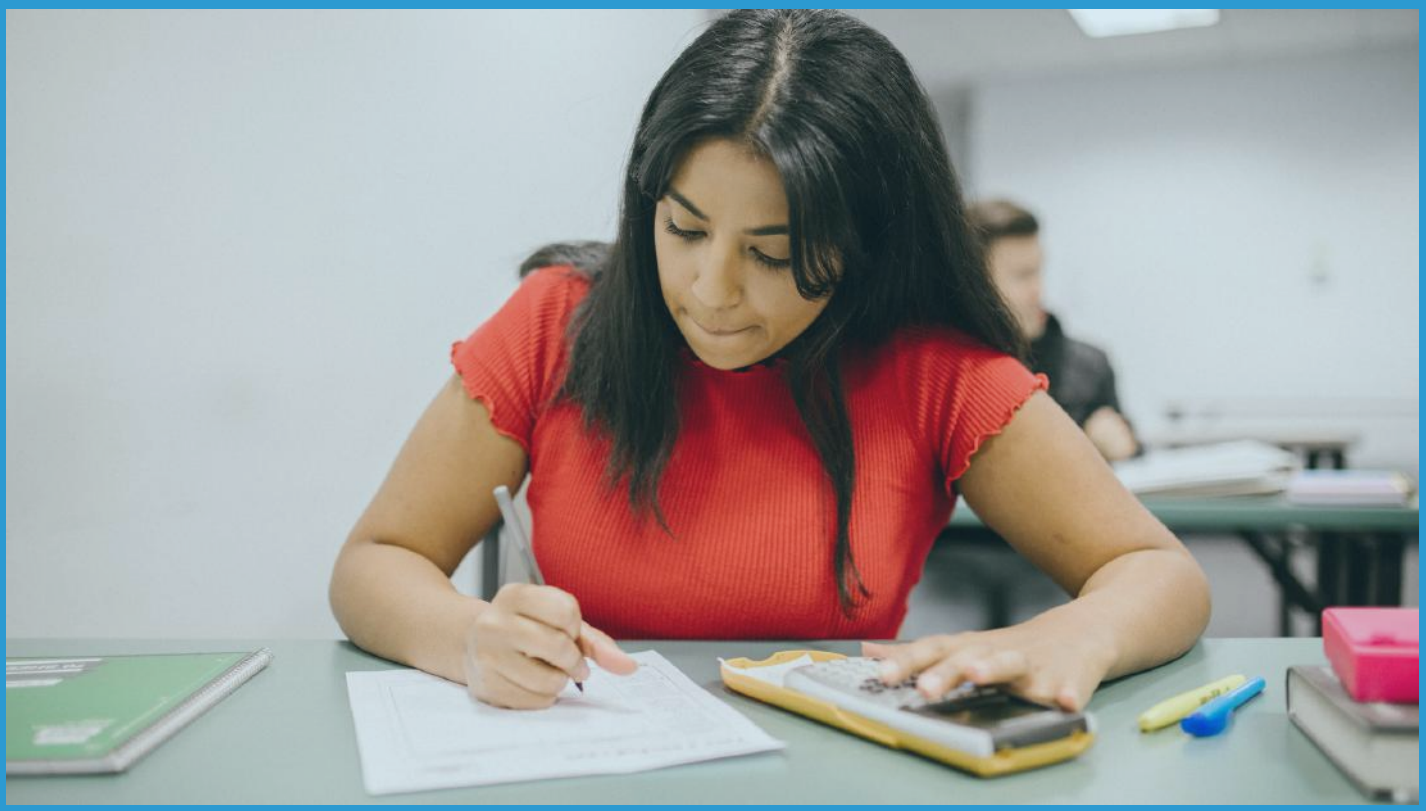
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Notations :

1.Options shown in green color and with

icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Nanotechnology 1st June 2023 Shift 2
Subject Name :	Nanotechnology
Creation Date :	2023-06-01 16:55:57
Duration :	120
Total Marks :	120
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Actual Answer Key :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No

Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Nanotechnology

Group Number :	1
Group Id :	28393675
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	120
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Nanotechnology

Section Id :	283936199
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	120
Number of Questions to be attempted :	120
Section Marks :	120
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Sub-Section Number : 1

Sub-Section Id : 283936199

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 1 Question Id : 28393610361 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two bars having different materials but of same area and length are subjected to same tensile force. If the bars have their axial elongation in the ratio of 4:6, then the two material's ratio of Modulus of Elasticity is _____.

Options :

1. ✔ $6:4$

2. ✖ $4:6$

3. ✖ $2:\sqrt{6}$

4. ✖ $\sqrt{6}:2$

Question Number : 2 Question Id : 28393610362 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A metal bar of 10 mm diameter when subjected to a pull of 23.5 kN gave an elongation of 0.3mm on a gauge length of 200 mm. The metal's Young's modulus of elasticity is _____.

Options :

1.

✖ $500\ kN/mm^2$

2. ✖ $300\ kN/mm^2$

3. ✖ $360\ kN/mm^2$

4. ✔ $200\ kN/mm^2$

Question Number : 3 Question Id : 28393610363 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If in a crystal there exists a point defect of the interstitial atom and if solute atom is smaller than the solvent atom, then select the true statement for the edge dislocation.

Options :

1. ✖ Dislocation will always attract to interstitial atom

2. ✖ Compression side of edge dislocation will repeal and will be attracted to the tension side

3. ✔ Compression side of edge dislocation will attract and will be repealed to the tension side

4. ✖ Dislocation will always repeal to interstitial atom

Question Number : 4 Question Id : 28393610364 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the metallic tiny whisker?

Options :

1. ✖ Bulk metallic glass

2. ✖ Single crystal with high dislocation

3. ✖ Metal foam

4. ✔ Tiny projection of the metals with zero dislocation

Question Number : 5 Question Id : 28393610365 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Select the following false statement for strain-relief crystallization.

Options :

1. ✔ Interaction of like signed dislocation

2. ✖ Decrease in the electric resistance

3. ✖ Increase in density

4. ✖ Dislocation climb

Question Number : 6 Question Id : 28393610366 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When a material is plastically deformed at low temperature (around 25 degrees) relative to the melting temperature, the following change is not observed in _____.

Options :

1. ✖ Change in grain shape

2. ✖ Strain hardening

3. ✖ Increase in dislocation density

4. ✔ Decrease in dislocation density

Question Number : 7 Question Id : 28393610367 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Classification of Composites can be based on _____.

Options :

1. ✖ Matrix type

2. ✔ Matrix type & Reinforcement constituent

3. ✖ Reinforcement constituent

4. ✖ Neither on matrix type nor on reinforcement constituent type

Question Number : 8 Question Id : 28393610368 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example for Carbon fiber?

Options :

1. ✔ Reinforcement

2. ✖ Filler

3. ✖ Stabilizer

4. ✖ Flame retardant

Question Number : 9 Question Id : 28393610369 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following polymer additive is used to remove parts from molds?

Options :

1. ✖ Plasticizers

2. ✖ Stabilizers

3. ✔ Lubricants

4. ✖ Reinforcements

Question Number : 10 Question Id : 28393610370 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____is not a characteristic trait of polymer materials.

Options :

1. ✖ Low density

2. ✖ Resistant to chemical attack

3. ✔ High strength

4. ✖ Low cost

Question Number : 11 Question Id : 28393610371 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The smallest portion of the crystal lattice is _____.

Options :

1. ✔ Unit cell

2. ✖ Miller indices

3. ✖ Lattice point

4. ✖ Crystal

Question Number : 12 Question Id : 28393610372 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is Packing fraction of a simple cubic structure?

Options :

1. ✖ 0.681

2. ✖ 0.745

3. ✖ 0.813

4. ✔ 0.524

Question Number : 13 Question Id : 28393610373 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Burgers vector of edge dislocation is ------- to the dislocation line.

Options :

1. ✖ 30^{o}

2. ✔ 90^{o}

3. ✖ 55^{o}

4. ✖ 70^{o}

Question Number : 14 Question Id : 28393610374 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The ratio of lateral strain to linear strain is _____

Options :

1. ✖ Bulk Modulus

2. ✖ Modulus of Elasticity

3. ✖ Modulus of Rigidity

4. ✔ Poisson's Ratio

Question Number : 15 Question Id : 28393610375 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Capacity of a material to absorb energy prior to failure is

Options :

1. ✖ Hardness

2. ✖ Stiffness

3. ✔ Toughness

4. ✖ Strength

Question Number : 16 Question Id : 28393610376 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ structure has amorphous solids.

Options :

1. ✖ Regular

2. ✔ Irregular

3. ✖ Linear

4. ✖ Dendritic

Question Number : 17 Question Id : 28393610377 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Each point (position of particle) in a crystal lattice is termed as _____.

Options :

1. ✖ Lattice point

2. ✖ Lattice lines

3. ✔ Lattice index

4. ✖ Lattice spot

Question Number : 18 Question Id : 28393610378 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a metal forms a FCC lattice with unit edge length of 500 pm and atomic mass of 110.

Calculate the density of the metal.

Options :

1. ✔ $5846\ kg/m^3$

2. ✖ $2923\ kg/m^3$

3. ✖ $8768\ kg/m^3$

4. ✖ $1750\ kg/m^3$

Question Number : 19 Question Id : 28393610379 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is the advantage of using conducting polymers in place of metals?

Options :

1. ✖ Cost

2. ✖ Thermal conductivity

3. ✔ Light-weight

4. ✖ Solubility

Question Number : 20 Question Id : 28393610380 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the average maximum temperature used for engineering ceramics?

Options :

1. ✖ 2860°C

2. ✖ 6815°C

3. ✔ 2760°C

4. ✖ 3400°C

Question Number : 21 Question Id : 28393610381 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Example for a thermoplastic is _____.

Options :

1. ✖ Melamine

2. ✔ Acetal

3. ✖ Epoxide

4. ✖ Urethane

Question Number : 22 Question Id : 28393610382 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

QD lasers have a very low threshold current densities ranging from _____.

Options :

1. ✖ 0.5 to 5 A cm^{-2}

2. ✖ 2 to 10 A cm^{-2}

3. ✖ 10 to 30 A cm^{-2}

4. ✔ 6 to 20 A cm^{-2}

Question Number : 23 Question Id : 28393610383 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Buried hetero-junction (BH) device is a type of _____, where the active volume is buried in a material of wider band-gap and lower refractive index.

Options :

1. ✖ Gas lasers

2. ✔ Strong index guiding lasers

3. ✖ Gain guided lasers

4. ✖ Weak index guiding lasers

Question Number : 24 Question Id : 28393610384 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following have anisotropic nature within their structure?

Options :

1. ✔ Snowflakes

2. ✖ Hair wax

3. ✖ Polythene

4. ✖ Crystal glass

Question Number : 25 Question Id : 28393610385 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is a phenomenon, where the magnetic lines of force cannot penetrate the body of a superconductor.

Options :

1. ✖ Isotopic effect

2. ✖ BCS theory

3. ✖ London theory

4. ✔ Meissner effect

Question Number : 26 Question Id : 28393610386 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the periodic table, number of metallic elements is _____.

Options :

1. ✔ 95

2. ✖ 118

3. ✖ 125

4. ✖ 145

Question Number : 27 Question Id : 28393610387 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which property of metal is used for making strings of musical instruments like Sitar and Violin.

Options :

1. ✖ Malleability

2. ✖ Ductility

3. ✔ Sonorousness

4. ✖ Conductivity

Question Number : 28 Question Id : 28393610388 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ metal is used for nuclear energy.

Options :

1. ✖ Zirconium

2. ✖ Lanthanum

3. ✔ Uranium

4. ✖ Tungsten

Question Number : 29 Question Id : 28393610389 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

From the following, forbidden energy gap of dielectrics is _____.

Options :

1. ✖ Equal to 1.2 eV

2. ✔ Greater than or equal to 3 eV

3. ✖ Less than 1.2 eV

4. ✖ Equal to 2 eV

Question Number : 30 Question Id : 28393610390 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The torque induced on a dipole when placed in an electric field E is _____.

Options :

1. ✖ $E \sin \theta$

2. ✖ $E \cos \theta$

3. ✖ $pE \cos \theta$

4. ✔ $pE \sin \theta$

Question Number : 31 Question Id : 28393610391 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The value of 1 Debye in cm is _____.

Options :

1. ✔ $3.33 \text{ X } 10^{-30}$ cm

2. ✖ $3.33 \text{ X } 10^{-28}$ cm

3. ✖ $3.33 \text{ X } 10^{-32}$ cm

4. ✖ $3.33 \text{ X } 10^{-34}$ cm

Question Number : 32 Question Id : 28393610392 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a water drop of radius 1 mm all the molecular dipole points are in the same direction. If the dipole moment of a water molecule is $6 \text{ X } 10^{-30}$ m, what is the polarization in the water drop?

Options :

1. ✖ $6.4 \text{ X } 10^{-13} \text{ m}^{-2}$

2. ✖ $7.4 \text{ X } 10^{-13} \text{ m}^{-2}$

3. ✖ $9.4 \text{ X } 10^{-13} \text{ m}^{-2}$

4. ✔ $8.4 \times 10^{-13}\ m^{-2}$

Question Number : 33 Question Id : 28393610393 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In the formula, $P = \chi_e E$, χ_e is called as _____.

Options :

1. ✖ Electric constant

2. ✖ Polarizing constant

3. ✔ Electric susceptibility

4. ✖ Polarizing susceptibility

Question Number : 34 Question Id : 28393610394 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In Ferroelectric materials, Polarization is _____

Options :

1. ✔ Reversible

2. ✖ Permanent

3. ✖ Spiked

4. ✖ Linear

Question Number : 35 Question Id : 28393610395 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The temperature characteristic of ferroelectric crystal is called _____

Options :

1. ✖ Crystal Temperature

2. ✔ Transition Temperature

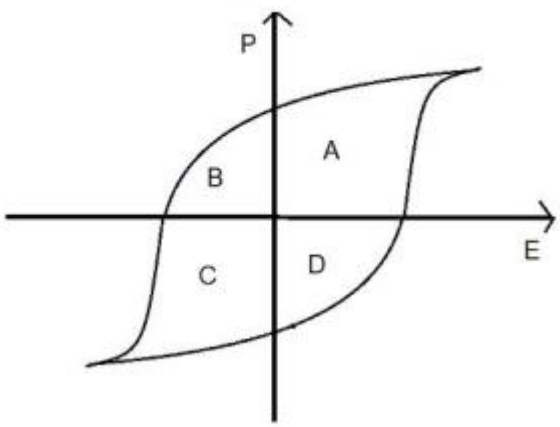
3. ✖ Ferro Temperature

4. ✖ Weiss Temperature

Question Number : 36 Question Id : 28393610396 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ part of the curve shows Spontaneous Polarization.



Options :

1. ✖ B

2. ✖ C

3. ✖ D

4. ✔ A

Question Number : 37 Question Id : 28393610397 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is the symmetry of $BaTiO_3$ in ferroelectric form.

Options :

1. ✔ Tetragonal

2. ✖ Cubic

3. ✖ Trigonal Bi-pyramidal

4. ✖ Octahedron

Question Number : 38 Question Id : 28393610398 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The minimum amount of current passed through the body of superconductor in order to destroy the superconductivity is called _____.

Options :

1. ✔ Critical current

2. ✖ Induced current

3. ✖ Eddy current

4. ✖ Hall current

Question Number : 39 Question Id : 28393610399 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Solid that offers no _____ for the passage of electricity is called superconductors.

Options :

1. ✖ Conductance

2. ✖ Inductance

3. ✖ Impedance

4. ✔ Resistance

Question Number : 40 Question Id : 28393610400 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The shifting of electrons in superconductors is prevented by _____.

Options :

1. ✖ Threshold energy level

2. ✖ Energy barrier

3. ✖ Orbitals

4. ✔ Quantum effect

Question Number : 41 Question Id : 28393610401 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An ideal superconductor exhibit _____.

Options :

1. ✖ Mesmeric effect

2. ✖ Mesomeric effect

3. ✔ Meissner effect

4. ✖ Monomeric effect

Question Number : 42 Question Id : 28393610402 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Preparation of superconductors by ceramic method with homogeneous mixture of the oxides in their molar ratios _____.

Options :

1. ✖ $Y_2O_3, BaCO_3, Cu_2O$

2. ✔ $Y_2O_3, BaCO_3, CuO$

3. ✖ $Y_2O_4, BaCO_3, CuO$

4. ✖ $YO_3, BaCO_3, CuO$

Question Number : 43 Question Id : 28393610403 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is relation between transition temperature (T_c) and isotopic mass (M)?

Options :

1. ✖ $T_c \propto M^{1/2}$

2. ✖ $T_c \propto M^{-1}$

3. ✖ $T_c \propto M$

4. ✔ $T_c \propto M^{-1/2}$

Question Number : 44 Question Id : 28393610404 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The sequence of the colour change during the polymerisation of polyaniline, is_____.

Options :

1. ✔ Light blue >> blue green >> copper tint >> green

2. ✖ Green >> copper tint >> blue green >> light blue

3. ✖ Copper tint >> blue green >> green >> light blue

4. ✖ Blue green >> green >> light blue >> copper tint

Question Number : 45 Question Id : 28393610405 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Conductivity of a material is defined as _____.

Options :

1. ✖ $\frac{R.A}{l}$

2. ✖ $\frac{E}{J}$

3. ✔ $\frac{l}{R.A}$

4. ✖ $\frac{B}{H}$

Question Number : 46 Question Id : 28393610406 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The materials insulating capacity against high voltages is called as _____.

Options :

1. ✖ Thermoelectricity

2. ✖ Electromechanical effect

3. ✖ Electrochemical effect

4. ✔ Dielectric strength

Question Number : 47 Question Id : 28393610407 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The nature of the coefficient of resistance of an insulator is _____.

Options :

1. ✖ Positive

2. ✔ Infinite

3. ✖ Negative

4. ✖ Zero

Question Number : 48 Question Id : 28393610408 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one is the most commonly used for making magnetic recording tape?

Options :

1. ✖ Silver nitrate

2. ✖ Small particles of iron

3. ✖ Silicon-iron

4. ✔ Ferric oxide

Question Number : 49 Question Id : 28393610409 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Example of piezoelectric material is _____.

Options :

1. ✔ Quartz

2. ✖ Glass

3. ✖ Corundum

4. ✖ Neoprene

Question Number : 50 Question Id : 28393610410 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is the correct classification of the conducting materials?

Options :

1. ✖ low resistivity, low conductivity

2. ✖ high resistivity, high conductivity

3. ✖ medium resistivity, medium conductivity

4. ✔ low resistivity, high conductivity

Question Number : 51 Question Id : 28393610411 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

With increase in temperature, the electrical conductivity of intrinsic semiconductor _____.

Options :

1. ✖ Decreases

2. ✔ Increases

3. ✖ Remains same

4. ✖ First increases then decrease

Question Number : 52 Question Id : 28393610412 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the net charge on n-type material?

Options :

1. ✖ Positive

2. ✔ Neutral

3. ✖ Negative

4. ✖ Both positive and negative

Question Number : 53 Question Id : 28393610413 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The _____ statement is true for a dielectric

Options :

1. ✖ Dielectrics are superconductors at high temperature

2. ✖ They cannot become superconductors

3. ✖ They have very less breakdown voltage

4. ✔ Dielectrics are superconductors at low temperature

Question Number : 54 Question Id : 28393610414 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A material with one dimension in Nano range and the other two dimensions are large is known as

Options :

1. ✖ Micro-material

2. ✖ Quantum wire

3. ✖ Quantum dot

4. ✔ Quantum well

Question Number : 55 Question Id : 28393610415 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Product design belongs to_____.

Options :

1. ✖ Bottom-up approach

2. ✔ Top-down approach

3. ✖ Top-down followed by Bottom-up

4. ✖ Bottom-up approach followed by Top-down

Question Number : 56 Question Id : 28393610416 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A special case of non-inverting amplifier in which all of the output voltage is feedback to the inverting input of the op-amp is known as _____.

Options :

1. ✖ Differentiator

2. ✖ Integrator

3. ✔ Voltage Follower

4. ✖ Logarithmic Amplifier

Question Number : 57 Question Id : 28393610417 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____effects are exhibited by Schmitt trigger.

Options :

1. ✖ Hall

2. ✔ Hysteresis

3. ✖ Accelerator

4. ✖ Illumination

Question Number : 58 Question Id : 28393610418 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Frequency response improves with _____ in an RC coupled amplifier.

Options :

1. ✖ Lower R_1

2. ✖ Less Gain

3. ✖ More Dias

4. ✔ Higher C_C

Question Number : 59 Question Id : 28393610419 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____transistor array is essential in construction of a mirror circuit where the formation of diode takes place by an adjacent transistor.

Options :

1. ✖ CA3081

2. ✖ CA3046

3. ✖ CA3083

4. ✔ CA3086

Question Number : 60 Question Id : 28393610420 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An increase in operating frequency also increases _____ between input and output and decreases _____ for a compensating network of an amplifier.

Options :

1. ✖ Phase shift & break frequency

2. ✖ Magnitude (gain) & Phase shift

3. ✖ Break frequency & Phase shift

4. ✔ Phase shift & magnitude (gain)

Question Number : 61 Question Id : 28393610421 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ transistor is connected in parallel with feedback capacitor for termination of each ramp at a prescribed level in a Voltage Controlled Sawtooth Oscillator (VCO).

Options :

1. ✖ BJT

2. ✔ PUT

3. ✖ FET

4. ✖ MOSFET

Question Number : 62 Question Id : 28393610422 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The below stated condition applicable for Non-inverting amplifier is _____.

A. Output voltage is greater than input voltage

B. Output voltage is lesser than input voltage

C. Output voltage is in phase with an input signal

D. Output voltage is out of phase w.r.t. input by 180°

Options :

1. ✖ A & D

2. ✖ B & C

3. ✖ B & D

4. ✔ A & C

Question Number : 63 Question Id : 28393610423 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Choose a correct order from the following steps to be done in one of the algorithm of divide and conquer method

i) Store the signal column wise

ii) Compute the M-point DFT of each row

iii) Multiply the resulting array by the phase factors W_N^{lq}.

iv) Compute the L-point DFT of each column.

v) Read the result array row wise.

Options :

1. ✖ i – ii – iv – iii – v

2. ✖ i – iii – ii – iv – v

3. ✔ i – ii – iii – iv – v

4. ✖ i – iv – iii – ii – v

Question Number : 64 Question Id : 28393610424 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The photoresist layer is exposed to _____in CMOS fabrication

Options :

1. ✔ Ultra Violet Light

2. ✖ Visible Light

3. ✖ Infrared Light

4. ✖ Fluorescent

Question Number : 65 Question Id : 28393610425 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following is sputtered on the whole wafer?

Options :

1. ✖ Silicon

2. ✔ Aluminium

3. ✖ Silica

4. ✖ Potassium

Question Number : 66 Question Id : 28393610426 Question Type : MCQ Option Shuffling : Yes

Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The Boolean equation $Y = \bar{A}BC + \bar{A}B\bar{C} + A\bar{B}\bar{C} + A\bar{B}C$ is to be implemented using only two input NAND gates. The minimum number of gates required is

Options :

1. ✖ 3

2. ✖ 6

3. ✖ 5

4. ✔ 4

Question Number : 67 Question Id : 28393610427 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A thermoelectric refrigerator works on the principle of

Options :

1. ✖ Jules Effect

2. ✖ Seebeck Effect

3. ✖ Vernier Effect

4. ✔ Peltier Effect

Question Number : 68 Question Id : 28393610428 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a bipolar junction transistor, the current gain β _____

Options :

1. ✔ increases with the increase in temperature

2. ✖ increases exponentially with the increase in temperature

3. ✖ decreases with the increase in temperature

4. ✖ does not change with the change in temperature

Question Number : 69 Question Id : 28393610429 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The number of depletion layers in a transistor is _____.

Options :

1. ✖ One

2. ✖ Three

3. ✖ Four

4. ✔ Two

Question Number : 70 Question Id : 28393610430 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The following are the functions of a transistor _____.

Options :

1. ✖ Rectifier and a fixed resistor

2. ✔ Variable resistor and switching device

3. ✖ Switching device and a fixed resistor

4. ✖ Tuning device and rectifier

Question Number : 71 Question Id : 28393610431 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A BJT with $\beta = 50$ has a base to collector leakage current I_{CBO} of 2.5 μA. If the transistor is connected in CE configuration, the collector current for $I_B = 0$ is

Options :

1. ✖ 0.05 μA

2. ✖ 0.157 mA

3. ✔ 0.1275 mA

4. ✖ 0.516 mA

Question Number : 72 Question Id : 28393610432 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is true with regard to the cut off region of npn BJT?

Options :

1. ✔ $V_B < V_E$

2. ✖ $V_B > V_E$

3. ✖ $V_B = V_E$

4. ✖ $V_B > V_C$

Question Number : 73 Question Id : 28393610433 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Binary ladder network is better than resistive divider for D/A conversion, because _____.

Options :

1. ✔ It requires resistor having two values only

2. ✖ It requires lesser number of resistors

3. ✖ It is cheaper

4. ✖ It gives better accuracy

Question Number : 74 Question Id : 28393610434 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In a binary ladder (R-2R), D/A converter, the input resistance for each input is

Options :

1. ✖ 4R

2. ✔ 3R

3. ✖ 2R

4. ✖ R

Question Number : 75 Question Id : 28393610435 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A/D converter which does not use D/A converter is

Options :

1. ✖ Continuous null balance A/D converter

2.

✔ Dual slope integrator A/D converter

3. ✖ Staircase ramp A/D converter

4. ✖ Successive approximation A/D converter

Question Number : 76 Question Id : 28393610436 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ is the main disadvantage of a dual slope integrator A/D converter

Options :

1. ✖ High cost

2. ✖ Low sensitivity

3. ✖ Temperature immunity

4. ✔ Slow conversion time

Question Number : 77 Question Id : 28393610437 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The gate voltage in a JFET at which drain current becomes zero is called _____.

Options :

1. ✖ Saturation voltage

2. ✖ Active voltage

3. ✔ Pinch-off voltage

4. ✖ Cut-off voltage

Question Number : 78 Question Id : 28393610438 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

JFET is a_____ device.

Options :

1. ✖ Tripolar

2. ✖ Antipolar

3. ✖ Bipolar

4. ✔ Unipolar

Question Number : 79 Question Id : 28393610439 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Junction Field Effect Transistor is a _____ controlled device

Options :

1. ✔ Voltage

2. ✖ Current

3. ✖ Resistance

4. ✖ Conductance

Question Number : 80 Question Id : 28393610440 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In FET, the np region exists between source and gate is _____.

Options :

1. ✖ forward biased

2. ✖ forward or reverse biased

3. ✔ reverse biased

4. ✖ unbiased

Question Number : 81 Question Id : 28393610441 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The wave-particle duality of light is defined as_____

Options :

1. ✖ a wave only

2. ✖ a particle only

3. ✔ both a wave and a particle

4. ✖ neither a wave nor a particle

Question Number : 82 Question Id : 28393610442 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Uncertainty principle is easily understood with the help of _____

Options :

1. ✖ Dalton's effect

2. ✖ Electron effect

3. ✖ Rhombic effect

4. ✔ Compton's effect

Question Number : 83 Question Id : 28393610443 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____subject deals with Quantum mechanics.

Options :

1. ✖ Mechanics

2. ✖ Electronics

3. ✔ Physics

4. ✖ Chemistry

Question Number : 84 Question Id : 28393610444 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

In Schrodinger wave equation the time domain can be _____.

Options :

1. ✖ Dependent

2. ✖ Independent

3. ✖ Zero

4. ✔ Dependent and Independent

Question Number : 85 Question Id : 28393610445 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The transmission depending on tunnel effect is that of a plane wave through a _____.

Options :

1. ✖ Circular Barrier

2. ✖ Opaque Object

3. ✖ Infinitely small barrier

4. ✔ Rectangular Barrier

Question Number : 86 Question Id : 28393610446 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The central force motion is based on _____

Options :

1. ✔ the force is always directed towards fixed point

2. ✖ the force is not directed towards centre

3. ✖ the force on particle does not depend on distance from centre

4. ✖ the force is tangential to path always

Question Number : 87 Question Id : 28393610447 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Two particles A and B, initially at rest, move towards each other under mutual force of attraction. At the instant when the speed of A is v and the speed of B is 2v, the speed of mass of the system is _____.

Options :

1. ✖ v

2. ✖ 1.5v

3. ✖ 3v

4. ✔ Zero

Question Number : 88 Question Id : 28393610448 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

_____ Laws governs mechanical waves.

Options :

1. ✖ Faraday's

2. ✔ Newton's

3. ✖ Hertz'

4. ✖ Planck's

Question Number : 89 Question Id : 28393610449 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The wave function of the particle lies in _____ region.

Options :

1. ✖ $X > 0$

2. ✖ $X < 0$

3. ✖ $X > L$

4. ✔ $0 < X < L$

Question Number : 90 Question Id : 28393610450 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Energy of the particle is proportional to _____.

Options :

1. ✖ n

2. ✖ n^{-1}

3. ✔ n^2

4. ✖ n^{-2}

Question Number : 91 Question Id : 28393610451 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The line of action of concurrent forces joins at _____.

Options :

1. ✔ a single point

2. ✖ a plane

3. ✖ perpendicular planes

4. ✖ two points

Question Number : 92 Question Id : 28393610452 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Forces meeting at one point but having lines of action, not in one plane are known as_____.

Options :

1. ✖ Coplanar concurrent forces

2. ✖ Coplanar non-concurrent forces

3. ✖ Non-coplanar concurrent forces

4. ✔ Non-coplanar non-concurrent forces

Question Number : 93 Question Id : 28393610453 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A spring when compressed by 4 cm has 2 J energy stored in it. The force required to extend it by 8 cm is _____.

Options :

1. ✖ 2 N

2. ✖ 20 N

3. ✔ 200 N

4. ✖ 2000 N

Question Number : 94 Question Id : 28393610454 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which of the following equation of motion represents simple harmonic motion? Where k, k_0, k_1 and a are all positive.

Options :

1. ✔ acceleration = - k(x + a)

2. ✖ acceleration = k(x + a)

3. ✖ acceleration = kx

4. ✖ acceleration = $- k_0x + k_1x^2$

Question Number : 95 Question Id : 28393610455 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following principles states that the inertia forces, couples, external forces and torques on a body together give statical equilibrium?

Options :

1. ✖ Paul Ehrlich principle

2. ✖ David Hilbert principle

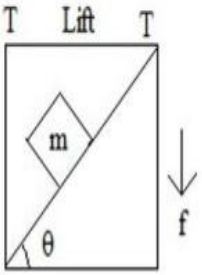
3. ✖ Edward Jenner principle

4. ✔ D' Alembert principle

Question Number : 96 Question Id : 28393610456 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A wedge m of weight 104 N is sliding on a smooth inclined plane of an elevator which is moving down with a constant acceleration of 2 m/s^2 as shown in the figure below. What will be the net normal reaction force acting on the wedge exerted by the inclined plane of an elevator? Take g = 10m/s^2. Inclination angle of the lift plane is 30°.



Options :

1. ✖ 68 N

2. ✔ 72 N

3. ✖ 108 N

4. ✖ 90 N

Question Number : 97 Question Id : 28393610457 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If a rigid body rotates with an angular momentum L and its kinetic energy is halved, then the angular momentum is

Options :

1. ✖ L

2. ✔ L/2

3. ✖ 2L

4. ✖ 3L

Question Number : 98 Question Id : 28393610458 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A particle moves in a circular motion that is consistent. The particle's angular momentum will be conserved at _____.

Options :

1. ✖ the point on the circumference of the circle

2. ✖ any point inside the circle

3. ✖ any point outside the circle

4. ✔ the centre point of the circle

Question Number : 99 Question Id : 28393610459 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The relationship between the load lifted (W) and the effort required (P) to lift the load often is called as the law of the machine is _____.

Options :

1. ✖ $P = aW/b$

2. ✖ $P = aW/2b$

3. ✖ $P = aW - b$

4. ✔ $P = aW + b$

Question Number : 100 Question Id : 28393610460 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A certain weight lifting machine of velocity ratio 30 can lift a load of 1500 N with the help of 125 N effort. What is the efficiency of the machine?

Options :

1. ✔ 40%

2. ✖ 50%

3. ✖ 60%

4. ✖ 70%

Question Number : 101 Question Id : 28393610461 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Radiation heat transfer is depicted by _____.

Options :

1. ✖ Due to bulk fluid motion, there is a transport of energy

2. ✖ There is the circulation of fluid by buoyancy effects

3. ✔ Movement of discrete packets of energy as electromagnetic waves

4. ✖ Thermal energy transfer as vibrational energy in the lattice structure of the material.

Question Number : 102 Question Id : 28393610462 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The literature of heat transfer generally recognizes distinct modes of heat transfer.

The number of modes are _____

Options :

1. ✖ One

2. ✖ Two

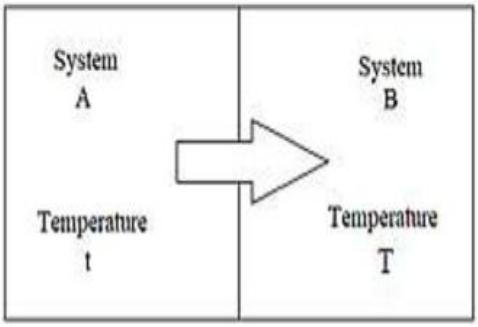
3. ✔ Three

4. ✖ Four

Question Number : 103 Question Id : 28393610463 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Consider system A at uniform temperature t and system B at another uniform temperature T (t > T) as shown in figure. Let the two systems be brought into contact and be thermally insulated from their surroundings but not from each other. Energy will flow from system A to system B due to ___.



Options :

1. ✖ Energy difference

2. ✔ Temperature difference

3. ✖ Mass difference

4. ✖ Volumetric difference

Question Number : 104 Question Id : 28393610464 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

An oil cooler in a high performance engine has an outside surface area 0.12 m and surface temperature of 65 °C. At any intermediate time, air moves over the surface of the cooler at a temperature of 30 °C, gives rise to a surface coefficient equal to 45.4W/mK. The heat transfer rate is _____.

Options :

1. ✔ 190.68 W

2. ✖ 238.43 W

3. ✖ 543.67 W

4. ✖ 675.98 W

Question Number : 105 Question Id : 28393610465 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Convective heat transfer coefficient doesn't depend on _____.

Options :

1. ✖ Space

2. ✖ Time

3. ✔ Surface area

4. ✖ Orientation of solid surface

Question Number : 106 Question Id : 28393610466 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Thermal conductivity is maximum for the following substance _____.

Options :

1. ✖ Silver

2. ✖ Ice

3. ✖ Aluminum

4. ✔ Diamond

Question Number : 107 Question Id : 28393610467 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A designer chooses the values of fluid flow rates and specific heats in such a manner that the Heat capacities of the two fluids are equal. A hot fluid enters the counter flow heat exchanger at 100°C and leaves at 60°C. A cold fluid enters the heat exchanger at 40°C. What is the mean temperature difference between the two fluids?

Options :

1. ✔ 20°C

2. ✖ 30°C

3. ✖ 40°C

4. ✖ 50°C

Question Number : 108 Question Id : 28393610468 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time

: N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The unit of overall coefficient of heat transfer is _____.

Options :

1. ✖ W/m^2

2. ✖ W/mK

3. ✖ W/m

4. ✔ W/m^2K

Question Number : 109 Question Id : 28393610469 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

LMTD in case of counter flow heat exchanger as compared to parallel flow heat exchanger will be_____.

Options :

1. ✖ Lower

2. ✔ Higher

3. ✖ Same

4. ✖ Depends on the area of heat exchanger

Question Number : 110 Question Id : 28393610470 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

When heat is transferred by molecular collision, then heat transfer is referred as _____.

Options :

1. ✖ Conduction

2. ✔ Convection

3. ✖ Radiation

4. ✖ Scattering

Question Number : 111 Question Id : 28393610471 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

What is the latent heat of steam at atmospheric pressure?

Options :

1. ✖ 1535 kJ/kg

2. ✖ 1875 kJ/kg

3. ✔ 2257 kJ/kg

4. ✖ 2685 kJ/kg

Question Number : 112 Question Id : 28393610472 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Carnot cycle comprises of _____

Options :

1. ✔ Two isothermal and two reversible adiabatic processes

2. ✖ Two constant volume and two reversible adiabatic processes

3. ✖ Two constant pressure and two reversible adiabatic processes

4. ✖ One constant volume, one constant pressure and two reversible adiabatic processes

Question Number : 113 Question Id : 28393610473 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A refrigerator has a performance coefficient of 5. What is the ambient heat discharged if the temperature inside the freezer is -20°C?

Options :

1. ✖ 11°C

2. ✖ 21°C

3. ✔ 31°C

4. ✖ $41^{\circ}C$

Question Number : 114 Question Id : 28393610474 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 10 g of ice at 0°C is converted to water at the same temperature, What will be the change in entropy? (Latent heat 80 cal/g)

Options :

1. ✔ 2.93 cal/K

2. ✖ 3.29 cal/K

3. ✖ 32.9 cal/K

4. ✖ 29.3 cal/K

Question Number : 115 Question Id : 28393610475 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Gibbs phase rule defines the relationship between degrees of freedom (F) of a system, number of phases (P) and the number of components (c). The equation is _____.

Options :

1. ✖ $F + P = C$

2. ✖ $F + P = C + 1$

3. ✖ $F - P = C$

4. ✔ $F + P = C + 2$

Question Number : 116 Question Id : 28393610476 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following is correct statement?

[A = Helmholtz function (Helmholtz Free Energy), G = Gibbs function (Gibbs free energy),

U = Internal energy, H = Enthalpy, T = Absolute temperature, S = Entropy]

Options :

1. ✖ $A = H - TS\ ;\ G = H + TS$

2. ✔ $A = U - TS\ ;\ G = H - TS$

3. ✖ $A = U + TS\ ;\ G = H - TS$

4. ✖ $A = U + TS\ ;\ G = H + TS$

Question Number : 117 Question Id : 28393610477 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

The standard heat of combustion of ethanol (C_2H_5OH) is 1372 kJ/mol. By completely burning

a 20g Sample, how much heat (in kJ) will be liberated?

Options :

1. ✖ 469 kJ

2. ✔ 597 kJ

3. ✖ 686 kJ

4. ✖ 786 kJ

Question Number : 118 Question Id : 28393610478 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

A system suffers an increase in internal energy of 80 J and at the same time has 50 J of work done on it. The heat change of the system is _____.

Options :

1. ✖ -30 J

2. ✔ +30 J

3. ✖ +130 J

4. ✖ -130 J

Question Number : 119 Question Id : 28393610479 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

If 30 J of energy is added to water in the form of heat at 27 °C, the change in entropy of water is _____

Options :

1. ✖ 2.5 J/K

2. ✖ 9.5 J/K

3. ✖ 45 J/K

4. ✔ 100 J/K

Question Number : 120 Question Id : 28393610480 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0

Which one of the following thermodynamic quantities is not a state function?

Options :

1. ✖ Gibbs free energy

2. ✖ Enthalpy

3. ✖ Entropy

4. ✔ Work