



PHYSICS

BOOKS - NEET PREVIOUS YEAR (YEARWISE + CHAPTERWISE)

NEET 2020

Others

1. Light with an average flux of $20 \frac{W}{m^2}$ falls on a non-reflecting surface at normal

incidence having surface area 20cm^2 . The energy received by the surface during time span of 1 minute is:

A. $10 \times 10^3 \text{ J}$

B. $12 \times 10^3 \text{ J}$

C. $24 \times 10^3 \text{ J}$

D. $48 \times 10^3 \text{ J}$

Answer:



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2. For transistor action, which of the following statements are correct ?

A. base, emitter and collector regions should have same doping concentrations

B. base, emitter and collector regions should have same size

C. both emitter junction as well as collector junction are forward biased

D. the base region must be very thin and
lightly doped

Answer:



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3. which of the following graph represents the
variation of resistivity (ρ) with temperature (T)
for copper?

A.



B.



C.



D.



Answer:



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4. In certain region of space with volume 0.2 m^3 the electric potential is found to be 5V throughout. The magnitude of electric field is this region is

A. zero

B. 0.5 N/C

C. 1 N/C

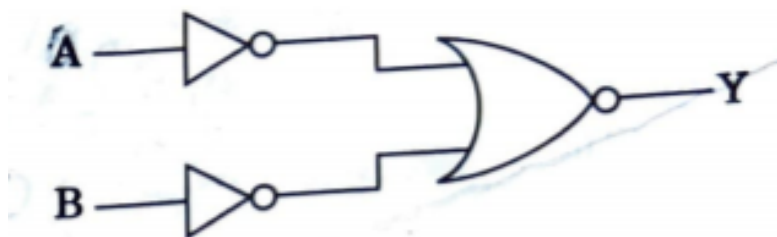
D. 5 N/C

Answer:



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5. For the logic circuit shown the truth table is



A.

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

B.

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

C.

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

D.

Answer:



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6. A 40microF capacitor is connected to a 200V, 50 Hz ac supply. Rms value of current in

circuit is nearly

A. 1.7A

B. 2.05A

C. 2.5A

D. 25.1A

Answer:



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7. A cylinder contains hydrogen gas at pressure of 249kPa and temperature 27°C . Its density is ($R = 8.3\text{Jmol}^{-1}\text{K}^{-1}$)

A. $0.5\text{k}\frac{\text{g}}{\text{m}^3}$

B. $0.2\text{k}\frac{\text{g}}{\text{m}^3}$

C. $0.1\text{k}\frac{\text{g}}{\text{m}^3}$

D. $0.02\text{k}\frac{\text{g}}{\text{m}^3}$

Answer:



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8. Taking into account of significant figures what is value of $9.99\text{m} - 0.0099\text{m}$?

A. 9.9801 m

B. 9.98 m

C. 9.980 m

D. 9.9 m

Answer:



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9. The mean free path for gas with molecular diameter d and number density n can be expressed as:

A. $\frac{1}{\sqrt{2}n\pi d}$

B. $\frac{1}{\sqrt{2}n\pi d^2}$

C. $\frac{1}{\sqrt{2}n^2\pi d^2}$

D. $\frac{1}{\sqrt{2}n^2\pi^2 d^2}$

Answer:



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10. An iron rod of susceptibility 599 is subjected to a magnetising field of 1200 A/m . The permeability of material of rod is: ($\mu_0 = 4\pi \times 10^{-7} \text{ Tm A}^{-1}$)

A. $2.4\pi \times 10^{-4} \text{ Tm A}^{-1}$

B. $8.0 \times 10^{-5} \text{ Tm A}^{-1}$

C. $2.4\pi \times 10^{-5} \text{ Tm A}^{-1}$

D. $2.4\pi \times 10^{-7} \text{ Tm A}^{-1}$

Answer:



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11. A short electric dipole has dipole moment of $16 \times 10^{-9} \text{ C m}$. The electric potential due to dipole at a point at a distance of 0.6m from centre of dipole situated on a line making an angle of 60 degrees with dipole axis:

A. 50V

B. 200V

C. 400V

D. zero

Answer:



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12. A body weighs 72N on surface of earth what is gravitational force on it at a height equal to half radius of earth

A. 48N

B. 32N

C. 30N

D. 24N

Answer:



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13. The solids which have negative temperature coefficient of resistance are:

A. metals

B. insulators only

C. semiconductors only

D. insulators and semiconductors

Answer:



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14. Light of frequency 1.5 times the threshold frequency is incident on a photodensitive material . What will be the photoelectric current if frequency is halved and intensity is doubled

A. doubled

B. four times

C. one-fourth

D. zero

Answer:



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15. A series LCR circuit is connected to an ac voltage source. When L is removed from the circuit, the phase difference between current

and voltage is $\frac{\pi}{3}$. If instead C is removed from the circuit phase difference is again $\frac{\pi}{3}$ between current and voltage. Power factor of circuit is:

A. zero

B. 0.5

C. 1

D. -1

Answer:



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16. A spherical conductor of radius 10 cm has a charge of $3.2 \times 10^{-7} \text{ C}$ distributed uniformly. What is magnitude of electric field at point 15 cm from centre of sphere?

A. $1.28 \times 10^4 \frac{\text{N}}{\text{C}}$

B. $1.28 \times 10^5 \frac{\text{N}}{\text{C}}$

C. $1.28 \times 10^6 \frac{\text{N}}{\text{C}}$

D. $1.28 \times 10^7 \frac{\text{N}}{\text{C}}$

Answer:



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17. Find the torque about the origin when a force of $3\hat{j}$ N acts on a particle whose position vector is $2\hat{k}$ m

A. $6\hat{i} \frac{N}{m}$

B. $6\hat{j} \frac{N}{m}$

C. $-6\hat{i} \frac{N}{m}$

D. $6\hat{k} \frac{N}{m}$

Answer:



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18. A charged particle having drift velocity of $7.5 \times 10^{-4} \frac{m}{s}$ in an electric field of $3 \times 10^{-10} \frac{V}{m}$ has a mobility $\in m^2 V^{-1} s^{-1}$

A. 2.25×10^{15}

B. 2.5×10^6

C. 2.5×10^{-6}

D. 2.25×10^{-15}

Answer:



19. A ray is incident at an angle of incidence i on one surface of a small angle prism (with angle of prism A) and emerges normally from opposite surface. If refractive index of material of prism is μ then the angle of incidence is nearly equal to

A. $\frac{A}{2\mu}$

B. $\frac{2A}{\mu}$

C. μA

D. $\frac{\mu A}{2}$

Answer:



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20. The quantities of heat required to raise the temperature of two solid copper spheres of radii r_1 and r_2 ($r_1 = 1.5r_2$) through 1K are in ratio

A. $27/8$

B. 44078

C. 43892

D. 43954

Answer:



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21. When a uranium isotope U is bombarded with a neutron, it generates k three neutrons

A. Ba

B. Zr

C. Kr

D. Kr

Answer:



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22. The phase difference between displacement and acceleration of particle in a simple harmonic motion is

A. πrad

B. $3\frac{\pi}{2} rad$

C. $\frac{\pi}{2} rad$

D. zero

Answer:



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23. A resistance wire connected in left gap of a metre bridge balances a 10 ohm resistance in right gap at point which divides bridge wire in

ratio 3:2. if length of resistance wire is 1.5 m
then length of 1 ohm of resistance wire is

A. $1 \times 10^{-2} m$

B. $1 \times 10^{-1} m$

C. $1.5 \times 10^{-1} m$

D. $1.5 \times 10^{-2} m$

Answer:



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24. A capillary tube of radius r is immersed in water and water rises in to a height h . The mass of water in the capillary tube is 5g. Another capillary tube of radius $2r$ is immersed in water. The mass of water that will rise in this tube is

A. 2.5g

B. 5.0 g

C. 10.0g

D. 20.0g

Answer:



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25. The ratio of contributions made by electric field and magnetic field components to intensity of em wave is

A. $c:1$

B. 0.0423611111111111

C. $1:c$

D. $1:c^2$

Answer:



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26. In young's double slit experiment if the separation between coherent sources is halved and the distance of the screen from coherent sources is doubled, then the fringe width becomes:

A. doubled

B. half

C. four times

D. one-fourth

Answer:



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27. A long solenoid of 50 cm length having 100 turns carries a current of 2.5A. The magnetic field at centre of solenoid is:

A. $6.28 \times 10^{-4} T$

B. $3.14 \times 10^{-4} T$

C. $6.28 \times 10^{-5} T$

D. $3.14 \times 10^{-5} T$

Answer:



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28. A ball is thrown vertically downward with velocity of 20 m/s from top of tower. It hits ground after some time with a velocity of 80 m/s . Height of tower is

A. 360 m

B. 340 m

C. 320 m

D. 300 m

Answer:



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29. For which one one of the following bohr model is not valid

A. hydrogen atom

B. single ionised helium atom (He^+)

C. deuteron atom

D. single ionised neon atom (Ne^+)

Answer: D



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30. The average thermal energy for a mono-atomic gas is: (k_B is Boltzmann constant and T , absolute temperature)

A. $\frac{1}{2}k_B T$

B. $\frac{3}{2}k_B T$

C. $\frac{5}{2}k_B T$

D. $\frac{7}{2}k_B T$

Answer:



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31. The increase in the width of the depletion region in a p-n junction diode is due to:

- A. forward bias only
- B. reverse bias only
- C. both forward bias and reverse bias
- D. increase in forward current

Answer:



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32. Two particles of mass 5 kg and 10 kg respectively are attached to the two ends of a rigid rod of length 1 m with negligible mass.

the centre of mass of the system from the 5 kg particle is nearly at a distance of :

A. 33 cm

B. 50 cm

C. 67 cm

D. 80 cm

Answer:



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33. In a guitar , two strings A and b made of same material are slightly out of tune and produce beats of frequency 6 Hz. when tension in B is slightly decreased, the beat frequency increases to 7 Hz. If the frequency of A is 530 hz, the original frequency of B will be

A. 523 hz

B. 524 Hz

C. 536 Hz

D. 537 Hz

Answer:



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34. Two cylinders A and B of equal capacity are connected to each other via a stop cock. A contains an ideal gas at standard temperature and pressure. B is completely evacuated. The stop cock is suddenly opened. The process is:

A. isothermal

B. adiabatic

C. isochoric

D. isobaric

Answer:



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35. The capacitance of a parallel plate capacitor with air as Medium is $6\mu F$. With the introduction of a dielectric medium, the capacitance becomes $30\mu F$. The permittivity of the medium is:

A. $0.44 \times 10^{-13} C^2 N^{-1} m^{-2}$

B. $1.77 \times 10^{-12} C^2 N^{-1} m^{-2}$

C. $0.44 \times 10^{-10} C^2 N^{-1} m^{-2}$

D. $5.00 C^2 N^{-1} m^{-2}$

Answer:



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36. An electron is accelerated from rest through a potential difference of V volt. If the

de Broglie wavelength of the electron is 1.227×10^{-2} nm, the potential difference is:

A. 10V

B. $10^2 V$

C. $10^3 V$

D. $10^4 V$

Answer:



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37. A wire of length L , area of cross section A is hanging from a fixed support. The length of the wire changes to L_1 when mass M is suspended from its free end. The expression for Young's modulus is:

A. $\left(\frac{MgL}{AL} \right)$

B. $\left(\frac{Mg(L_1 - L)}{AL} \right)$

C. $\left(\frac{MgL}{AL_1} \right)$

D. $\left(\frac{MgL}{A(L_1 - L)} \right)$

Answer:



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38. The Brewsters angle i_b for an interface should be:

A. $0^\circ < i_b < 30^\circ$

B. $30^\circ < i_b < 45^\circ$

C. $45^\circ < i_b < 90^\circ$

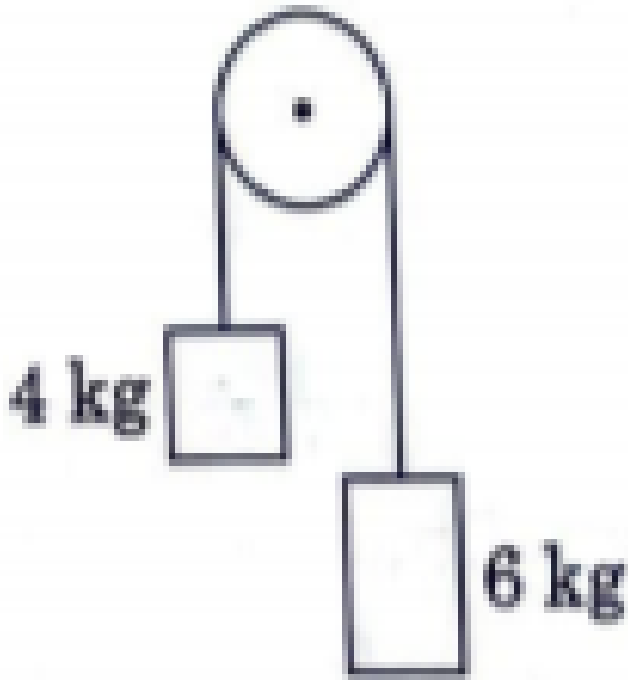
D. $i_b = 90^\circ$

Answer:



39. Two bodies of mass 4 kg and tied to the ends of a massless string. the string passes over a pully which is frictionless (see figure). the acceleration of the system in terms of

acceleration due to gravity (g) is:



A. g

B. $\frac{g}{2}$

C. $\frac{g}{5}$

D. $\frac{g}{10}$

Answer:



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40. Dimensions of stress are:

A. $[MLT^{-2}]$

B. $[ML^2T^{-2}]$

C. $[ML^0T^{-2}]$

D. $[ML^{-1}T^{-2}]$

Answer:



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41. A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale:

The pitch of the screw gauge is:

A. 0.01 mm

B. 0.25 mm

C. 0.5 mm

D. 1.0 mm

Answer:



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42. The energy required to break one bond in DNA is $10^{-20} J$. This value in eV is nearly:

A. 6

B. 0.6

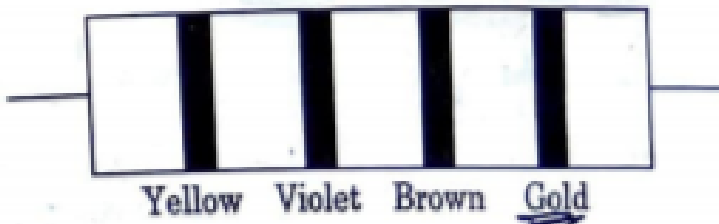
C. 0.06

D. 0.006

Answer:



43. The color code of a resistance is given below:



The value of resistance and tolerance , respectively are

A. 470Kohm , 5 %

B. 47kohm , 10 %

C. 4.7kohm , 5 %

D. 470ohm , 5 %

Answer:



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44. Assume that light of wavelength 600 nm is coming from a star. The limit of resolution of telescope whose objective has a diameter of 2m is:

A. $3.66 \times 10^{-7} \text{rad}$

B. $1.83 \times 10^{-7} rad$

C. $7.32 \times 10^{-7} rad$

D. $6.00 \times 10^{-7} rad$

Answer:



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45. The energy equivalent to 0.5 g of a substance is

A. $4.5 \times 10^{16} J$

B. $4.5 \times 10^{13} J$

C. $1.5 \times 10^{13} J$

D. $0.5 \times 10^{13} J$

Answer:



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