Sr No.	MSc Physics
1	Find the missing term in the following series: 3,10,29,66,127…?
Alt1	164
Alt2	187
Alt3	216
Alt4	218

2	Choose word from the given options which bears the same relationship to the third word, as the first two bears: Flower : Butterfly :: Dirt :?
Alt1	Rats
Alt2	Fly
Alt3	Bugs
Alt4	Sweeper

3	Tiff is to Battle as Frugal is to …….?.....
Alt1	Sprint
Alt2	Vague
Alt3	Miserly
Alt4	Vital

4	Select the lettered pair that has the same relationship as the original pair of words: Expend: Replenish
Alt1	Exhort: Encourage
Alt2	Formant: Rebellion
Alt3	Defect: Rejoin
Alt4	Encroachment: Occupy

5	Choose the set that has the same relationship as in the original: Bone : Skeleton : Nerve
Alt1	House: Door: Window
Alt2	Spoke: Wheel: Handle
Alt3	Retina: Eye: Pupil
Alt4	Snow: Cloud: Ice

6	Spot the defective segment from the following:
Alt1	Only with your help
Alt2	I passed the test
Alt3	though you helped me
Alt4	at the last minute

7	The government proposes to ------- hanging.
Alt1	cancel
Alt2	nullify
Alt3	invalidate

Alt4	abolish

8	The burglar was hit ---------.
Alt1	on head
Alt2	on his head
Alt3	on the head
Alt4	in the head

9	Choose the option closest in meaning to the given word: COGENT
Alt1	consistent
Alt2	acceptable
Alt3	convincing
Alt4	weak

10	Choose the antonymous option you consider the best: PROVIDENT
Alt1	careful
Alt2	worldly
Alt3	prodigal
Alt4	frugal

11	Ravi's brother is 3 years senior to him. His father was 28 years of age when his sister was born while his mother was 26 years of age when he was born. If his sister was 4 years of age when his brother was born, what was the age of Ravi's father and mother respectively when his brother was born ?
Alt1	32 years, 23 years
Alt2	32 years, 29 years
Alt3	35 years, 29 years
Alt4	35 years, 33 years

12	In each of the following questions some statements are followed by two conclusions (i) and (ii). Read the statements carefully and then decide which of the conclsions follow beyond a reasonable doubt. Mark your answer as Statement: All my films are copies. I am happy to inform of the source when I copy – a producer Conclusions: (i) The producer does not make even a single film based on his own idea (ii) The producer copies domestic and foreign films
Alt1	If only conclusion (i) follows
Alt2	If only conclusion (ii) follows
Alt3	If neither conclusion (i) nor (ii) follows
Alt4	If both the conclusions follow

13	3. What value should come in place of question mark (?) in the following number series? 14, 28, 46, ?, 94, 124
Alt1	64
Alt2	68
Alt3	72
Alt4	76

14	In a certain code ADVENTURES is written as TDRESAUVEN. How is SURPRISINGwritten in that code ?
Alt1	IUIPGSRSNR
Alt2	IUINGSSRRP
Alt3	IUIPGSSRNR
Alt4	IRIPGSSNRR

15	Wax is related to Grease in the same way as Milk is related to
Alt1	Drink
Alt2	Ghee
Alt3	Curd
Alt4	Protein

16	The following information is given: Six persons A, B, C, D, E and F are sitting in two rows, three in each. E is not at the end of any row. D is second to the left of F. C, the neighbour of E, is sitting diagonally opposite to D. B is the neighbour of F. After interchanging seat with E, who will be the neighbours of D in the new position ?
Alt1	C and A
Alt2	F and B
Alt3	Only B
Alt4	Only A

17	If 30 students occupy 2/3 of the seats in a classroom, how many students would occupy 4/5 of the seats in the classroom?
Alt1	36
Alt2	32
Alt3	40
Alt4	48

18	Mean of the first 10 odd numbers is
Alt1	10
Alt2	13
Alt3	15
Alt4	9

19	Two numbers are in the ratio 2:3, If 4 be subtracted from each, they are in the ratio 3:5, Find the numbers.

Alt1	16,24
Alt2	20,30
Alt3	0.341666667
Alt4	None

20	It takes 30 seconds to cut the woodlock into 3 pieces.How much time does it takes to cut the same block into 4 pieces?
Alt1	40secs
Alt2	45secs
Alt3	50secs
Alt4	60secs

21	Lissajous' figures obtained by combining x=a sin ωt & x=a sin(ωt – π/4) will be:-
Alt1	ellipse
Alt2	parabola
Alt3	straight line
Alt4	Circle

22	If Silicon (Si) is doped with 1019 pentavalent impurity atoms, the position of the Femi level is:-
Alt1	Position of the Femi level is below the Valence band
Alt2	Position of the Femi level is above the Valence band
Alt3	Position of the Femi level is above the Conduction band
Alt4	Position of the Femi level is below the Conduction band

23	Which the following is incorrect?
Alt1	$\mathrm{Re}(z) \geq \lvert z \rvert$
Alt2	$\mathrm{Re}(z) \leq \lvert z \rvert$
Alt3	$\mathrm{Im}(z) \leq \lvert z \rvert$
Alt4	$z\bar{z} = \lvert z \rvert^2$

24	A vector is a tensor of rank _____, and a scalar is a tensor of rank _____.
Alt1	0 and 1
Alt2	1 and 1
Alt3	1 and 0
Alt4	0 and 0

25	Pulse broadening due to material dispersion(21.5ps/km-nm)in optical fiber of length 10 km for light pulse centred around 1550 nm and spectral width of 2 nm:-
Alt1	430ps
Alt2	0.33microseconds
Alt3	43ps
Alt4	215ps

26	Fresnel number used to differentiate between near field and far field diffraction pattern for aperture having linear dimension of 'a' at a distance 'd' for the incident light of wavelength ' λ' is given by:-
Alt1	λ / d
Alt2	d/λ
Alt3	(λ d)/ a2
Alt4	a2/(λ d)

27	If x1 is the distance of the object from the first principal focus F1 and x2 is the distance of the image from the second principal focus F2 then (under thin les approximation) the following is true:-
Alt1	x1 x2 = f2
Alt2	x1 / x2 = f2
Alt3	x2 / x1 = f2
Alt4	x1 x2 = -f2

28	The Principle of Equipartition of Energy states that internal energy of a gas is shared equally:-
Alt1	Between translational and vibrational kinetic energy
Alt2	Among the relevant degrees of freedom
Alt3	Between temperature and pressure
Alt4	Among the molecules

29	For the Fourier series which represents $f(x) = x^2$ in the interval $-\pi < x < \pi$, the sum of the series $\frac{1}{1^2} - \frac{1}{2^2} + \frac{1}{3^2} - \frac{1}{4^2} + ----$:-
Alt1	$\frac{\pi}{8}$
Alt2	$\frac{\pi^2}{4}$

Alt3	$\frac{\pi}{12}$
Alt4	$\frac{\pi^2}{12}$

30	In producing cooling by adiabatic demagnetization we use:-
Alt1	Paramagnetic substance
Alt2	Diamagnetic substance
Alt3	Insulator
Alt4	Ferromagnetic substance

31	The order and degree of the differential equation are $\frac{d^2y}{dx^2}+x=\sqrt{y+\frac{dy}{dx}}$:-
Alt1	2,1
Alt2	2,1/2
Alt3	1,2
Alt4	2,2

32	If $A=\begin{bmatrix}\cos\theta & \sin\theta \\ -\sin\theta & \cos\theta\end{bmatrix}$ then AA^T is:-
Alt1	Hermitian
Alt2	Skew-symmetric
Alt3	Orthogonal
Alt4	Symmetric

33	Two sound waves are y=a sin(ωt - kx) and y=a cos(ωt - kx) is the Phase shift between them is:
Alt1	π/4
Alt2	π/2
Alt3	π
Alt4	0

34	The band gap (Eg) value of Silicon (Si) at 300 K is:-
Alt1	1.1 eV
Alt2	0.91 eV
Alt3	0.815 eV
Alt4	0.785 eV

35	An ideal gas has certain root mean square velocity v at certain temperature. If we consider another ideal gas of atoms with double the atomic mass compared to the first one, then under the sametemperature and pressure conditions, the root mean square velocity of the second ideal gas is equal to:-
Alt1	$\frac{v}{\sqrt{2}}$
Alt2	$\frac{v}{\sqrt{2}}$
Alt3	$\frac{v}{\sqrt{2}}$
Alt4	v

36	The heat energy radiated by an object is found to be equal to that of a perfect blackbody only if the temperature of the object is doubled than that of the blackbody. Then the emissivity of the object is approximately equal to:-
Alt1	0.05
Alt2	0.03
Alt3	0.04
Alt4	0.06

37	For the light passing through a pinhole along the axis will suffer from:-
Alt1	Astigmatism
Alt2	Spherical aberration
Alt3	Distortion
Alt4	Coma

38	Ultrasonic waves produced in a medium can be detected by a:-
Alt1	Telephone
Alt2	Hebbs Method
Alt3	Quineus tube
Alt4	Kundt's tube

39	If $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$, then ∇r^n is:-
Alt1	$n(n-1)r^{n-2}\vec{r}$

Alt2	$nr^{n-2}\vec{r}$
Alt3	$nr^{n-1}\vec{r}$
Alt4	$nr^{n}\vec{r}$

40	The relation between Brewsters angle (θB) and Critical angle (θC) corresponding to external and internal reflection is:-
Alt1	θB = θC
Alt2	θB - θC=90°
Alt3	θB + θC=90°
Alt4	θB > θC +90°

41	Two thin lens of focal length f1 and f2 separated by distance t would have minimum chromatic aberration when:-
Alt1	t = (f1-f2)/2
Alt2	1/t = 1/f1 + 1/f2
Alt3	t = (f1+f2)/2
Alt4	1/t = 1/f1 - 1/f2

42	Superposition of a plane wave and a spherical wave at a finite distance from the point source will result is interference pattern which is:-
Alt1	Vertical Straight line fringes
Alt2	Horizontal Straight Line Fringes
Alt3	Hyperboloid shape of Fringes with Straight line parallel along the line joining the two sources
Alt4	Concentric Ring of fringes

43	In a silver atom, the outer most orbit is labelled as 5s1 . If a beam of silver atoms are sent through an inhomogeneous magnetic field, then the beam
Alt1	does not split.
Alt2	is split into 5 beams
Alt3	is split into 4 beams
Alt4	is split into 2 beams

44	For a given eyepiece having f1 and f2 are focal length of the field lens and eye lens respectively with d as the separation distance between them, the condition for minimum chromatic aberration and minimum spherical aberration are:-
Alt1	d = (f1-f2) and d = (f1+f2)/2
Alt2	d = (f1-f2)/2 and d = (f1+f2)
Alt3	d = (f1+f2)/2 and d = (f1-f2)

Alt4	d = (f1+f2) and d = (f1-f2)/2

45	Two frames of references move with a constant relative velocity. Which of the following quantity changes from one frame to another?
Alt1	The magnetic field.
Alt2	The space-time interval.
Alt3	The rest mass of a particle.
Alt4	The divergence of a magnetic field.

46	The residue of cot z at z = 0 is:-
Alt1	-1
Alt2	1/4
Alt3	π
Alt4	1

47	Use of Fermats principle for tracing the reflected light from the ellipsoidal mirror would require:-
Alt1	The emerging light to travel in maximum amount of time
Alt2	The emerging light to travel in least distance
Alt3	The paths travel by emerging light to be stationary
Alt4	The emerging light to travel in least amount of time

48	If $A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}, B = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}, C = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$, then $A^2 + B^2 + C^2$ is given by:-
Alt1	3I
Alt2	2I
Alt3	-2I
Alt4	-3I

49	A passenger is sitting in a fast moving train. The engine of the train blows a whistle of frequency n. if the apparent frequency of the sound heard by the passenger is n, then:-
Alt1	n’ > n
Alt2	n’ < n
Alt3	n’ = 1/n
Alt4	n’ = n

50	A particle of mass m moves in the +ve x direction in a frame of reference with certain speedrelative to the origin of this frame, where c is the speed of light. This frame itself is moving alongthe same direction with respect to another frame with speed 0.5c . What is the speed of the particlewith respect to the second frame?
Alt1	c
Alt2	0.25c
Alt3	0.8c
Alt4	0.4c

51	If $\left\|\vec{a}+\vec{b}\right\|=60, \left\|\vec{a}-\vec{b}\right\|=40,$ and $\left\|\vec{b}\right\|=46$ then $\left\|\vec{a}\right\|$ is:-
Alt1	18
Alt2	21
Alt3	22
Alt4	11

52	If the degrees of freedom of a gas are 'f' then the ratio of its two specific heats Cp/Cv is given by:-
Alt1	1+(2/f)
Alt2	1-(1/f)
Alt3	1+(1/f)
Alt4	1-(2/f)

53	According to kinetic theory of gases the relation between pressure P density ρ and root-mean square velocity C is:-
Alt1	P=(1/2)ρC
Alt2	P=(1/3)ρC2
Alt3	P=(1/3)ρC
Alt4	P=(1/2)ρC2

54	At what Celsius temperature will oxygen molecules have the same root mean square velocity as that of hydrogen molecules at -100°C:-
Alt1	175 °C
Alt2	100 °C
Alt3	1495 °C
Alt4	2495 °C

55	As an empty vessel is filled with water, its resonant frequency:-
Alt1	decreases
Alt2	constant
Alt3	zero
Alt4	increases

56	Two events are observed with respect to one frame of reference. The same events are observed from another frame of reference which is moving at a constant relative velocity with respect to the first frame. If the two events are spatial separated and simultaneous in the first frame, then they:-
Alt1	cannot occur at the same spatial point in the second frame.
Alt2	are also simultaneous in the second frame.
Alt3	are separated by a space-time interval in the second frame.
Alt4	necessarily occur at the same spatial point in the second frame

57	It is found that the energy density of the radiation spectrum emitted by a black-body reaches its maximum at certain wavelength l at a certain temperature T . At a higher temperature, the energydensity would:-
Alt1	reach its maximum at a lower wavelength
Alt2	reach its maximum at a higher wavelength
Alt3	reach its maximum at the same wavelength.
Alt4	have the same maximum at the same wavelength.

58	In a reversible process, the entropy of the system:-
Alt1	Decreases
Alt2	Remains constant
Alt3	Increases
Alt4	Remains zero

59	Let $\vec{u},\vec{v}$ and $\vec{w}$ be vectors such that $\vec{u}+\vec{v}+\vec{w}=\vec{0}$. If $\left\|\vec{u}\right\|=3,\left\|\vec{v}\right\|=4$ and $\left\|\vec{w}\right\|=5$ then $\vec{u}.\vec{v}+\vec{v}.\vec{w}+\vec{w}.\vec{u}$ is:-
Alt1	25
Alt2	5
Alt3	$\sqrt{5}$
Alt4	-25

60	If $\left\|\vec{a}\right\|=2,\left\|\vec{b}\right\|=7$ and $\left\|\vec{a}\times\vec{b}\right\|=3\vec{i}-2\vec{j}+6\vec{k}$ then the angle between $\vec{a}$ and $\vec{b}$ is:-
Alt1	$\frac{\pi}{4}$
Alt2	$\frac{\pi}{3}$
Alt3	$\frac{\pi}{6}$

Alt4	$\frac{\pi}{2}$

61	Internal energy of a real gas depends upon:-
Alt1	Only on pressure of the gas
Alt2	Size of the molecule
Alt3	Only on volume of the gas
Alt4	Only on temperature of the gas

62	For a human eye with pupil diameter of 3mm, it would be able to resolve the two points at 10m separated by a distance of (assume wavelength of 600nm):-
Alt1	2mm
Alt2	5 x 102 m
Alt3	5 x 104 m
Alt4	20 microns

63	The displacement of wave is given as 20 sin (200t-0.01x). The amplitude of the particle velocity is given as (All quantities are in SI Units):-
Alt1	4000 m/s
Alt2	40 m/s
Alt3	20 m/s
Alt4	10 m/s

64	If $\vec{A}$ is an orthogonal matrix, then A^T is:-
Alt1	A
Alt2	A-
Alt3	-A-1
Alt4	A-1

65	Which of the following are the Eigen values of the matrix $\begin{pmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{pmatrix}$:-
Alt1	1,3,4
Alt2	1,2,3
Alt3	2,3,4
Alt4	2,3,5

66	If $m\vec{i}+2\vec{j}+\vec{k}$ and $4\vec{i}-9\vec{j}+2\vec{k}$ are perpendicular then m is:-
Alt1	8
Alt2	-4
Alt3	4
Alt4	12

67	In the Levi-civita tensor $\varepsilon_{\mu\nu\lambda}$, if μ,ν, and λ are odd-permuting, then $\varepsilon_{\mu\nu\lambda}$ is equal to
Alt1	-1
Alt2	1
Alt3	2
Alt4	0

68	The space craft of mass M moves with velocity v in free space, at first. Then it explodes breaking inti two pieces. After the explosion, a piece of mass m remains stationary, the other piece of space craft will have a velocity:-
Alt1	Mv/(M+m)
Alt2	mv/(M+m)
Alt3	mv/(M-m)
Alt4	Mv/(M-m)

69	A long straight copper wire of circular cross section of radius R contains N electrons per unit volume, moving at velocity v. If the charge of each electron is q then, the current in the wire is equal to
Alt1	$qv\pi R^2N$
Alt2	qv
Alt3	qvN
Alt4	$q\pi R^2N$

70	An air-filled parallel plate capacitor has square plates of side L that are separated by distance D. The capacitor is filled with a dielectric slab with relative permittivity ε_r. What is the change in the stored energy of the system due to filling of dielectric, if the plates have a constant charge Q ?
Alt1	$\frac{Q^2 D}{2\varepsilon_o L^2}\left(\frac{1}{\varepsilon_r}-1\right)$
Alt2	$\frac{Q^2 D}{2\varepsilon_o L^2}\left(\frac{1}{\varepsilon_r}\right)$
Alt3	$\frac{Q^2 D}{2\varepsilon_o L^2}(\varepsilon_r-1)$
Alt4	$\frac{Q^2 L}{2\varepsilon_o D^2}\left(\frac{1-\varepsilon_r}{\varepsilon_r}\right)$

71	A capacitor of capacitance C is connected across a dc battery of potential difference V. How much work must be done in order to double the plate separation with the battery connected?
Alt1	Zero
Alt2	$\frac{CV^2}{4}$
Alt3	$\frac{CV^2}{2}$
Alt4	$\frac{CV^2}{8}$

72	Two point charges q_1 and q_2 are restricted to move along the x- and the y-axes respectively. At time $t = 0$, both charges are at origin, and start with the same uniform speed v. Then, at any time $t > 0$ the Lorentz force on q_2 due to the magnetic field of q_1 will be
Alt1	Parallel to z-axis
Alt2	Parallel to x-axis
Alt3	Parallel to y-axis
Alt4	Zero

73	A straight long wire of circular cross-section of radius R carries a uniform current density J. Let r be the radial distance (perpendicular distance) measured from the axis of the wire. Then,
Alt1	Magnetic field varies like r for $r < R$.
Alt2	Magnetic field varies like r for $r > R$.
Alt3	Magnetic field varies like r^{-2} for $r < R$.
Alt4	Magnetic field varies like r^{-1} for $r > R$.

74	The total internal reflection for glass-water interface (nair= 1.00, nglass=1.55 and nwater=1.33):-
Alt1	41.8°
Alt2	56.3°
Alt3	62.7°
Alt4	40.6°

75	Two Plano-convex lenses each of radius of curvature R1 and R2 are used to observe Newtons ring with their curved surfaces in contact with each other in light of wavelength 'λ'. The radius of the 9th dark ring would be:-
Alt1	{(R1 +R2)/(9 λ R1 R2)}1/2
Alt2	9{(λ R1 R2)/(R1 +R2)}1/2
Alt3	{(λ R1 R2)/ 9(R1 +R2)}1/2
Alt4	{(9 λ R1 R2)/(R1 +R2)}1/2

76	A particle is moving under the potential $V(x)=\left[(x-1)^2-4\right]^2$. At what values of x, is the potential minimum?
Alt1	1 and 3
Alt2	-3 and 3
Alt3	-1 and 1
Alt4	-1 and 3

77	A refracting surface separates two medium with refractive index of n1 and n2. All the rays parallel to major axis will focus onto one of the foci of the ellipse if the eccentricity of ellipse is equal to:-
Alt1	(n1/n2)1/2
Alt2	n1/n2
Alt3	n1*n2
Alt4	(n1/n2)2

78	The electric potential at a perpendicular distance r from a long straight wire of cross-sectional radius a is given by $$V(r)=-K\log\frac{r}{a}$$ where K is a constant. Then, the charge per unit length of the wire is
Alt1	K
Alt2	2πK
Alt3	2πKεo
Alt4	2πεo

79	A steady current I flows in a circular loop of radius R. The magnitude field at the center of the loop is:-
Alt1	$\mu_0 I/(2\pi R)$
Alt2	$\mu_0 I/(4\pi R)$
Alt3	Zero
Alt4	$\mu_0 I/(2R)$

80	A capacitor of capacitance C is charged to V volts using a battery. The battery is then disconnected, and an inductor of inductance L is connected in series with the capacitor so that the LC oscillations occur. Assuming that the circuit contains no resistance, the maximum current in the coil is
Alt1	$V\sqrt{C/L}$
Alt2	Q/LC
Alt3	$V\sqrt{L/C}$
Alt4	$\sqrt{Q^2/LC}$

81	##
Alt1	I0/4
Alt2	I0/8
Alt3	I0
Alt4	I0/2

82	Number of Fresnel zones in a radius of 2cm of zone plate for an object kept at a distance of 10cm has the brightest image at 40cm for the incident light of wavelength 500nm:-
Alt1	1000
Alt2	10000
Alt3	2500
Alt4	5000

83	What are the reasons for choosing the smallest size of base and smallest impurity doping level of base for designing transistor amplifier:-
Alt1	To increase the mobility of the carriers entering the base and also to reduce the more recombination of the carriers entering the base
Alt2	To increase the mobility of the carriers entering the base and also to increase the more recombination of the carriers entering the base
Alt3	To reduce the mobility of the carriers entering the base and also to increase the more recombination of the carriers entering the base
Alt4	To reduce the mobility of the carriers entering the base and also to reduce the more recombination of the carriers entering the base

84	The electric field $\vec{E}$ at the center of a charged solid cylindrical conductor is
Alt1	Zero
Alt2	$\frac{qr}{4\pi\varepsilon_{\circ}R^3}$
Alt3	Infinite
Alt4	$\frac{q}{4\pi\varepsilon_{\circ}R^2}$

85	Let R1 be the resistance of a conductor with length l and cross-sectional area A. Another conductor of same material has length 2l and cross-sectional area 2A. The resistance R2 of the second conductoris related to R 1 by:-
Alt1	R1 = 4R2
Alt2	R1 = 2R2
Alt3	R2 = 2R1
Alt4	R1 = R2

86	At a given temperature, the ratio of the RMS velocity of hydrogen to the RMS velocity of oxygen is:-
Alt1	1/4
Alt2	8
Alt3	16
Alt4	4

87	A block with mass m and contact area ‘a’ slides down an inclined plane with friction, covering a distance l in time T. How much time does it take another block with the same mass and composition, but contact area ‘2a’, to slide down the same length?
Alt1	T3
Alt2	T2
Alt3	T4
Alt4	T

88	Clouds float in the atmosphere on account of:-
Alt1	Low density
Alt2	Low viscosity
Alt3	Creation of low pressure
Alt4	Low temperature

89	The capacitance of a single isolated spherical conductor with conductor with radius R is proportional to:-
Alt1	R

Alt2	1 / R2
Alt3	1 / R
Alt4	R2

90	A copper wire has cross-sectional area A. Assume that a current I passes through the wire. If n is the number of electrons per unit volume, and e is the charge on the electron, then which of the following could be the correct expression for drift velocity vd of the electrons?
Alt1	$v_d = \frac{eI}{nA}$
Alt2	$v_d = \frac{I}{neA}$
Alt3	$v_d = \frac{LA}{ne}$
Alt4	$v_d = \frac{nI}{eA}$

91	The terminal velocity of small sized spherical body of radius r falling in a viscous liquid is:-
Alt1	µr
Alt2	µr2
Alt3	µ1/r2
Alt4	µ1/r

92	For two objects A and B, if mass of A is same as mass of B and speed of A is twice as much as that of B, which one of following statements is correct?
Alt1	Kinetic energy of A = (1/4) x Kinetic energy of B
Alt2	Kinetic energy of A = > Kinetic energy of B
Alt3	Kinetic energy of A = Kinetic energy of B
Alt4	Kinetic energy of A = 4 x Kinetic energy of B

93	Water raises in a capillary tube to a height of 4 cm. If the area of cross section is one-forth, the water will rise to a height of:-
Alt1	2 cm
Alt2	8 cm
Alt3	4 cm
Alt4	16 cm

94	A dielectric slab is slowly inserted between the plates of a parallel plate capacitor, while the potential difference between the plates is held constant by a battery. As it is being inserted

Alt1	No change happens to any physical quantity.
Alt2	the potential difference between the plates increases, while the charge on the positive plate decreases, and the capacitance remains the same.
Alt3	the capacitance, the potential difference between the plates, and the charge on the positive plate will all increase.
Alt4	the capacitance and the charge on the positive plate will increase but the potential difference between the plates will remain the same.

95	An incompressible fluid flows steadily through a cylinder pipe which has radius2 R at a point A and radius R at B further along the flow direction. If the velocity at point A is v, its velocity at point B will be:-
Alt1	4 v
Alt2	v/2
Alt3	2 v
Alt4	v

96	The difference between Type-I and Type-II superconductors is:-
Alt1	that the Type-II superconductors are not perfectly diamagnetic in its superconducting state.
Alt2	that the Type-II superconductors do not exhibit Meissner effect in its superconducting state.
Alt3	the existence of two critical magnetic fields between which the Type-II is partially superconducting
Alt4	the existence of two critical temperatures between which the Type-II is partially superconducting

97	Energy stored in a stretched wire is:-
Alt1	(1/2) load x extension
Alt2	(1/2) stress x strain
Alt3	Load x strain
Alt4	Stress x strain

98	An electron of wavelength λ undergoes Bragg reflection from one of the atomic planes in a crystal when it approaches the plane at a particular angle. Another crystal leads to the same order of scattered beam for the same angle of incidence only if the momentum of the electron is doubled. If the lattice spacing in the first case is a, then the lattice spacing in the second case is equal to :-
Alt1	2a
Alt2	a

Alt3	λ
Alt4	a / 2

99	When the force applied by a person is 2 N and the moment of force is 16 N m, then the distance of pivot from effort is:-
Alt1	8 N
Alt2	18 N
Alt3	32 N
Alt4	14 N

100	Two water drops merge to form a large drop in this process:-
Alt1	Energy neither liberated nor absorbed
Alt2	Energy is absorbed
Alt3	Some mass is converted into energy
Alt4	Energy liberated