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India's Number 1 Education App

## PHYSICS

## NTA MOCK TESTS ENGLISH

## NEET MOCK TEST 2

Physics

1. Two long straight conductors with current
$I_{1}$ and $I_{2}$ are placed along X and Y axes. The equation of locus of points of zero magnetic
induction is :

A. $y=x$
B. $y=\frac{I_{2} x}{I_{1}}$
C. $y=\frac{I_{1}}{I_{2}} x$
D. $y=\frac{x}{I_{1} I_{2}}$

Answer: C
2. The bob of simple pendulum is a spherical hollow ball filled with water. A plugged hole near the bottom of the oscillating bob gets suddenly unplugged. During observation, till water is coming out, the time period of oscillation would.
A. First increase and then decrease to the original value
B. First decrease and then increase to the original value
C. Remain unchanged
D. Increase towards a saturation value

## Answer: A

## D Watch Video Solution

3. If $\mathrm{n}, \mathrm{e}, \tau, \mathrm{m}$, are representing electron density charge, relaxation time and mass of an electron respectively then the resistance of
wire of length I and cross sectional area A is

## given by

$$
\begin{aligned}
& \text { A. } \frac{m l}{n e^{2} \tau A} \\
& \text { B. } \frac{m \tau A}{n e^{2} l} \\
& \text { C. } \frac{n e^{2} \tau A}{m} \cdot \frac{A}{l} \\
& \text { D. } \frac{n e^{2} m}{\tau} \cdot \frac{l}{A}
\end{aligned}
$$

Answer: A
4. At room temperature copper has free electron density of $8.4 \times 10^{28}$ perm $^{3}$. The copper conductor has a cross-section of $10^{-6} \mathrm{~m}^{2}$ and carries a current of 5.4 A. What is the electron drift velocity in copper?
A. $4 m s^{-1}$
B. $0.4 m s^{-1}$
C. $4 \mathrm{~cm} \mathrm{~s}^{-1}$
D. $0.4 \mathrm{~mm} \mathrm{~s}^{-1}$

Answer: D
5. Three charges $-q_{1},+q_{2}$ and $-q_{3}$ are placed
as shown in the figure. The $x$-component of
the force on $-q_{1}$ is proportional to

A. $\frac{q_{2}}{b^{2}}-\frac{q_{3}}{a^{2}} \cos \theta$
B. $\frac{q_{2}}{b^{2}}+\frac{q_{3}}{a^{2}} \sin \theta$

> C. $\frac{q_{2}}{b_{2}}+\frac{q_{3}}{a^{2}} \cos \theta$
> D. $\frac{q_{2}}{b^{2}}-\frac{q_{3}}{a^{2}} \sin \theta$

Answer: B

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6. A real inverted image in a concave mirror is
represented by ( $u, v, f$ are corrdinates)


C.

D.


Answer: A

## D Watch Video Solution

7. A table fan, rotating at a speed of 2400 rpm , is switched off and the resulting variation of the rpm with time is shown in the figure. The total number of revolutions of the fan before it comes to rest is
A. 420
B. 280
C. 240
D. 380

Answer: B

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8. A ball rolls off the top of a stairway with a horizontal velocity of magnitude $1.8 m s^{-1}$.

The steps are $0.20 m$ high and $0.20 m$ wide.

Which step will the ball hit first ?
$\left(g=10 m s^{-2}\right)$.
A. First
B. Second

## C. Third

D. Fourth

## Answer: D

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9. Consider the situation shown in figure. The
wall is smooth but the surfces of $A$ and $B$ in contact are rough. The friction on $B$ due to $A$
in equilibrium.

A. Is upward
B. Is downward
C. Is zero

# D. The system cannot remain in equilibrium 

## for any value of $F$

Answer: B

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10. The electromagnetic waves travel in free
space with the velocity of
A. sound
B. Light

## C. Greater than that of light

D. Greater than that of sound

Answer: B

## D Watch Video Solution

11. The displacement time graph of a moving particle is shown below


The instantaneous velocity of the particle is negative at the point
A. C
B. E
C. D
D. F

Answer: B

## D Watch Video Solution

12. A stone is thrown at $25 m / s$ at $53^{\circ}$ above the horizontal. At what time its velocity is at $45^{\circ}$ below the horizontal?
A. 0.5 s
B. 4 s
C. 3.5 s
D. 2.5 s

## Answer: C

## - Watch Video Solution

13. The forward biased diode connection among the following is
A. $\xrightarrow{+2 V} \triangle-m n^{-2 V}$
B. $\stackrel{-3 v}{\longrightarrow-m L^{-3 v} \text {. }}$
C. $\xrightarrow{2 V} \underset{\sim}{ }$
D. $\stackrel{-2 v}{ }+1-m L^{2 v}$

## Answer: A

## - Watch Video Solution

14. The length I, breadth b , and thickness $t$ of a block of wood were measured with the help os a measuring scale. The results with permissible errors (in cm ) are
$l=15.12 \pm 0.01, b=10.15 \pm 0.01 \quad, \quad$ and
$t=5.28 \pm 0.01$.

The percentage error in volume up to proper significant figures is
A. $0.64 \%$
B. $0.26 \%$
C. $0.35 \%$
D. $0.48 \%$

Answer: C

D Watch Video Solution
15. A $100 \mathrm{~V}, \mathrm{AC}$ source of frequency of 500 Hz is connected to an L-C-R circuit with
$L=8.1 m H, C=12.5 \mu F, R=10 \Omega \quad$ all
connected in series as shown in figure. What is
the quality factor of circuit?

A. 2.02
B. 2.54
C. 50.54
D. 200.54

Answer: B

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16. Assertion (A) : The film which appears bright in reflected system will appear dark in the transmitted system and vice-versa.

Reason (R) : The conditions for film to appear bright or dark in the reflected light are just reverse to those in the transmitted light
A. (A) is true and (R) is true and (R) is the correct explanation of (A).
B. (A) and (R) are true but (R) is not the correct explanation of (A)
C. (A) is true, (R) is false
D. (A) is false, (R) is true

## Answer: A

## D Watch Video Solution

17. Two pendulum have time period $T$ and $5 T / 4$
. They starts SHM at the same time from the
mean position. What will be the phase
difference between them after the bigger pendulum completed one oscillation ?
A. $\pi / 2$
B. Zero
C. $2 \pi / 5$
D. $\pi / 4$

Answer: C
( Watch Video Solution
18. A ring shaped tube contain two ideal gases
with equal masses and molar masses
$M_{1}=32$ and $M_{2}=28$.

The gases are separated by one fixed partition
$P$ and another movable stopper $S$ which can
move freely without friction inside the ring.

The angle $\alpha$ as shown in the figure is
degrees.

A. $182^{\circ}$
B. $170^{\circ}$
C. $192^{\circ}$
D. $180^{\circ}$

Answer: C

## - Watch Video Solution

19. A mass M of 100 kg is suspended with the use of strings $A, B 90$ and $C$ as shown in the figure, where W is the vertical wall and R is a rigid horizontal rod. The tension in the string $B$ is

A. 100 gN
B. Zero
C. $100 \sqrt{2} g N$
D. $\frac{100}{\sqrt{2}} g N$

Answer: A

## D Watch Video Solution

20. An inverted vessel (ball) lying at the bottom of a lake, 47.6 m deep, has 50 c.c. of air trapped in it. The bell is brought to the
surface of the lake. The volume of the trapped
air will now be (Atmospheric pressure is 70 cm
of Hg , density of $\mathrm{HG}-13.6 \mathrm{~g} \mathrm{~cm}{ }^{-3}$ )
A. $350 \mathrm{~cm}^{3}$
B. $300 \mathrm{~cm}^{3}$
C. $250 \mathrm{~cm}^{3}$
D. $22 \mathrm{~cm}^{3}$

Answer: B

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21. In the experiment to determine the focal
length of a concave mirror by graphical methods the $u-v$ graph is
A. A straight line
B. A circle
C. An ellipse
D. None of these

## Answer: D

22. A polarized light of intensity $I_{0}$ is passed through another polarizer whose pass axis makes an angle of $60^{\circ}$ with the pass axis of the former, What is the intensity of emergent polarized light from second polarizer?
A. $I=I_{0}$
B. $I=\frac{I_{0}}{6}$
C. $I=\frac{I_{0}}{5}$
D. $\frac{I_{0}}{4}$
23. Electromagnetic waves propagate in the direction parallel to the vector
A. $\vec{E}$
B. $\vec{B}$
C. $\vec{E} \times \vec{B}$
D. $\vec{B} \times \vec{E}$

Answer: C
24. A point object $O$ is placed at a distance of
0.3 m from a convex lens of focal length 0.2 m .

It is then cut into two halves each of which is displaced by 0.0005 m as shown in figure.

image will be formed from the lens at a distance of
A. 30 cm
B. 40 cm
C. 50 cm
D. 60 cm

Answer: D
( Watch Video Solution
25. A chain of length $l<\frac{\pi R}{2}$ is placed on a smooth surface whose some part is horizontal
and some part is on quarter circular of radius
R in the vertical plane as shown. Initially the
whole part of chain lies in the circular part
with one end at topmost point of circular
surface. If the mass of chain is $m$, then work required to pull very slowly the whole chain on
horizontal part is -


$$
\begin{aligned}
& \text { A. } \frac{m}{l} g R^{2}\left[\sin \left(\frac{l}{R}\right)\right] \\
& \text { B. } \frac{m}{l} g R^{2}\left[\cos \left(\frac{l}{R}\right)\right] \\
& \text { C. } \frac{m}{l} g R^{2}\left[\left(\frac{l}{R}\right)-\sin \left(\frac{l}{R}\right)\right] \\
& \text { D. } \frac{m}{l} g R^{2}\left[\left(\frac{l}{R}\right)-\cos \left(\frac{l}{R}\right)\right]
\end{aligned}
$$

Answer: C
26. The radii of two planets are respectively
$R_{1}$ and $R_{2}$ and their densities are respectively $\rho_{1}$ and $\rho_{2}$. The ratio of the accelerations due to gravity $\left(g_{1} / g_{2}\right)$ at their surfaces is

> A. $g_{1}: g_{2}=\frac{\rho_{1}}{R_{1}^{2}}: \frac{\rho_{2}}{R_{2}^{2}}$
> B. $g_{1}: g_{2}=R_{1} R_{2}: \rho_{1} \rho_{2}$
> C. $g_{1}: g_{2}=R_{1} \rho_{2}: R_{2} \rho_{1}$
D. $g_{1}: g_{2}=R_{1} \rho_{1}: R_{2} \rho_{2}$

## Answer: D

## D Watch Video Solution

27. The efficiency of a Carnot engine working between 800 K and 500 K is -
A. 0.45
B. 0.625
C. 0.375
D. 0.5

Answer: B

## D Watch Video Solution

28. In a resonance pipe the first and second resonance are obtained at depths 22.7 cm and
70.2 respectively. What will be the end correction?
A. 1.05 cm
B. 115.5 cm
C. 92.5 cm

## D. 113.5 cm

## Answer: A

## D Watch Video Solution

29. In an excited state of hydrogen like atom
an electron has total energy of $-3.4 e V$. If the kinetic energy of the electron is $E$ and its deBroglie wavelength is $\lambda$, then

$$
\text { A. } E=6.8 \mathrm{e} V, \lambda=6.6 \times 10^{-10} \mathrm{~m}
$$

$$
\begin{aligned}
& \text { B. } 3.4 \mathrm{e} V, \lambda=6.6 \times 10^{-10} \mathrm{~m} \\
& \text { C. } E=3.4 \mathrm{e} V, \lambda=6.6 \times 10^{-11} \mathrm{~m} \\
& \text { D. } E=6.8 \mathrm{e} V, \lambda=6.6 \times 10^{-11} \mathrm{~m}
\end{aligned}
$$

## Answer: C

## D Watch Video Solution

# 30. What is the dimensional formula of $\frac{1}{\mu_{0} \varepsilon_{0}}$ $\mu_{0} \varepsilon_{0}$ 

 where the symbols have their usual meanings?A. $M^{0} L^{2} T^{-2}$
B. $M^{0} L^{-2} T^{-2}$
C. $M^{0} L^{-2} T^{-2}$
D. $M^{0} L^{1} T^{-2}$

## Answer: A

## D Watch Video Solution

31. A bob of mass $M$ is suspended by a massless string of length L. The horizontal velocity v at position A is just sufficient to make it reach the point B . The angle $\theta$ at which
the speed of the bob is half of that at $A$, satisfies

A. $\theta=\frac{\pi}{4}$
B. $\frac{\pi}{4}<\theta<\frac{\pi}{2}$
C. $\frac{\pi}{2}<\theta<\frac{3 \pi}{4}$
D. $\frac{3 \pi}{4}<\theta<\pi$

Answer: C

## - Watch Video Solution

32. Velocity displacement graph of a particle moving in a straight line is as shown in figure.


## A. <br> 

B.

-
C.


Answer: A
33. A drum of radius $R$ and mass $M$, rolls down without slipping along an inclined plane of angle $\theta$. The frictional force-

# A. Converts translational energy to 

rotational energy
B. Dissipates energy as heat
C. Decreases the rotational motion
D. Decreases
the
rotational
and
translational motion

Answer: A

## D Watch Video Solution

34. A sample of.${ }^{18} F$ is used internally as a medical diagnostic tool to look for the effects of the positron decay $\left(T_{1 / 2}=110 \mathrm{~min}\right)$. How long does it take for $99 \%$ of the.$^{18} F$ to decay?
A. 12.4 h
B. ${ }^{`} 12.0 \mathrm{~h}$
C. 12.2 h
D. 12.5 h

## Answer: C

## D Watch Video Solution

35. If the mass of neutron is $1.7 \times 10^{-27} \mathrm{~kg}$,
then the de Broglie wavelength of neutron of energy 3 eV is $\left(h=6.6 \times 10^{-34} \mathrm{~J} . s\right)$
A. $1.6 \times 10^{-16} m$

> B. $1.6 \times 10^{-11} m$
> C. $1.4 \times 10^{-10} m$
> D. $1.4 \times 10^{-11} m$

Answer: B

## D Watch Video Solution

36. A magnetic needle free to rotate in a vertical plane parallel to the magnetic meridian has its north tip pointing down at $22^{\circ}$ with the horizontal. The horizontal
component of the earth's magnetic field at the
place is known to be 0.35 G . Determine the magnitude of the earth's magnetic field at the place.
A. 0.38 G
B. 0.35 G
C. 0.30 G
D. 0.40 G

## Answer: A

37. Four rods of equal length $l$ and mass $m$
each forms a square as shown in figure

Moment of inertia about three axes 1,2 and 3
are say $I_{1}, I_{2}$ and $I_{3}$. Then, match the following columns


Column-I
Column-II
(A) $I_{1}$
(p) $\frac{4}{3} m l^{2}$
(B) $I_{2}$
(q) $\frac{2}{3} m l^{2}$
(C) $\quad I_{3}$
(r) $\frac{1}{2} m l^{2}$
(s) None
A. (A)-Q, (B)-S, (C)-Q
B. (A) $-\mathrm{S},(\mathrm{B})-\mathrm{Q},(\mathrm{C})-\mathrm{Q}$
C. (A)-Q, (B) $-\mathrm{Q},(\mathrm{C})-\mathrm{S}$
D. (A) $-R,(B)-Q,(C)-S$

Answer: A

## - Watch Video Solution

38. A room at $20^{\circ} \mathrm{C}$ is heated by a heater of resistence 20 ohm connected to 200 V mains.

The temperature is uniform throughout the room and the heati s transmitted through a glass window of area $1 m^{2}$ and thickness 0.2 cm. Calculate the temperature outside.

Thermal conductivity of glass is $0.2 \mathrm{cal} / \mathrm{mC}^{\circ}$
$s$ and mechanical equivalent of heat is $4.2 \mathrm{~J} / \mathrm{cal}$.
A. $13.69^{\circ} \mathrm{C}$
B. $15.24^{\circ} \mathrm{C}$
C. $17.85^{\circ} \mathrm{C}$
D. $19.96^{\circ} \mathrm{C}$

Answer: B
( Watch Video Solution
39. A gas mixture coinsists of (2) moles of oxygen and (4) moles of argon at temperature
(T). Neglecting all vibrational modes, the total internal energy of the system is (jee 1999)
(a) 4 RT (b) 15 RT (c) 9 RT (d) 11 RT .
A. 4 RT
B. 15 RT
C. 9 RT
D. 11 RT

Answer: D
40. A waveform shown when applied to the following circuit will produce which of the following output waveform? [Assuming ideal diode configuration and $R_{1}=R_{2}$ ]


B.


## Answer: D

## D Watch Video Solution

41. The maximum energy in thermal radiation
from a source occurs at the wavelength

4000A. The effective temperature of the source
A. 7325 K
B. 800 K
C. $10^{4} K$
D. $10^{6} K$

Answer: A
( Watch Video Solution
42. A bob of mass $m$ is tied with a thread and
is made to move in a circular path on a
frictionless table surface about point 'O' as
shown in diagram. A hypothetical electric field
in radial direction exists along the table
surface. In this condition the bob is uncharged
and tension in the thread is T . If bob is given
some charge-

A. Tension is thread must increase
B. Tension in thread may increase or
decrease
C. Tension in thread will remain unchanged
D. Tension in thread must decrease

Answer: B

## - Watch Video Solution

43. An accurate pendulum clock is mounted on
ground floor of a high building. How much
time will it lose or gain in one day if its is transferred to top storey of a building which is
$h=200 m$ higher than the ground floor?
Radius of earth is $6.4 \times 10^{6}$
A. It will lose 6.2 s
B. It will lose 2.7 s
C. It will gain 5.2 s
D. It will gain 1.6 s

Answer: B

## D Watch Video Solution

44. The distance of centre of mass from point

O of two square plates system, as shown,( if masses of plates are $2 m$ and $m$ and their
edges are 'a' and ' 2 a ' respectively) is

A. $\frac{a}{2}$
B. a
C. $\frac{3 a}{2}$
D. $\frac{2 a}{3}$

## - Watch Video Solution

45. The field of view is maximum for
A. plane mirror
B. concave mirror
C. convex mirror
D. None of these

Answer: C

## - Watch Video Solution

46. An electric dipole of length 2 cm is placed with its axis making an angle of $60^{\circ}$ to a uniform electric field of $10^{5} \mathrm{NC}^{-1}$ if its experiences a torque is $8 \sqrt{3} \mathrm{Nm}$, calculate the
(i). Magnitude of the charge on the dipole and
(ii). potential energy of the dipole.
A. $-10 J$
B. $-20 J$
C. $-30 J$

## D. $-40 J$

## Answer: C

## D Watch Video Solution

47. A proton and an electron are released from
an infinite distance apart and they get attracted towars each other. Which of the following statement about their kinetic energy is true?
A. Kinetic energy of electron is more than
that of proton
B. Kinetic energy of electron is less than
that of proton
C. Kinetic energy of electron $=$ kinetic
energy of proton
D. None of the above is true as it depends
on the distance between the particles

## Answer: A

# 48. The ratio of potential differences between 

$1 \mu F$ and $5 \mu F$ capacitors is

A. 1: 2
B. $3: 1$

## C. $1: 5$

D. $10: 1$

## Answer: C

## D Watch Video Solution

49. In a meter bridge circuit as shown in the
figure, the bridge is balanced when $A J=20$ cm . On interchanging $P$ and $Q$ the balance

## length shifts by


A. zero
B. 80 cm
C. 40 cm
D. 60 cm

## Answer: D

## D Watch Video Solution

50. The ratio of the resistances of a conductor at a temperature of $15^{\circ} \mathrm{C}$ to its resistance at
a temperature of $37.5^{\circ} \mathrm{C}$ is $4: 5$. The temperature coefficient of resistance of the conductor is
A. $\frac{1}{25} \cdot{ }^{\circ} C^{-1}$
B. $\frac{1}{50} \cdot{ }^{\circ} C^{-1}$
C. $\frac{1}{80} \cdot{ }^{\circ} C^{-1}$
D. $\frac{1}{75} \cdot{ }^{\circ} C^{-1}$

Answer: D

- Watch Video Solution

51. When a material is inserted inside the
inductor the current in the circuit increases,
then the nature of the material is

A. ferromagnetic
B. paramagnetic
C. diamagnetic
D. all of the above

Answer: C
52. A flux of $10^{-3} W b$ passes through a strip having an area $A=0.02 m^{2}$. The plane of the strip is at an angle of $60^{\circ}$ to be direction of a uniform field $B$. The value of $B$ is
A. 0.1 T
B. 0.058 T
C. 4.0 mT
D. none of the above.

Answer: B

## D Watch Video Solution

53. Consider the situation shown in figure. If
the current $I$ in the long straight wire $x y$ is
increased at a steady rate the induced current
in loop $A$ and $B$ will be

A. clockwise in $A$, anticlockwise in $B$
B. anticlockwise in A, clockwise in B
C. clockwise in both A and B
D. anticlockwise in both A and B

## Answer: A

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54. Magnetic susceptibility of a diamagnetic
A. decreases with temperature
B. is not affected by temperature
C. increases with temperature
D. first increases, then decreases with
temperature

## Answer: B

## D Watch Video Solution

55. De Broglie wavelength of 0.05 eV thermal neutron is
A. $1.3 \AA$
B. $2 \AA$
C. $5.4 \AA$
D. $8 \AA$

Answer: A
( Watch Video Solution
56. The maximum velocity of electrons emitted
from a metal surface is $v$ when the frequecny of light falling on it is $f$. The maximum velocity when the frequency becomes $4 f$ is
A. 2 v
B. $>2 v$
C. $<2 v$
D. between $2 v$ and $4 v$

## Answer: B

57. Choose the wrong statement
A. The nuclear force becomes weak if the nucleus contains too many protons compared to the number of neutrons
B. The nuclear force becomes weak if the nucleus contains too many neutrons
compared to the number of protons
C. Nuclei with atomic number greater than

82 show a tendency to disintegrate
D. The nuclear force becomes very strong if
the nucleus contains a large number of nucleons

## Answer: D

## - Watch Video Solution

58. Number jof nuclei of radioactive substance at time $\mathrm{t}=0$ are 1000 and 9000 at time $\mathrm{t}=2 \mathrm{~s}$.

Then number of nuclie at time $t=4 \mathrm{~s}$ will be
A. 800
B. 810
C. 790
D. 700

Answer: B

## D Watch Video Solution

59. Which of the following is wheat fruit?

A. Water

B. Alcohol
C. Glycerine
D. Oil

Answer: A

D Watch Video Solution
60. When $p$ calories of heat is given to a body,
it absorbs $q$ calories, then the absorbtion
power of body will be :-
A. $\frac{p}{q}$
B. $\frac{q}{p}$
C. $\frac{p^{2}}{q^{2}}$
D. $\frac{p^{2}}{p^{2}}$

Answer: B

## D Watch Video Solution

61. One likes to sit under sunshine in winter seasons, because
A. we get heat from the sun by conduction
B. we get heat from the sun by convection
C. we get heat from the sun by radiation
D. none of the above

## Answer: C

## - Watch Video Solution

62. A piece of glass is heated to a high temperature and then allowed to cool. If it
cracks, a probable reason for this is the following property of glass
A. low thermal conductivity of glass
B. high thermal conductivity of glass
C. high specific heat of glass
D. high melting point ot glass

Answer: A

## D Watch Video Solution

63. The velocity of kerosene oil in a horizontal
pipe is $5 m / s$. If $g=10 m / s^{2}$ then the velocity
head of oil wlill be
A. 1.25 m
B. 12.5 m
C. 0.125 m
D. 125 m

Answer: A

- Watch Video Solution

64. A force of 100 dynes acts on mass of 5 gm
for 10 sec . The velocity produced is
A. $2 \mathrm{cms}^{-1}$
B. $20 \mathrm{cms}^{-1}$
C. $200 \mathrm{cms}^{-1}$
D. $2000 \mathrm{cms}^{-1}$

Answer: C
( Watch Video Solution
65. if temperature of an object is $140^{\circ} \mathrm{F}$, then
its temperature in centigrade is
A. $105^{\circ} \mathrm{C}$
B. $32^{\circ} \mathrm{C}$
C. $140^{\circ} \mathrm{C}$
D. $60^{\circ} \mathrm{C}$

Answer: D

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66. If specific heat of a substance is infinite it

## means

A. heat is given out
B. heat is taken in
C. no change in temperature takes place
whether heat is taken in or given out
D. all of the above

## Answer: C

67. A tuning fork sounded together with a tuning fork of frequency 256 emits two beats.

On loading the tuning fork of frequency 256 , the number of beats heard are 1 per second.

The frequency of tuning fork is
A. 257
B. 258
C. 256
D. 254

## Answer: D

## D Watch Video Solution

68. If the phase difference between the two
wave is $2 \pi$ during superposition, then the resultant amplitude is
A. maximum
B. minimum
C. maximum or minimum
D. none of the above

Answer: A

## D Watch Video Solution

69. When a sound wave of frequency 300 Hz
passes through a medium the maximum
displacement of a particle of the medium is 0.1
cm . The maximum velocity of the particle is
equal to
A. (a) $60 \pi \mathrm{cms}^{-1}$
B. (b) $30 \pi \mathrm{cms}^{-1}$

## C. (c) $30 \mathrm{cms}^{-1}$

D. (d) $60 \mathrm{cms}^{-1}$

## Answer: A

## D Watch Video Solution

70. A particle executing SHM of amplitude 4
cm and $\mathrm{T}=4 \mathrm{~s}$. The time taken by it to move
from positive extreme position to half the amplitude is
A. 1s
B. $\frac{1}{3} s$
C. $\frac{2}{3} s$
D. $\sqrt{\frac{3}{2}} s$

Answer: C

D Watch Video Solution
71. The thermal conductivity of a material in

CGS system os 0.4. In steady state, the rate of
flow of heat is $10 \mathrm{cal} / \mathrm{sec}-\mathrm{cm}^{2}$. Then the
thermal gradient will be

A. $10^{\circ} \mathrm{Ccm}^{-1}$<br>B. $12^{\circ} \mathrm{Ccm}^{-1}$<br>C. $25^{\circ} \mathrm{Ccm}^{-1}$<br>D. $20^{\circ} \mathrm{Ccm}^{-1}$

Answer: C
( Watch Video Solution

## 72. If 150 J of heat is added to a system and the

 work done by the system is 110 j . then change in internal energy wil beA. 260 J
B. 150 J
C. 110 J
D. 40 J

Answer: D

- Watch Video Solution

73. The volume of a gas at $20^{\circ} \mathrm{C}$ is 200 ml . If
the temperature is reduced to $-20^{\circ} \mathrm{C}$ at constant pressure, its volume will be :-
A. (a) 172.6 ml
B. (b) 17.26 ml
C. (c) 192.7 ml
D. (d) 19.27 ml

Answer: A

- Watch Video Solution

74. The apparent coefficient of expansion of
liquid, when heated in a copper vessel is $C$ and when heated in a silver vessel is $S$. If $A$ is
the linear coefficient of expansion of Copper, linear expansion coefficient of silver is

$$
\begin{aligned}
& \text { A. } \frac{C+S-3 A}{3} \\
& \text { B. } \frac{C+3 A-S}{3} \\
& \text { C. } \frac{S+3 A-C}{3} \\
& \text { D. } \frac{C+S+3 A}{3}
\end{aligned}
$$

## - Watch Video Solution

75. In the glass capillary tube, the shape of the surface of the liquid depends upon
A. only on the cohesive force of liquid molecules
B. only on the abhesive force between the molecules of glass and liquid
C. only on relative cohesive and adhesive
D. neither on cohesive nor on adhesive

force

## Answer: C

## D Watch Video Solution

76. A beam of metal supported at the two ends
is loaded at the centre. The depression at the
centre is proportional to
A. $Y^{2}$
B. $Y$

> C. $\frac{1}{Y}$
> D. $\frac{1}{Y^{2}}$

## Answer: C

## - Watch Video Solution

77. IF the earth stops rotating, the value of ' $g$ ' at the equator will
A. increase
B. remain same
C. decrease
D. none of the above

## Answer: A

## D Watch Video Solution

78. A force $\vec{F}=(5 \hat{i}+3 \hat{j}) N$ is applied over a particle which displaces it from its original position to the point $\vec{s}=S(2 \hat{i}-1 \hat{j}) m$. The work done on the particle is
A. $-7 J$
B. $+13 J$
C. $+7 J$
D. $+11 J$

Answer: C

## D Watch Video Solution

79. One account of the earth rotating about its axis :
A. the linear velocity of objects at equator is greater than at other places
B. the angular velocity of objects at equator is more than that of objects at poles

# C. the linear velocity of objects at all places 

at the earth is equal, but angular
velocity is different
D. at all places the angular velocity and
linear velocity are uniform

Answer: A

## D Watch Video Solution

80. A particle $A$ suffers an oblique elastic collision particle $B$ that is at rest initially. If
their masses with a are the same, then after the collision
A. they will move in opposite directions
B. A continues to move in the original
direction while $B$ remains at rest
C. they will move in mutually perpendicular
directions
D. A comes to rest and B starts moving in
the direction of the original motion of $A$

## Answer: C

## D Watch Video Solution

81. A circular disc $A$ of radius $r$ is made from an iron plate of thickness $t$ and another circular disc $B$ of radius $4 r$ is made from an iron plate
of thickness $t / 4$. The relation between the moments of inertia $I_{A}$ and $I_{B}$ is (about an axis passing through centre and perpendicular to the disc)
A. $I_{A}>I_{B}$
B. $I_{A}=I_{B}$
C. $I_{A}<I_{B}$
D. depends on the actual values of $t$ and $r$.

## Answer: C

82. If one sphere collides head - on with another sphere of the same mass at rest inelastically. The ratio of their speeds $\left(\frac{v_{2}}{v_{1}}\right)$ after collision shall be

$$
\begin{aligned}
& \text { A. } \frac{(1-e)}{(1+e)} \\
& \text { B. } \frac{2 e}{(1+e)} \\
& \text { C. } \frac{(1+e)}{(1-e)} \\
& \text { D. } \mathrm{e}
\end{aligned}
$$

83. The tube AC forms a quarter circule in a vertical plane. The ball B has an area of cross section slightly smaller than that of the tube and can move without friction through it. $B$ is
placed at A and displaced slightly. It will

A. always be in contact with the inner wall
of the tube
B. always be in contact with the outer wall
of the tube

# C. initially be in contact with the inner wall 

## and later with the outer wall

# D. initially be in contact with the outer wall 

## and later with the inner wall

## Answer: C

## D Watch Video Solution

84. Statement-1: There are two spheres made of same amount of material, one of them is hollow and other is solid. They are heated to
same temperature and left in identical
surroundigs. The initial rate of cooling will be greater for hollow sphere. Statement-2: The rate of heat loss depends on surface area and temperature.
A. both will expand equally
B. hollow sphere will expand more
C. solid sphere will expand more
D. the relative expansion of solid and hollow sphere depends on the material of sphere

Answer: A

## D Watch Video Solution

85. A TV tower has a height of 100 m . How much population is covered by TV broadcast. If the average population density around the tower is $1000 \mathrm{~km}^{-2}$ ? (radius of earth $=$ $\left.6.4 \times 10^{6} \mathrm{~m}\right)$

$$
\text { A. } 2 \times 10^{6}
$$

B. $4 \times 10^{6}$
C. $3 \times 10^{8}$
D. $9 \times 10^{4}$

Answer: B

## D Watch Video Solution

86. A horizontal wid is blowing with a velocity
$v$ towards north-east. A man starts running
towards north with acceleration $a$. The after
which man will feel the wind blowing towards
east is
A. $\frac{v}{a}$
B. $\frac{\sqrt{2} v}{a}$
C. $\frac{v}{\sqrt{2} a}$
D. $\frac{2 v}{a}$

Answer: C

## D Watch Video Solution

87. At time t second, a particle of mass 3 kg has position vector $r$ metre, where
$r=3 t \hat{i}-4 \cos t \hat{j}$. Find the impulse of the
force during the time interval $0 \leq t \leq \frac{\pi}{2}$
A. (a) $12 \hat{j} N s$
B. (b) $9 \hat{j} N s$
C. (c) $4 \hat{j} N s$
D. (d) $14 \hat{j} N s$

Answer: A

D Watch Video Solution
88. IF an electron enters into a space between
the plates of a parallel plate capacitor at an an
angle $\alpha$ with the plates an leaves at angle
$\beta$ to the plates find the ratio of its kinetic energy while entering the capacitor of that while leaving.
A. $\left(\frac{\sin \beta}{\sin \alpha}\right)^{2}$
B. $\left(\frac{\cos \beta}{\cos \alpha}\right)^{2}$
C. $\left(\frac{\cos \alpha}{\cos \beta}\right)^{2}$
D. $\left(\frac{\sin \alpha}{\sin \beta}\right)^{2}$

Answer: B

## - Watch Video Solution

89. Four rods each of length $l$ have been
hinged to from a rhombus. Vertex $A$ is fixed to
a rigid support vertex $C$ is being moved along the $x$-axis with a constant velocity $v$ as shown
in the figure. The rate at which vertex $B$ is approaching the $x$-axis at the moment the
rhombus is in the form of a square is

A. $\frac{v}{4}$
B. $\frac{v}{3}$
C. $\frac{v}{2}$
D. $\frac{v}{\sqrt{2}}$

Answer: C
(D) Watch Video Solution
90. The angular velocity of a body is $\vec{\omega}=2 \hat{i}+3 \hat{j}+4 \hat{k} \quad$ and $\quad$ a torque $\vec{\tau}=\hat{i}+2 \hat{j}+3 \hat{k}$ acts on it. Calculate the rotational power?
A. 20 W
B. 15 W
C. $\sqrt{17} W$
D. $\sqrt{14} W$

Answer: A

## - Watch Video Solution

91. The potential energy of a particle of mass 5
kg moving in the $x-y$ plane is given by
$U=(-7 x+24 y) J$, where x and y are given
in metre. If the particle starts from rest, from
the origin, then the speed of the particle at
$t=2 \mathrm{~s}$ is
A. $5 \mathrm{~m} / \mathrm{s}$
B. $10 \mathrm{~m} / \mathrm{s}$
C. $14 \mathrm{~m} / \mathrm{s}$
D. $17.5 \mathrm{~m} / \mathrm{s}$

Answer: B

D Watch Video Solution
92. If the friction is sufficient to prevent the
block from sliding, then the minimum value of
F for which the cube begins to topple about
an edge is

A. $\frac{2}{3} m g$

$$
\begin{aligned}
& \text { B. } \frac{3}{4} m g \\
& \text { C. } \frac{1}{2} m g \\
& \text { D. } m g
\end{aligned}
$$

Answer: B

## D Watch Video Solution

93. A uniform cylinder rolls down from rest, on
a track whose vertical cross - section is a parabola given by the equation $y=k x^{2}$. If the
surface is rough from $A$ to $B$ due to which the
cylinder doesn't slip but it is frictionless from
$B$ to $C$, then the height of ascent of cylinder towards C is

A. $\frac{y_{1}}{3}$
B. $\frac{2 y_{1}}{3}$
C. $\frac{3 y_{1}}{2}$
D. $y_{1}$

Answer: B

## - Watch Video Solution

94. A magnet of magnetic moment $M$ is situated with its axis along the direction of a magnetic field of strength $B$. The work done in rotating it by an angle of $180^{\circ}$ will be
A. MB
B. 2 MB
C. -2 MB
D. zero

## Answer: D

## D Watch Video Solution

95. A projectile is thrown with a velocity of 20 $m / s$, at an angle of $60^{\circ}$ with the horizontal.

After how much time the velocity vector will
make an angle of $45^{\circ}$ with the horizontal (in upward direction) is (take $\mathrm{g}=10 \mathrm{~m} / \mathrm{s}^{2}$ ) -
A. $\sqrt{3} s$
B. $\frac{1}{\sqrt{3}} s$
C. $(\sqrt{3}+1) s$
D. $(\sqrt{3}-1) s$

Answer: D

- Watch Video Solution

96. A sample contains large number of nuclei.

The probability that a nucleus in sample will decay after four half lives is

> A. (a) $\frac{1}{4}$
> B. (b) $\frac{3}{4}$
> C. (c) $\frac{15}{16}$
> D. (d) $\frac{7}{16}$

Answer: C

D Watch Video Solution
97. Photoelectric emission is observed from a
metallic surface for frequencies $v_{1}$ and $v_{2}$ of
the incident light rays $\left(v_{1}>v_{2}\right)$. If the maximum values of kinetic energy of the photoelectrons emitted in the two cases are in
the ratio of $1: k$, then the threshold frequency of the metallic surface is
A. $\frac{n_{1}-n_{2}}{k-1}$
B. $\frac{k n_{1}-n_{2}}{k-1}$
C. $\frac{k n_{2}-n_{1}}{k-1}$

$$
\text { D. } \frac{n_{2}-n_{1}}{k}
$$

## Answer: B

## D Watch Video Solution

98. In a compound microscope, the focal
length of two lenses are 1.5 cm and 6.25 cm . If
an object is placed is 2 cm from objective and
the final image is formed at 25 cm from eye
len., the distance between the two lensese is
A. 6.00 cm
B. 7.75 cm
C. 9.25 cm
D. 11.00 cm

## Answer: D

## - Watch Video Solution

99. When a ray is reflected from one medium
to another,the wavelength changes from
$6000 \AA$ to $4000 \AA$. The critical anlge for the interfance will be:
A. $\cos ^{-1}\left(\frac{2}{3}\right)$
B. $\sin ^{-1}\left(\frac{2}{3}\right)$
C. $\tan ^{-1}\left(\frac{3}{2}\right)$
D. $\sin ^{-1}\left(\frac{2}{\sqrt{13}}\right)$

Answer: B

## D Watch Video Solution

100. A 100 V ac source of frequency 500 Hz is connected to an LCR circuit with
$L=8.1 \mathrm{mH}, C=12.5 \mu F$ and $R=10 \Omega$, all
connected in series, the potential difference across the resistance is
A. 100 V
B. 200 V
C. 300 V
D. 400 V

Answer: A

D Watch Video Solution
101. A rod of length I rotates with a small but uniform angular velocity $\omega$ about its perpendicular bisector. A uniform magnetic field $B$ exists parallel to the axis of rotation.

The potential difference between the centre of the rod and an end is
A. zero
B. $\frac{1}{2} \omega B l^{2}$
C. $\omega B l^{2}$
D. $2 \omega B l^{2}$

Answer: A

## D Watch Video Solution

102. In the figure, which of the diode is in
reverse bias



## Answer: B

## - Watch Video Solution

103. In the figure shown below each battery has emf $=5 \mathrm{~V}$. Then the magnetic field at P is

A. (a)zero
B. (b) $\frac{10 \mu_{0}}{R_{1}(4 \pi)(.2)}$
C. (c) $\frac{20 \mu_{0}}{R_{1}+R_{2}(.8 \pi)}$
D. (d) none of these

Answer: A
104. Two long parallel wires are 30 cm apart carrying currents 10 A and 15 A respectively in
the same direction. The force acting over a length of 5 m of the wires is
A. $5 \times 10^{-4} N, \quad$ (attraction)
B. $1 \times 10^{-4} N, \quad$ (attraction)
C. $5 \times 10^{-4} N, \quad$ (repulsion)
D. $1 \times 10^{-4} N, \quad$ (repulsion)

## - Watch Video Solution

105. The resistance of a moving coil galvanometer is $20 \Omega$. It requires 0.01 A current for full - scale deflection. The value of resistance to convert it into a voltmeter of the range 20 V will be
A. $198 \Omega$
B. $1980 \Omega$
C. $20 \Omega$
D. $0 \Omega$

Answer: B

## D Watch Video Solution

106. Consider the situation shown in . The wire
$A B$ is slid on the fixed rails rails with a constant velocity. If the wire $A B$ is replaced by
a semicircular wire, the magnitude of the induced current will
(\#\#HCV_VOL2_C38_E01_021_Q01\#\#)
A. increase
B. remain the same
C. decrease
D. increase of decrease depending on
whether the semicircle bulges towards
the resistance or away from it

## Answer: B

## D Watch Video Solution

107. The coefficient of friction between two
surface is 0.2. The maximum angle of friction is
A. (a) $\sin ^{-1}(0.2)$
B. (b) $\cos ^{-1}(0.2)$
C. (c) $\tan ^{-1}(0.1)$
D. (d) $\cot ^{-1}(5)$

Answer: D
(D) Watch Video Solution
108. The ratio of thermal conductivity of two rods of different material is $5: 4$. The two rods of same area of cross-section and same thermal resistance will have the lengths in the ratio
A. $4: 5$
B. $9: 1$
C. $1: 9$
D. 5: 4

Answer: D
109. When a dielectric slab is gradually inserted between the plates of an isolated parallel-plate capacitor, the energy of the system decreases.What can you conclude about the force on the slab exerted by the electric field?
A. increase
B. decrease
C. remain unchanged

## D. become zero

## Answer: C

## D Watch Video Solution

110. The effective capacitance of two capacitors of capacitances $C_{1}$ and
$C_{2}\left(C_{2}>C_{1}\right)$ connected in parallel is $\frac{25}{6}$ times the effective capacitance when they are connected in series. The ratio $\frac{C_{2}}{C_{1}}$ is A. $\frac{3}{2}$
B. $\frac{4}{3}$
C. $\frac{5}{3}$
D. $\frac{25}{6}$

Answer: A

## D Watch Video Solution

111. A particale moves under the effect of a force $F=C x$ from $x=0$ to $x=x_{1}$. The work down in the process is
A. $c x_{1}^{2}$
B. $\frac{1}{2} c x_{1}^{2}$
C. $c x_{1}^{3}$
D. zero

Answer: B

## D Watch Video Solution

112. Root mean square speed of an ideal gas at

300 K is $500 \mathrm{~m} / \mathrm{s}$. Temperature is increased
four times then root mean square speed will become
A. (a) $1000 \mathrm{~m} / \mathrm{s}$
B. (b) $560 \mathrm{~m} / \mathrm{s}$
C. (c) $2000 \mathrm{~m} / \mathrm{s}$
D. (d)none of these

Answer: A
( Watch Video Solution
113. When a laser beam returns after reflection
from an aeroplane, the observed change in
frequency is $1 \%$, then the speed of the aeroplane is (c is the velocity of light)

> A. $\frac{c}{50}$
> B. $\frac{c}{100}$
> C. $\frac{c}{200}$
> D. $\frac{c}{2}$

## Answer: C

114. A ring consisting of two parts $A D B$ and
$A C B$ of same conductivity k carries an amount of heat $H$ The $A D B$ part is now replaced with another metal keeping the temperature $T_{91}$ ) and $T_{2}$ constant The heat carried increases to $2 H$ what should be the conductivity of the new $A D B$ Given
$A C B$
$A D B=3$

A. $\frac{7}{3} K$
B. $2 K$
C. $\frac{5}{2} K$
D. 3 K

Answer: A

## D Watch Video Solution

115. the period of oscillation of a simple pendulum of length $L$ suspended from the roof of a vehicle which moves without friction down an inclined plane of inclination $\propto$, is given by.

$$
\begin{aligned}
& \text { A. } 2 \pi \sqrt{\frac{L}{g \cos \alpha}} \\
& \text { B. } 2 \pi \sqrt{\frac{L}{g \sin \alpha}}
\end{aligned}
$$

C. $2 \pi \sqrt{\frac{L}{g}}$
D. $2 \pi \sqrt{\frac{L}{g \tan \alpha}}$

Answer: A

## D Watch Video Solution

116. Potential energy of a 3 kg body at the surface of a planet is $-54 J$, then escape velocity will be :
A. (a) $18 m s^{-1}$
B. (b) $162 m s^{-1}$
C. (c) $36 m s^{-1}$
D. (d) $6 m s^{-1}$

## Answer: D

## D Watch Video Solution

117. A projectile is fired vertically upwards from
the surface of earth with a velocity of $k v_{e}$ where $v_{e}$ is the escape velocity and $k<1$.

Neglecting air resistance, the maximum height
to which it will rise, measured from the centre of the earth, is ( $R_{E}=$ radius earth )

$$
\begin{aligned}
& \text { A. } \frac{R}{k^{2}+1} \\
& \text { B. } \frac{k^{2} R}{1-k^{2}} \\
& \text { C. } \frac{R}{1-k^{2}} \\
& \text { D. } \frac{k^{2} R}{k^{2}+1}
\end{aligned}
$$

Answer: C

## D Watch Video Solution

118. A uniform rod of length $6 a$ and mass $8 m$
lies on a smooth horizontal table. Two particle of masses $m$ and $2 m$, moving in the same horizontal plane but in opposite directions with speeds 2 v and v respectively strike and rod normally as shown in figure and stick to the rod. Denoting angular velocity ( about the centre of mass), total energy and transnational velocity of centre of mass by $\omega, E$
and $v_{c}$ respectively after the collision.

A. zero
B. $\frac{2 v}{3 a}$
C. $\frac{v}{5 a}$
D. $\frac{3 v}{5 a}$

Answer: C

## - Watch Video Solution

119. When induced emf in inductor coil is $50 \%$ of its maximum value then stored energy in inductor coil in the given circuit at that instant will be:-

A. 2.5 mJ
B. 5 mJ
C. 15 mJ
D. 20 mJ

Answer: A

## D Watch Video Solution

120. The magnetic flux through a coil varies
with time as $\phi=5 t^{2}-6 t+9$. The ratio of
E.M.F. at $t=0 s$ to $t=0.5 s$ will be
A. (a) $9: 1$
B. (b) $1: 6$
C. (c) $6: 1$
D. (d) $1: 9$

## Answer: C

## D Watch Video Solution

121. Specific resistance of a wire depends on its
A. length of the wire
B. area of cross - section of the wire
C. resistance of the wire
D. material of the wire

## Answer: D

## D Watch Video Solution

122. What is the ratio of the electrostatic potential at the corner and the centre point of a charged conducting cube? (The potential is considered 0 at infinity)
A. $2: 1$
B. $4: 1$
C. $1: 2$
D. 1:1

## Answer: D

## D Watch Video Solution

123. The work done by all the forces (external and internal) on a system equals the change in
A. (a)total energy
B. (b )kinetic energy
C. (c )potential energy
D. (d) none of these

## Answer: B

## - Watch Video Solution

124. The potential energy of an object of mass m moving in ry plane in a conservative field is given by $U=a x+b y$, where $x$ and $y$ are
position coordinates of the object. Find magnitude of its acceleration :-

$$
\begin{aligned}
& \text { A. } \frac{a b}{m} \\
& \text { B. }\left(\frac{a+b}{m}\right) \\
& \text { C. } \frac{\sqrt{a^{2}+b^{2}}}{m} \\
& \text { D. } \frac{a^{2}+b^{2}}{m}
\end{aligned}
$$

Answer: C

## D Watch Video Solution

125. A ball of mass 1 kg moving with a velocity
of $0.4 \mathrm{~ms}^{-1}$ collides with another stationary
ball. After the collision, the first ball moves
with a velocity of $0.3 \mathrm{~ms}^{1}$ in a direction making
an angle of $90^{\circ}$ with its initial direction. The
momentum of the second ball after the
collision will be (in $\mathrm{kg} \mathrm{ms}{ }^{-1}$ )
A. 0.1
B. 0.3
C. 0.5

## D. 0.7

## Answer: C

## - Watch Video Solution

126. An interference is observed due to two coherent sources separated by a distance $5 \lambda$ along $Y$-axis, where $\lambda$ is the wavelength of light A detector $D$ is moved along the positive $X$-axis The number of point on the $X$-axis
excluding the points $\mathrm{x}=0$ and $x=\infty$ at which

## resultant intensity will be maximum are

A. three
B. four
C. two
D. infinite

Answer: A
( Watch Video Solution
127. A convex lens A of focal length 20 cm and a concave lens $G$ of focal length 5 cm are kept along the same axis with the distance $d$ between them. If a parallel beam of light falling on $A$ leaves $B$ as a parallel beam, then distance d in cm will be
A. 20
B. 15
C. 30
D. 50

Answer: B

## D Watch Video Solution

128. A variable force $F$ acts along the $x$-axis given by $F=\left(3 x^{2}\right)-2 x+1 N$. The work done by the force when a particle of mass 100 $g$ moves from $x=50 \mathrm{~cm}$ to $x=100 \mathrm{~cm}$ is
A. (a) 0.625 J
B. (b) 6.25 J
C. (c) 0.0625 J

## D. (d) 62.5 J

## Answer: A

## - Watch Video Solution

129. Two blocks of masses m and 2 m are
placed one over the other as shown in
figure.The coefficient of friction between $m$ and 2 m is $\mu$ and between 2 m and ground is $\frac{\mu}{3}$
. If a horizontal force $F$ is applied on upper block and T is tension developed in string,
then choose the incorrect alternative.

A. If $F=\frac{\mu}{2} m g, T=0$
B. If $F=\mu m g, T=0$
C. If $F=2 \mu m g, T=\frac{\mu m g}{3}$
D. If $F=3 \mu m g, T=0$

## Answer: C

130. According to Bohr's theory, the time averaged magnetic field at the centre (i.e. nucleus) of a hydrogen atom due to the motion of electrons in the $n^{\text {th }}$ orbit is proportional to :
( $\mathrm{n}=$ principal quantum number)

$$
\begin{aligned}
& \text { A. } \frac{1}{n^{3}} \\
& \text { B. } \frac{1}{n^{5}} \\
& \text { C. } n^{5}
\end{aligned}
$$

D. $n^{3}$

## Answer: B

## D Watch Video Solution

131. The half - life of a radioactive substance is

50 days. The substance will disintegrate
completely in
A. 50 days
B. 500 days

## C. 5000 days

D. infinite time

## Answer: D

## D Watch Video Solution

132. Which of the following curves is correct?

A.

C.

D. None of these

## Answer: A

## D Watch Video Solution

133. A simple telescope consisting of an
objective of focal length 60 cm and a single
eye lens of focal length 5 cm is focused on a distant object in such a way that parallel rays emerge from eye lens. If the object subtends an angle of $2^{\circ}$ at the objective, the angular width of the image is (Let $\tan \theta \square \theta$ assuming small).
A. $50^{\circ}$
B. $\left(\frac{1}{6}\right)^{\circ}$
C. $10^{\circ}$
D. $24^{\circ}$
134. An equilateral prism produces a minimum deviation of $30^{\circ}$. The angle of incidence is
A. (a) $120^{\circ}$
B. (b) $60^{\circ}$
C. (c) $90^{\circ}$
D. (d)none of these

Answer: B

