It is not necessary to take the air temperature into account
2. It is not necessary to perform a bare plate test to measure the thermal insulation of air
3. The insulation of fabric is calculated by subtracting insulation of air
4. The insulation of fabric is calculated by adding the insulation of air

Options :

60348929915. 1

60348929916. 2

60348929917. 3

60348929918. 4

Question Number : 97 Question Id : 6034897986 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Following is the example of non-Statistical sampling

1. Stratified sampling
2. Judgmental sampling
3. Cluster sampling
4. Block sampling

Options :

60348929919. 1

60348929920. 2

60348929921. 3

60348929922. 4

Question Number : 98 Question Id : 6034897987 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The mass CV of card sliver is 3% and number of doubling at draw-frame is 6. If mass CV added at both drawframe and speed frame is 2%, the mass CV (%) of roving will be approximately

- 1. 1.07
- 2. 1.65
- 3. 2.05
- 4. 3.08

Options :

60348929923. 1

60348929924. 2

60348929925. 3

60348929926. 4

Question Number : 99 Question Id : 6034897988 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If the Standard error of the means (S.E.) of Yarn A is 3 and the Standard error of the means (S.E.) of Yarn B is 4, then the Standard error of the difference between the means (S.E. _{diff}) will be, approximately,

- 1. 3
- 2. 4
- 3. 5
- 4. 6

Options :

60348929927. 1

60348929928. 2

60348929929. 3

60348929930. 4

Question Number : 100 Question Id : 6034897989 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If the 2.5% span length of a cotton fibre is 45 mm and the uniformity ratio is 45%, then 50% span length in mm is, approximately,

1. 10.24
2. 15.28
3. 20.25
4. 22.50

Options :

60348929931. 1

60348929932. 2

60348929933. 3

60348929934. 4