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Physics Mcq's for Different Copetative Exams

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1. Which instrument is used to measure altitudes in aircraft's ?

A. Audiometer ***chemistry astronomy B.***

B. Ammeter

C. ***Anemometer*** ***D. Altimeter***

Answer & Explanation

Answer: Option **D**

Explanation:

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2. Which branch of science plays an important role in the development of technology and engineering?

A. chemistry **B.** physics

C. geology **D.** biology

Answer & Explanation

Answer: Option **B**

Explanation:

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3. The number of categories in which physical quantities are divided are

A. one **B.** two

C. three **D.** four

Answer & Explanation

Answer: Option **B**

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4. How many types of units are in SI?

A. one **B.** two

C. three **D.** four

Answer & Explanation

Answer: Option **C**

Explanation:

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5. In scientific notation numbers are expressed in

A. power of ten **B.** powers of two

C. reciprocal **D.** decimal

Answer & Explanation

Answer: Option **A**

Explanation:

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6. 1024 can be written in scientific notation as

A. 1.024x103 **B.** 2 Raised to power 10

C. 0.000976 **D.** 1/0.00097

Answer & Explanation

Answer: Option **A**

Explanation:

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7. Preftix deca represents

A. 10 Raised to power 1 **B.** 10 Raised to power 2

C. 10 Raised to power 3 **D.** 10 Raised to power -1

Answer & Explanation

Answer: Option **A**

Explanation:

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8. The error in measurement may occur due to

A. inexperience of a person **B.** the faulty apparantus

C. inappropriate method **D.** due to all reasons in a, b and c

Answer & Explanation

Answer: Option **D**

Explanation:

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9. The uncertainty in a measurement may occur due to

A. limitation of an instrument **B.** natural variation of the object to be measured

C. inadequate of technique **D.** all given in a , b and c

Answer & Explanation

Answer: Option **D**

Explanation:

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Random errors can be reduced

by **A.** taking zero correction

comparing the instrument with another more accurate one

taking mean of several measurement

D. all methods explained in a, b and c

Answer & Explanation

Answer: Option **C**

Explanation:

11. In any measurement the significant figures are

all accurately known and all doubtful digits

only accurately known digits

only doubtful digits

all accurately known digits and the first doubuful digit

Answer & Explanation

Answer: Option **D**

Explanation:

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A digit zero in a measurement

may be significant may not significant

always significant

always insignificantsig

significant only if left to a significant figure

Answer & Explanation

Answer: Option **A**

Explanation:

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13. Number of significant figures in 0.0173 are

A. three

B. four

C. five

D. two

Answer & Explanation

Answer: Option **A**

Explanation:

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14. Smaller the least count of the instrument more is the measurement

A. accurate

B. precise

C. accurate and precise

D. none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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15. The dimension of force is

A. MLT-1 **B.** MLT-2

C. ML-1T **D.** ML-1T-2

Answer & Explanation

Answer: Option **B**

Explanation:

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16. ML-1 T-2 is the dimension of

A. force **B.** pressure

C. momentum **D.** energy

Answer & Explanation

Answer: Option **B**

Explanation:

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17. Dimensional analysis is helpful for

A. deriving a possible formula **B.** checking the homogeneity of a physical equation

C. verification of laws **D.** only a and b are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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18. Which equation is not dimensionally correct?

A. E=mc2 **B.** Vf=Vi+at

C. S=Vt2 **D.** S=1/2at2

Answer & Explanation

Answer: Option **C**

Explanation:

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19. SI unit of coefficient of viscosity is

A. Kg.m.S-1 **B.** Kg m-1.S-1

C. Kg.m.S **D.** Kg-1.m-1.S-1

Answer & Explanation

Answer: Option **B**

Explanation:

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Three students measured length of a needle with meter rod and recorded as : (i) 0.2145m (ii) 0.21m (iii) 0.214m Which one is correct record?

A. only (i) **B.** only (ii)

C. only (iii) **D.** both (i) and (ii)

Answer & Explanation

Answer: Option **C**

Explanation:

21. One light year is equal to

A. 9.5x1015m

B. 9.5x1015sec

C. 9.5x1015Km

D. 9.5x1015cm

Answer & Explanation

Answer: Option **A**

Explanation:

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22. Absolute uncertainty in a measurement depends upon

A. magnitude of the measurement

B. least count of the instrument

C. percentage error in the measurement

D. all of a, b and c

Answer & Explanation

Answer: Option **B**

Explanation:

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23. Steradian is the SI unit of

A. plane angle

B. solid angle

both plane angle and solid angle

neither plane angle nor solid angle

Answer & Explanation

Answer: Option **B**

Explanation:

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24. An ideal standard of measurement of a base quantity has characteristics

A. accessible

B. invariable

C. transportable

D. only a and b are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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Total uncertainty, in result obtained from the subtraction of two measurement, is equal to

sum of their absolute uncertainties

difference of their absolute uncertainties

product of their absolute uncertainties

division of their absolute uncertainties

Answer & Explanation

Answer: Option **A**

Explanation:

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26. Which one is the highest power multiple?

A. giga **B.** beta

C. mega **D.** deca

Answer & Explanation

Answer: Option **A**

Explanation:

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27. One pico stands for

A. 10 raised to power -15 **B.** 10 raised to power -12

C. 10 raised to power -9 **D.** 10 raised to power -6

Answer & Explanation

Answer: Option **B**

Explanation:

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28. Unit of G is?

A. Nm2Kg2 **B.** Nm2Kg

C. Nm2Kg-2 **D.** none

Answer & Explanation

Answer: Option **B**

Explanation:

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The unit of force is _____ and its symbol is _____. Which is the correct pair?

A. Newton, n **B.** Newton, N

C. newton, n **D.** newton, N

Answer & Explanation

Answer: Option **D**

Explanation:

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30. How many main frontiers of fundamental science?

A. 1 **B.** 2

C. 3 **D.** 4

Answer & Explanation

Answer: Option **C**

Explanation:

31. Which one is the derived quantity in SI units?

A. electric current **B.** electric charge

C. plane angle **D.** amount of substance

Answer & Explanation

Answer: Option **B**

Explanation:

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32. Which one is the correct representation of the unit of pressure?

A. Newton/Meter2 newton/meter2 **B.**

C. Newton/meter2 **D.** newton/Meter2

Answer & Explanation

Answer: Option **B**

Explanation:

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33. Which one is the dimensionally correct equation?

A. f=vt S=Vit+1/2at2 **B.**

C. V=St **D.** V=f/t

Answer & Explanation

Answer: Option **B**

Explanation:

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34. Zero error of the instrument is a type of

A. random error **B.** personal error

C. systematic error **D.** classified error

Answer & Explanation

Answer: Option **C**

Explanation:

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35. In multiplication and division of measurement

A. percentage uncertainties are added

B. absolute uncertainties are added

C. percentage uncertainties are divided

D. absolute uncertainties are divided

Answer & Explanation

Answer: Option **A**

Explanation:

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36. The number of significant figures in 5.400 are

A. three

B. five

C. two

D. none

Answer & Explanation

Answer: Option **D**

Explanation:

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37. To reduce the uncertainty in the timing experiment

A. highly precise instrument

B. conduct at room temperature

C. count more number of vibration

D. both a and c

Answer & Explanation

Answer: Option **D**

Explanation:

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The unmber of significant figures in the length of a bar 6200mm measured by meter rod are

A. four **B.** three

C. two **D.** none of these

Answer & Explanation

Answer: Option **A**

Explanation:

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39. The number 76.85 is rounded off upto two significant figures as

A. 76.8 **B.** 77

C. 76.9 **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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40. Which of the following is not a correct representation method for prefixes

A. 1mm **B.** 10km

C. 1000um **D.** both (a) and (b)

Answer & Explanation

Answer: Option **C**

Explanation:

Work done will be maximum if the angle between the force F and displacement d is

A. 45? **B.** 90?

C. 180? **D.** 0?

Answer & Explanation

Answer: Option **D**

Explanation:

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A field in which the work done in a moving a body along closed path is zero is called

A. electric field **B.** conservative field

C. electromagnetic field **D.** gravitational field

Answer & Explanation

Answer: Option **B**

Explanation:

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When a force is parallel to the direction of motion of the body, then work done on the body is

A. zero **B.** minimum

C. infinity **D.** maximum

Answer & Explanation

Answer: Option **D**

Explanation:

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Which of the following types of force can do no work on the particle on which it acts?

A. frictional force **B.** gravitational force

C. elastic force **D.** centripetal force

Answer & Explanation

Answer: Option **D**

Explanation:

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If a body a mass of 2 kg is raised vertically through 2m, then the work done will be

A. 38.2 J **B.** 392.1 J

C. 39.2 J **D.** 3.92 J

Answer & Explanation

Answer: Option **C**

Explanation:

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An elevator weighing 3.5 x 10-6 N is raised to a height of 1000 m in the absence of friction, the work done is

A. 3.5 x 103 J **B.** 3.5 x 104 J

C. 3.5 x 106 J **D.** 3.5 x 109 J

Answer & Explanation

Answer: Option **D**

Explanation:

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7. The average power and instantaneous power become equal if work is done at

A. any rate **B.** at variable rate

C. at uniform rate **D.** at high rate

Answer & Explanation

Answer: Option **C**

Explanation:

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8. The relation between horse power and watt is

A. 1 hp = 546 watts **B.** 1 hp = 746 watts

C. 1 hp = 1000 watts **D.** 1 hp = 946 watts

Answer & Explanation

Answer: Option **B**

Explanation:

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Proton electron neutron and a particles have same momentum. Which of them have highest K.E?

A. Proton **B.** electron

C. neutron **D.** a-particle

Answer & Explanation

Answer: Option **B**

Explanation:

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10. Slope of work time graph is equal to

A. displacement **B.** acceleration

C. power **D.** energy

Answer & Explanation

Answer: Option **C**

Explanation:

11. Work done by variable force is determine by dividing

A. force into small interval **B.**

force into small and

C. both force and displacement into small intervals

D. displacement into large intervals

Answer & Explanation

Answer: Option **B**

Explanation:

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Work done on the body equals to

the **A.** change in its K.E always

change in its P.E always

change in its K.E and

C. change in its P.E

neither change in K.E and nor change in its P.E

Answer & Explanation

Answer: Option **C**

Explanation:

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13. The escape velocity of a body in gravitational field of earth is independent of

its mass

the angle at which it is thrown

both its mass and the angle at which it is thrown

gravitational field of earth

Answer & Explanation

Answer: Option **C**

Explanation:

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14. The tides raise the mater in the see roughly in a day

A. once **B.** twice

C. four time **D.** eight time

Answer & Explanation

Answer: Option **B**

Explanation:

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15. The source of geothermal energy is

decay of radioactive element in the earth

compression of material in the earth

residual lost of the earth

all as said in a - b and c

Answer & Explanation

Answer: Option **D**

Explanation:

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16. The highest value of escape velocity in solar system is planet

A. Earth **B.** Neptune

C. Jupiter **D.** Moon

Answer & Explanation

Answer: Option **C**

Explanation:

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17. Work done by the force of friction is

A. always positive

B. always negative

C. positive only for small frictional force

D. positive only for large frictional force

Answer & Explanation

Answer: Option **B**

Explanation:

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18. Gravitational P.E of a body has

A. no formula

B. a formula mgh only

C. a formula

D. no general formula

Answer & Explanation

Answer: Option **D**

Explanation:

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19. If velocity is doubled then

A. momentum increases 4 times and K.E increases 2 times

B. momentum and K.E. remain same

C. momentum increases 2 times and K.E increases constant

D. momentum increases 2 times and K.E increases 4 time

Answer & Explanation

Answer: Option **D**

Explanation:

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20. When the speed of a moving body is doubled then

A. its K.E is doubled

B. its acceleration is doubled

C. its P.E is doubled

D. its momentum is doubled

Answer & Explanation

Answer: Option **D**

Explanation:

21. One mega watt hour is equal to

A. 36 x 106 J

B. 36 x 1012 J

C. 36 x 109 J

D. 36 x 108 J

Answer & Explanation

Answer: Option **D**

Explanation:

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22. Which of the following is not conservative force

A. friction

B. electric

C. gravitational **D.** magnetic

Answer & Explanation

Answer: Option **A**

Explanation:

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23. Work has the dimension as that of same as that of

A. torque **B.** angular momentum

C. linear momentum **D.** power

Answer & Explanation

Answer: Option **A**

Explanation:

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24. The consumption of energy by a 60 watt bulb in 2 sec is

A. 120 J **B.** 60 J

C. 30 J **D.** 0.02 J

Answer & Explanation

Answer: Option **A**

Explanation:

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The relation between the escape velocity V esc and orbital speed Vo is given by

A. V esc = 1/2Vo

B. V esc = ?2 Vo

C. V esc = Vo

D. V esc = 2Vo

Answer & Explanation

Answer: Option **B**

Explanation:

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26. The escape velocity form the earth surface in km S-1 is

A. 4.2 km S-1

B. 7.5 km S-1

C. 9.5 km S-1

D. 1.1 km S-1

Answer & Explanation

Answer: Option **D**

Explanation:

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If moon radius is 1600 km and g on its surface is 1.6 ms-2 then the escape velocity on the moon is

A. 1600 ms-1

B. 50.6 ms-1

C. 71.6 ms-1

D. 2263ms-1

Answer & Explanation

Answer: Option **B**

Explanation:

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When two protons are brought together **A.** Kinetic energy increases P.E. between them increases

P.E. between them decreases P.E. between tem does not change

Answer & Explanation

Answer: Option **B**

Explanation:

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29. When arrow is released form its bow, its energy is transformed from

A. heat energy to K.E **B.** elastic P.E to K.E

C. elemical energy to elastic P.E **D.** K.E to elastic P.E.

Answer & Explanation

Answer: Option **B**

Explanation:

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A man lifts vertically a weight of 40kg through 1m in 10s; while a chile lifts vertically a weight of 10kg through a distance of 1m in 1s. What will be correct inference?

man does more work than child child does more work than man

C. both do the same amount of work it is a foolish question

Answer & Explanation

Answer: Option **B**

Explanation:

31. The work done by friction is

A. positive **B.** negative

C. zero **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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32. The area under the force displacement graph represents

A. area **B.** work done

C. power **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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33. The dimension of power is

A. [ML2T-3] **B.** [ML2T-2]

C. [ML2T3] **D.** none of these

Answer & Explanation

Answer: Option **A**

Explanation:

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34. Propulsion force of a rocket is non-conservative force **A.**

B. conservative force

C. both (a) and (b)

D. non of these

Answer & Explanation

Answer: Option **A**

Explanation:

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35. The dot product of force and velocity is

A. power

B. work

C. impulse

D. torque

Answer & Explanation

Answer: Option **A**

Explanation:

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36. Geothermal energy is a _____ source of energy.

A. non-renewable

B. stable

C. renewable **D.** none of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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37. The source of tidal energy is

A. sun **B.** earth

C. both (a) and (b) **D.** moon

Answer & Explanation

Answer: Option **D**

Explanation:

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38. _____ cells converts solar energy into electrical energy

A. rotory **B.** photovoltaic

C. galvanic **D.** non of these

Answer & Explanation

Answer: Option **B**

Explanation:

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39. On a clear day at noon the solar energy reaching the earth is

A. 1.44kw/m2 **B.** 1.4kw/m2

C. 1 kw/m2 **D.** none

Answer & Explanation

Answer: Option **C**

Explanation:

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40. Biomass can be converted into fuels by

A. direct combustion **B.** fermentation

C. both (a) and (b) **D.** none of these

Answer & Explanation

Answer: Option **C**

Explanation:

1. In vibratory motion

A. P.E. remains constant **B.** K.E. remain constant

C. total energy remain constant **D.** total momentum remain constant

Answer & Explanation

Answer: Option **C**

Explanation:

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2. The waveform of S.H.M. is

A. standing wave

B. sine wave

C. square wave

D. none

Answer & Explanation

Answer: Option **B**

Explanation:

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3. S.I unit of frequency is

A. vibration S-2

B. radian

C. hertz

D. ms-1

Answer & Explanation

Answer: Option **C**

Explanation:

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4. In S.H.M. the velocity of a particle is maximum at

A. mean position

B. extreme position

C. middle between mean and extreme position on the right side

D. middle between mean and extreme position on the left side

Answer & Explanation

Answer: Option **A**

Explanation:

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The acceleration of a projection on the diameter for a particle moving along a circle is

A. w2x **B.** wx2

C. w2x **D.** wx2

Answer & Explanation

Answer: Option **C**

Explanation:

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6. Total energy of a body executing S.H.M is directly proportional to

A. square root of amplitude **B.** the amplitude

C. reciprocal of amplitude **D.** square of amplitude

Answer & Explanation

Answer: Option **D**

Explanation:

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7. The time period of a second pendulum is

A. 4 seconds **B.** 3 seconds

C. 2 seconds **D.** 6 seconds

Answer & Explanation

Answer: Option **C**

Explanation:

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8. The length of second pendulum is

A. 100 cm **B.** 99 cm

C. 99.2 cm **D.** 98 cm

Answer & Explanation

Answer: Option **C**

Explanation:

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If length of second pendulum becomes four times, then its time period will become

A. four times **B.** six times

C. eight times **D.** two times

Answer & Explanation

Answer: Option **D**

Explanation:

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10. The force responsible for the vibratory motion of the simple pendulum is

A. mg cos? **B.** mg sin?

C. mg ton? **D.** mg

Answer & Explanation

Answer: Option **B**

Explanation:

11. The frequency of the second pendulum is

A. 1 hertz **B.** 0.5 hertz

C. 1.5 hertz **D.** 2.5 hertz

Answer & Explanation

Answer: Option **B**

Explanation:

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12. Simple harmonic motion is a type of

A. rotational motion **B.** circular motion

C. musical arrangement **D.** vibratory motion

Answer & Explanation

Answer: Option **D**

Explanation:

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13. The SI unit of force constant is identical with that of

A. force **B.** pressure

C. surface tension **D.** loudness

Answer & Explanation

Answer: Option **C**

Explanation:

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14. When the amplitude of a wave become double its energy become

A. double **B.** four times

C. one half **D.** none time

Answer & Explanation

Answer: Option **B**

Explanation:

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A simple pendulum suspended form the ceiling of a lift has time period T when the lift is at rest. When the lift falls freely, the time period is

A. infinite **B.** T/g

C. zero **D.** g/T

Answer & Explanation

Answer: Option **A**

Explanation:

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16. The energy of SHM is maximum at

A. mean position **B.** extreme position

C. in between mean and extreme **D.** all positions during SHM **Answer & Explanation**

Answer: Option **D**

Explanation:

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17. The product of frequency and time period is equal to

A. 1 **B.** 2

C. 3 **D.** 4

Answer & Explanation

Answer: Option **A**

Explanation:

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When one is the correct graph between acceleration a and displacement d for SHM?

Answer & Explanation

Answer: Option **B**

Explanation:

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The displacement of SHM is written as X = X? sin?t if displacement is written by X = X? son ?t then phase constant will be equal to

A. 0? **B.** 45?

C. 90? **D.** 180?

Answer & Explanation

Answer: Option **C**

Explanation:

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20. For what displacement the P.E becomes 1/4 of its maximum value?

A. x = x? **B.** x = x?/2

C. x = x?/4 **D.** x = x?2/2

Answer & Explanation

Answer: Option **B**

Explanation:

21. Sharpness of resonance is

directly proportional to damping force

inversely proportional to damping force

equal to square of damping force

equal to square of damping force

Answer & Explanation

Answer: Option **B**

Explanation:

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22. Which one dows not work according to resonance?

A. T.V **B.** radio

C. microwave oven **D.** bulb

Answer & Explanation

Answer: Option **D**

Explanation:

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23. The restoring force acting on simple pendulum is given by

A. mg sin ? **B.** mg sin ?

C. mg cos ? **D.** mg cos ?

Answer & Explanation

Answer: Option **B**

Explanation:

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24. Phase of SHM describes

A. displacement only **B.** direction of motion only

C. both displacement and direction of motion **D.** neither displacement nor direction of motion

Answer & Explanation

Answer: Option **C**

Explanation:

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25. Natural frequency of simple pendulum depends upon

A. its mass **B.** its length

C. square of its length **D.** square root of its length

Answer & Explanation

Answer: Option **D**

Explanation:

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Electrical resonance is observed in

A. radio microwave oven

both in radio and microwave **C.** oven neither in radio nor in microwave oven

Answer & Explanation

Answer: Option **A**

Explanation:

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27. Total distance traveled by bob of simple pendulum in one vibration is equal to

A. amplitude **B.** square of amplitude

C. 2 x amplitude **D.** 4 x amplitude

Answer & Explanation

Answer: Option **D**

Explanation:

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28. When K.E energy of SHM is maximum its

A. P.E is zero

B. acceleration is zero

C. restoring force is zero

D. all P.E acceleration and restoring force are zero

Answer & Explanation

Answer: Option **D**

Explanation:

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29. In damped harmonic oscillation which one decreases?

A. amplitude of vibration energy of vibration **B.**

C. both amplitude and energy

D. neither amplitude nor energy

Answer & Explanation

Answer: Option **C**

Explanation:

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30. Forced vibration are known as simple harmonic vibration **A.**

B. natural vibration

C. driven harmonic vibration

D. free vibration

Answer & Explanation

Answer: Option **C**

Explanation:

31. Mass attached to a spring executes.

A. vibratory motion **B.** rotatory motion

C. S.H.M **D.** both (a) and (c)

Answer & Explanation

Answer: Option **D**

Explanation:

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At Murree Hills (Assume value of g changes). If we use a simple pendulum as time standard then one second duration will.

A. increase **B.** decrease

C. remains same **D.** is zero

Answer & Explanation

Answer: Option **A**

Explanation:

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33. The velocity of the mass attached to a spring is maximum at

A. mean position **B.** extreme position

C. both (a) and (b) **D.** none

Answer & Explanation

Answer: Option **A**

Explanation:

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The projection of the particle moving in a circle with non-uniform speed executes.

A. S.H.M

B. Vibratory motion

C. Both (b) and (d)

D. None S.H.M

Answer & Explanation

Answer: Option **C**

Explanation:

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35. Displacement of the body in S.H.M is equal to amplitude when body is at

A. mean position

B. else where

C. extreme position

D. none

Answer & Explanation

Answer: Option **C**

Explanation:

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36. For a simple pendulum the restoring force is caused by

A. gravity

B. spring

C. hand

D. all of these

Answer & Explanation

Answer: Option **A**

Explanation:

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The distance covered by a body in one complete vibration is 20cm. What is the amplitude of body

A. 10 cm **B.** 5 cm

C. 15 cm **D.** 7.5 cm

Answer & Explanation

Answer: Option **B**

Explanation:

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A cup of milk is placed in a microwave oven. Tell which statements is false (1) Milk will be heated up only (2) Cup will remain cool (3) Both cup and mild will get hot.

A. both **B.** 1

C. 2 **D.** 3

Answer & Explanation

Answer: Option **D**

Explanation:

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39. In case of a simple pendulum the cause of damping is

A. drag force of air **B.** gravity

C. tension in string **D.** none of these

Answer & Explanation

Answer: Option **A**

Explanation:

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40. The energy absorbed by a body is _____ at resonance.

A. maximum as well minimum minimum only **B.**

C. maximum only **D.** zero

Answer & Explanation

Answer: Option **C**

Explanation:

1. A lens which converges a beam of parallel rays to a point is called

A. diverging (or concave) lens converging (or convex) lens **B.**

C. plano concave lens **D.** plano convex lens

Answer & Explanation

Answer: Option **B**

Explanation:

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A point where the incident parallel rays of light converge or appear to diverge after passing through a lens is called

A. center of curvature **B.** focus

C. optical center **D.** aperture

Answer & Explanation

Answer: Option **B**

Explanation:

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3. The diameter of a lens is called

A. focal length **B.** principal axis

C. aperture **D.** radius of curvature

Answer & Explanation

Answer: Option **C**

Explanation:

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4. In going form a denser to rarer medium a ray of light is

A. undeviated bent away form the normal **B.**

C. bent towards the normal **D.** polarized

Answer & Explanation

Answer: Option **B**

Explanation:

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5. Unit of power of a lens is

A. meter **B.** watt

C. dioptre **D.** horsepower

Answer & Explanation

Answer: Option **C**

Explanation:

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6. Dioptre power of an concave lens of 10 cm focal length is

A. 10 dioptre **B.** 10 dioptre

C. 1 / 10 dioptre **D.** 1 / 10 dioptre

Answer & Explanation

Answer: Option **B**

Explanation:

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7. The power of a concave lens is

A. real **B.** virtual

C. positive **D.** negative

Answer & Explanation

Answer: Option **D**

Explanation:

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8. The minimum distance between an object and its real image in a convex lens is

A. 2 f **B.** 2.5 f

C. 3f **D.** 4f

Answer & Explanation

Answer: Option **D**

Explanation:

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9. If an object is placed away from 2f of a converging lens then the image will be

A. real and erect **B.** virtual and erect

C. real and inverted **D.** virtual

Answer & Explanation

Answer: Option **C**

Explanation:

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10. A convex lens gives a virtual image only when the objects lies

A. between principal focus and center of curvature **B.** beyond 2 f

C. at the principal focus between principal focus and optical center

Answer & Explanation

Answer: Option **D**

Explanation:

11. Magnifying power of simple microscope

increase with increase in focal length

B. increase with decrease in focal length

no effect with decrease or increase with focal length

D. list distance of distinct vision

Answer & Explanation

Answer: Option **B**

Explanation:

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Image of an object 5 mm high is only 1 cm high. Magnification produced by lens is

A. 0.5

B. 0.2

C. 1

D. 2

Answer & Explanation

Answer: Option **D**

Explanation:

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13. The least distance of distinct vision for a normal eye is

A. 15 cm

B. 25 cm

C. 30 cm

D. 40 cm

Answer & Explanation

Answer: Option **B**

Explanation:

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14. Least distance of distinct vision

A.	increases with increase in age	**B.**	decreases with increase in age
C.	neither increases nor decreases	**D.**	becomes infinite after 60 years

Answer & Explanation

Answer: Option **A**

Explanation:

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If a convex lens of large aperture fails to converge the light rays incident on it to a single point, it is said to suffer from

A.	chromatic aberration	**B.**	spherical aberration
C.	both spherical and chromatic	**D.**	distortion

Answer & Explanation

Answer: Option **B**

Explanation:

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Two convex lenses of equal focal length f are placed in contact the resultant focal length of the combination is

A. zero **B.** focus

C. 2 f **D.** f/2

Answer & Explanation

Answer: Option **D**

Explanation:

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A convex lens of focal length f1 and a concave lens of focal length f2 are placed in contact. The focal length of the combination is

A. f2 + f1 **B.** f2 - f1

C. f1f2/f2+f1 **D.** f1f2/f1-f2

Answer & Explanation

Answer: Option **D**

Explanation:

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18. Final image produced by a compound microscope is

A. real and inverted **B.** real and erect

C. virtual and erect **D.** virtual and inverted

Answer & Explanation

Answer: Option **D**

Explanation:

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19. For normal adjustment, length of astronomical telescope is

A. fo + fe **B.** fo - fe

C. fo / fe **D.** fe / fo

Answer & Explanation

Answer: Option **A**

Explanation:

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20. In multimode step index fibre the refractive index of core and cladding is

A. same **B.** different

C. zero **D.** different with refractive index of core higher than cladding

Answer & Explanation

Answer: Option **D**

Explanation:

21. Dispersional effect may produce error in light signals. This type of error

A. single mode step index fibre multimode step index fibre **B.**

C. multimode graded index fibre **D.** monomode step index fiber

Answer & Explanation

Answer: Option **C**

Explanation:

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22. Light signals passes through multimode graded index fibre due to

A. continuous refraction **B.** total internal reflection

C. both continuous refraction **D.** diffraction and total internal reflection

Answer & Explanation

Answer: Option **A**

Explanation:

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Which one type of fibre is more suitable for transmission of signals in which white light is used ?

A. mono mode step index fibre **B.** multi mode step index fibre

C. multi mode graded index fibre **D.** single mode step index fibre

Answer & Explanation

Answer: Option **C**

Explanation:

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Critical angle is that incident angle in denser medium for which angle of refraction is

A. 0? **B.** 45?

C. 90? **D.** 180?

Answer & Explanation

Answer: Option **C**

Explanation:

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25. There is no noticeable boundary between core and cladding

A. multi mode step index fibre

B. multi mode graded index fibre

C. single mode step index fibre

D. all types of fibre

Answer & Explanation

Answer: Option **B**

Explanation:

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The electrical signals change into light signals for transmission through optical fibre. A light pulse represent

zero (0)

One (1)

both zero (0) and one (1)

neither zero (0) nor one (1)

Answer & Explanation

Answer: Option **B**

Explanation:

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27. A lens, which is thicker at the center and thinner at the edges is called

A. concave lens

B. convex lens

C. plano convex lens **D.** plano concave lens

Answer & Explanation

Answer: Option **B**

Explanation:

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28. A spectrometer is used to find

A. wave length of light **B.** refractive index of the prism

C. wavelength of different colours **D.** all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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If a convex lens of focal length f is cut into two identical halves along the lens diameter the focal length of each half is

A. f **B.** f/2

C. 2f **D.** 3f/2

Answer & Explanation

Answer: Option **C**

Explanation:

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A convex and concave lens of focal length f are in contact the focal length of the combinations will be

A. zero **B.** f / 2

C. 2f **D.** infinite

Answer & Explanation

Answer: Option **D**

Explanation:

31. The value of critical angle for glass is

A. 42? **B.** 47?

C. 52? **D.** 50?

Answer & Explanation

Answer: Option **A**

Explanation:

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In optic fiber transmission system _____ are used regenerate the dim light signal.

A. Diodes **B.** Repeaters

C. Laser **D.** Transformer

Answer & Explanation

Answer: Option **B**

Explanation:

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33. Magnification of the astronomical telescope is

A. fo+fe

B. fo/fe

C. fe/fo

D. (1+fo/fe)L/fo

Answer & Explanation

Answer: Option **B**

Explanation:

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34. The equation ?min = 1.22 ?/D was devised by

A. Newton

B. Einstein

C. Raleigh

D. Planks

Answer & Explanation

Answer: Option **C**

Explanation:

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35. A convex lens acts as a diverging lens if the

A. object is beyond C

B. if the object is with in C

C. if the object is within f

D. both (b) and (c)

Answer & Explanation

Answer: Option **D**

Explanation:

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36. Michelson calculated the speed of light using the instruments

A. spectrometer **B.** galvanometer

C. interferometer **D.** none of these

Answer & Explanation

Answer: Option **A**

Explanation:

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37. Michelson devised the formula to calculate the speed of light

A. C = 4fd **B.** C = 8fd

C. C = 16fd **D.** C = 5/2fd

Answer & Explanation

Answer: Option **C**

Explanation:

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38. The function of collimeter in spectrometer is

A. to produce parallel beams of light **B.** to filter the light rays

C. to make them **D.** no function

Answer & Explanation

Answer: Option **A**

Explanation:

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In optic fiber transmission the repeater are separated through a distance of _____ km in newer system.

A. 300km **B.** 200km

C. 100km **D.** 20km

Answer & Explanation

Answer: Option **C**

Explanation:

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Errors in the transmission of power through optic fiber can be minimized by using a

A. Multimode index fiber **B.** Graded index fiber

C. Single mode step index fiber **D.** Copper wire

Answer & Explanation

Answer: Option **B**

Explanation:

1. The current through a metallic conductor is due to the motion of

A. free electrons **B.** protons

C. neutrons **D.** still under controversy

Answer & Explanation

Answer: Option **A**

Explanation:

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2. Resistance of a conductor depends upon

A. nature of conductor **B.** dimension of conductor

C. physical state of the conductor **D.** all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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3. A wire having very high value of conductance is said to be

A. very good conductor moderately good conductor **B.**

C. an insulator **D.** no specific criterion available

Answer & Explanation

Answer: Option **A**

Explanation:

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A wire of uniform area of cross-section A length L and resistance R is cut into two parts. Resistivity of each part

A. remains the same **B.** is doubled

C. is halved **D.** becomes zero

Answer & Explanation

Answer: Option **A**

Explanation:

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Production of heat due to an electric current flowing through a conductor is given by

A. Joule effect **B.** Joule Thomsons effect

C. Comptons effect **D.** Feed back effect

Answer & Explanation

Answer: Option **A**

Explanation:

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6. When same current passes for same time through a thick and thin wire

A. more heat is produced in thick wire **B.** more heat is produced in thin wire

no heat is produced in wire **D.** less heat is produced in thick wire

Answer & Explanation

Answer: Option **B**

Explanation:

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Three equal resistors connected in series with a source of e m f together dissipate 10 W of power each. What will be the power dissipated if the same resistors are connected in parallel across the same source of e m f?

A. 40 W **B.** 90W

C. 100W **D.** 120W

Answer & Explanation

Answer: Option **B**

Explanation:

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8. One kilowatt hour is the amount of energy delivered during

A. one second **B.** one day

C. one minute **D.** one hour

Answer & Explanation

Answer: Option **D**

Explanation:

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9. Thermocouples convert

A. heat energy into electrical energy **B.** heat energy into light energy

C. heat energy into mechanical energy **D.** mechanical energy into heat energy

Answer & Explanation

Answer: Option **A**

Explanation:

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10. How much heat does a 40 W bulb generates in one hour?

A. 144000J **B.** 144J

C. 1.44J **D.** 14J

Answer & Explanation

Answer: Option **A**

Explanation:

An immersion heater of 400 watts kept on for 5 hours will consume electrical power of

A. 2KWh **B.** 20KWh

C. 6KWh **D.** 12KWh

Answer & Explanation

Answer: Option **A**

Explanation:

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12. Resistance of a super conductor is

A. finite **B.** infinite

C. zero **D.** changes with every conductor

Answer & Explanation

Answer: Option **C**

Explanation:

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13. Resistance of an ideal insulator is

A. infinite **B.** zero

C. finite **D.** depends upon nature

Answer & Explanation

Answer: Option **A**

Explanation:

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14. Which one is the best material for making connecting wires?

A. iron tungsten **B.**

C. silver **D.** copper

Answer & Explanation

Answer: Option **D**

Explanation:

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15. Reciprocal of resistivity is called

A. resistance **B.** inductance

C. conductivity **D.** flexibility

Answer & Explanation

Answer: Option **C**

Explanation:

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When 2? 4? and 6? resistor are connected in parallel their resultant equivalent resistance will be

A. 12? **B.** 11/12?

C. 12/11? **D.** data is insufficient

Answer & Explanation

Answer: Option **C**

Explanation:

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17. Circuit which gives continuously varying potential is called

A. complex network **B.** wheat stone bridge

C. potential divider **D.** all of above

Answer & Explanation

Answer: Option **C**

Explanation:

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18. Internal resistance is the resistance offered by

A. source of e m f **B.** conductor

C. resistor **D.** capacitor

Answer & Explanation

Answer: Option **A**

Explanation:

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There are three bulbs of 60W 100W and 200W which bulb has thickest filament.

A. 100W **B.** 200W

C. 60W **D.** all

Answer & Explanation

Answer: Option **B**

Explanation:

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Three bulbs are rating 40W 60W and 100W designed to work on 220V mains. Which bulb will burn most brightly if they are connected in series across 220 V mains?

A. 40 W bulb **B.** 60 W blub

C. 100 W blub **D.** all will burn equally brightly

Answer & Explanation

Answer: Option **A**

Explanation:

The current in the circuit shown in figure - What will be the current in the circuit?

A. 1/45A **B.** 1/10A

C. 1/5A **D.** 5A

Answer & Explanation

Answer: Option **B**

Explanation:

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22. Resistance between points A and B in the circuit shown in figure is

A. 4? **B.** 6?

C. 10? **D.** 8?

Answer & Explanation

Answer: Option **C**

Explanation:

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A neon flashlight cell with an emf of 1.5V gives a current of 15A when connected directly to an ammeter of resistance 0.04?. Internal resistance of the cell is

A. 0.0004? **B.** 0.06?

C. 0.10? **D.** 0.13?

Answer & Explanation

Answer: Option **B**

Explanation:

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24. Resistance of a wire on increasing its temperature will

increase with rise in temperature

decrease with rise in temperature

C. will remain same

D. depends upon altitude of experimentation

Answer & Explanation

Answer: Option **A**

Explanation:

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Specific resistance of a wire

A. will depend on its length

will depend on its radius

will depend on the type of material of the wire

will depend on none of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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An electric iron is marked 20 volts 500W. The units consumed by it in using if for 24 hours will be

A. 12 **B.** 24

C. 5 **D.** 1100

Answer & Explanation

Answer: Option **A**

Explanation:

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27. In the following figure, the terminal potential is

A. zero **B.** 2V

C. 12V **D.** 36V

Answer & Explanation

Answer: Option **A**

Explanation:

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28. In liquids and gases the current is due to the motion

A. negative charges **B.** positive charges

C. both negative and positive **D.** neutral particles charges

Answer & Explanation

Answer: Option **C**

Explanation:

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If 1 ampere current flows through 2m long conductor the charge flow through it in 1 hour will be

A. 3600C **B.** 7200C

C. 1C **D.** 2C

Answer & Explanation

Answer: Option **A**

Explanation:

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30. The graphical representation of Ohms law is

A. hyperbola **B.** ellipse

C. parabola **D.** straight line

Answer & Explanation

Answer: Option **D**

Explanation:

31. SI unit of resistivity is

A. ? **B.** ?

C. ? **D.** ?

Answer & Explanation

Answer: Option **C**

Explanation:

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32. Which one of the following materials is useful for making bulb filaments?

A. constantan nichrome **B.**

C. copper **D.** tungsten

Answer & Explanation

Answer: Option **A**

Explanation:

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33. The resistance of a conductor at absolute zero (OK) is

A. zero almost **B.** infinite almost

C. no prediction at all **D.** may increase or decrease

Answer & Explanation

Answer: Option **A**

Explanation:

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34. Why should a resistance be introduced in a circuit in series deliberately?

A. to increase current **B.** to decrease current

C. to control current **D.** just to give a good look to circuit

Answer & Explanation

Answer: Option **B**

Explanation:

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35. Electrical energy is measured in

A. watt

B. horse power

C. kilo watt

D. kilowatt hour

Answer & Explanation

Answer: Option **D**

Explanation:

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All electrical appliances are connected in parallel to each other between the main line and neutral wire to get

A. same current

B. same current and potential difference

C. different current but same potential difference

D. different current and potential differences

Answer & Explanation

Answer: Option **C**

Explanation:

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37. Electrical energy is converted to heat at the rate of

A. IRt **B.** I2R

C. I2Rt **D.** VIt

Answer & Explanation

Answer: Option **B**

Explanation:

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38. Which one of the following bulbs has the least resistance?

A. 100 watt 200 watt **B.**

C. 300 watt **D.** 60 watt

Answer & Explanation

Answer: Option **C**

Explanation:

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39. A fuse is placed in series with the cireuit to protect against

A. high power **B.** high voltage

C. high current **D.** over heating

Answer & Explanation

Answer: Option **D**

Explanation:

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40. Terminal potential difference of a battery is greater than its emf when

the internal resistance of battery is infinite

the internal resistance of battery is zero

the battery is charged

the battery is discharged

Answer & Explanation

Answer: Option **C**

Explanation:

An alternating current or voltage

A. fluctuates off and on

varies in magnitude alone

changes its direction again and again

changes its magnitude harmonically and reverses its direction of flow after regularly recurring intervals.

Answer & Explanation

Answer: Option **C**

Explanation:

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2. A changing magnetic flux produces around itself an induced

A. Magnetic field

B. Electric field

C. Electromagnetic force

D. Artificial gravitational field

Answer & Explanation

Answer: Option **C**

Explanation:

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Maxwell derived mathematically that the velocity of the electromagnetic waves is

1/

Answer & Explanation

Answer: Option **B**

Explanation:

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4. Electromagnetic waves travel in free space with the speed of

A. ?-rays

B. Positive rays

C. Cathode rays

D. More than sound waves

Answer & Explanation

Answer: Option **A**

Explanation:

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5. The direction of propagation of an electromagnetic waves is

A. Perpendicular to electric field

B. Perpendicular to both electric and magnetic field

C. Perpendicular to magnetic field

D. Parallel to electric and magnetic field

Answer & Explanation

Answer: Option **B**

Explanation:

View Answer Workspace Report Discuss in Forum

An electromagnetic wave consists of

Electric and magnetic fields moving parallel to each other

Magnetic field moving with velocity of light in space

Electric field moving with velocity of light

Electric and magnetic fields moving perpendicular to each other

Answer & Explanation

Answer: Option **D**

Explanation:

View Answer Workspace Report Discuss in Forum

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7. Electromagnetic waves transport

A. Energy

B. Momentum

C. Mass

D. Heat

Answer & Explanation

Answer: Option **A**

Explanation:

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8. Waves emitted from the antenna are

A. Sound waves **B.** Electromagnetic waves

C. Radio waves **D.** Modulated waves

Answer & Explanation

Answer: Option **B**

Explanation:

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9. Electromagnetic waves emitted from antenna are

A. Stationary **B.** Longitudinal

C. Transverse **D.** All the above

Answer & Explanation

Answer: Option **C**

Explanation:

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Natural or resonant frequency of an LC circuit is

Answer & Explanation

Answer: Option **D**

Explanation:

If capacitance of L-C circuit is made four times then frequency of the circuit becomes

A. Twice **B.** One half

C. Four times **D.** None

Answer & Explanation

Answer: Option **B**

Explanation:

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A capacitor of capacitance 30?F is charged by a constant current of 10mA. If initially the capacitor was uncharged what is the time taken for the potential difference across the capacitor to reach 300V?

A. 0.9sec

B. 15 sec

C. 1.5x105sec

D. 0.9x102sec

Answer & Explanation

Answer: Option **A**

Explanation:

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The value of the steady current which when flowing through the same resistor produces heat at the same rate as the mean rate of heat produced by the alternating current is

A. Average current

B. Sinusoidal current

C. r.m.s current

D. Net current

Answer & Explanation

Answer: Option **C**

Explanation:

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To find the r.m.s value of an alternating current mathematically we need to have

Mean value of I2

B. Square root of mean value of I2

Square root of I2

Square of 1/2

Answer & Explanation

Answer: Option **B**

Explanation:

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An alternating current of r.m.s value of 4.0 A and frequency 50Hz flows in a circuit containing 10? resistor. The peak current is then

A. 20A

B. 20.66A

C. 6.66A

D. 5.66A

Answer & Explanation

Answer: Option **D**

Explanation:

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An alternating current of r.m.s value of 2A and a steady direct current I flowing through identical resistors dissipate heat at the same rate. What is the current I?

2A

Answer & Explanation

Answer: Option **A**

Explanation:

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An alternating current is represented by the equation I = I?sin?t which of the following equation represents an alternating current of frequency and amplitude twice that of the above current?

A. I = 2I?Sin(?t/2)

B. I = 2I?Sin(2?t)

C. I = 2ISin?t

D. I = I?sin(2?t)

Answer & Explanation

Answer: Option **B**

Explanation:

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18. pure resistor circuit the voltage and current are

Lagging each other

They are at 90? phase difference

They have zero phase difference

No phase difference

Answer & Explanation

Answer: Option **C**

Explanation:

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When A.C current passes through a capacitor then the current relation will be

Answer & Explanation

Answer: Option **A**

Explanation:

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In capacitive circuit the current **A.**

Lags behind voltage by ?/2

B. Is in phase with voltage

C. Opposite in phase of voltage by ?

D. Leads forward the voltage by ?/2

Answer & Explanation

Answer: Option **D**

Explanation

A 100?F capacitor with 12V source in series having frequency 50Hz will offer a capacitive reactance of about

A. 32?

B. 62?

C. 50?

D. 100?

Answer & Explanation

Answer: Option **A**

Explanation:

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If a glass plate is inserted in between the plate of a capacitor in series with a lighted bulb the brightness of the bulb

A. Remains same

B. Brightness increases

C. Brightness decreases

D. No light

Answer & Explanation

Answer: Option **B**

Explanation:

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A pure variable resistor is connected in series with a pure capacitor of fixed capacitance. The impedance of the circuit

A. Remains

B. Becomes infinite

C. Becomes zero

D. Increases

Answer & Explanation

Answer: Option **D**

Explanation:

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A wire of resistance R is coiled inductively so that its inductance is L. The impedance of the coil at a frequency of f is

A. (R+2?fL)

B. R+1/2?fL

C. (R2+f2L2)

D. (R2+4?2f2L2)

Answer & Explanation

Answer: Option **D**

Explanation:

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25. Ammeter connected in an AC circuit measures

A. Exact value of current

B. rms value of current

C. Net value of current **D.** Peak value of current

Answer & Explanation

Answer: Option **B**

Explanation:

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When a pure inductor of inductance L and a pure capacitor of capacitance C are connected in parallel to a sinusoidal potential difference V the potential difference across both L & C will be

A. Same **B.** Different

C. At L will be more than at C **D.** At L will be less than at C

Answer & Explanation

Answer: Option **A**

Explanation:

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An alternating potential difference is connected across a pure resistor and the frequency of the supply is varied but the rms value of the voltage is kept constant. The mean rate of heat dissipated from the resistor is

A. Directly proportional to f **B.** Directly proportional to ??f

C. Directly proportional to f2 **D.** Inversely proportional to f

Answer & Explanation

Answer: Option **C**

Explanation:

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What is the self inductance of a coil in which an induced emf of 2V is set up when the current changes at the rate of 4 As-1?

A. 0.5 mH **B.** 0.5H

C. 2.0H **D.** 8.0H

Answer & Explanation

Answer: Option **B**

Explanation:

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29. The frequency of a circuit consisting of a capacitance C and a resistor R is

A. C/R **B.** R/C

C. 1/RC **D.** 1/ ??RC

Answer & Explanation

Answer: Option **C**

Explanation:

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A 10? electric heater is connected to a 220V 50Hz mains supply. What is the peak value of the potential difference across the heater element?

A. 220V **B.** 220/ ??2V

C. 110V **D.** 220 ??2V

Answer & Explanation

Answer: Option **D**

Explanation:

31. A choke is used as a resistance in

A. DC circuit **B.** AC circuits

C. Both AC and DC circuit **D.** Full wave rectifier circuit

Answer & Explanation

Answer: Option **B**

Explanation:

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At resonance the value of the power factor in an L-C-R series circuit is

A. Zero

C. 1 **D.** not definite

Answer & Explanation

Answer: Option **C**

Explanation:

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An A.C series circuit containing 4? resistance and 3-? inductive reactance. The impedance of the circuit is

A. 1? **B.** 5?

C. 7? **D.** 7/?2?

Answer & Explanation

Answer: Option **B**

Explanation:

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An inductive coil has a resistance of 100?. When an AC signal of frequency 1000Hz is fed to the coil the applied voltage leads the current by 45?. What is the inductance of the coil?

A. 10mH **B.** 12mH

C. 16mH **D.** 20mH

Answer & Explanation

Answer: Option **C**

Explanation:

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35. Choose the correct statement. In the case of AC circuit ohms law holds for

Peak values of voltage and current

Effective values of voltage and current

Instantaneous values of voltage and current

All of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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The phase angle between the voltage and the current in an AC circuit consisting of a resistance is

A. Zero **B.** 45?

C. 90? **D.** 180?

Answer & Explanation

Answer: Option **A**

Explanation:

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In an LCR series circuit, if V is the effective value of the applied voltage VR is the voltage across R VL is the effective voltage across L & Vc is the effective voltage across C then

A. V = VR+VL+VC **B.** V2 = VR2+VL2+VC2

C. V2 = VR2+(VL-VC)2 **D.** V2 = VL2+(VR-VC)2

Answer & Explanation

Answer: Option **C**

Explanation:

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a voltage V = V? cos ?t is applied across a resistor of resistance R the average power dissipated per cycle in the resistor is given by

A. V?/?2R **B.** V?/?2?R

C. V?2/?2R **D.** V?2/?2?R

Answer & Explanation

Answer: Option **C**

Explanation:

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Two identical coaxial circular loops carry equal currents in the same direction. If the loops approach each other the current in

Each increases

Each decreases

Each remains the same

One increases whereas that in the other decreases

Answer & Explanation

Answer: Option **B**

Explanation:

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An inductor may store energy in

A. its electric field

its coils

its magnetic field

both electric and magnetic fields

Answer & Explanation

Answer: Option **C**

Explanation:

1. Tick the correct statement

the flight path of a vertically falling body appears straight to the stationary observer

the flight path of vertically falling body appears parabolic to an observer in uniform relative motion

all states of rest and motion are relative and there is no such thing as absolute motion

all the above

Answer & Explanation

Answer: Option **D**

Explanation:

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2. Mark the wrong statement.

a frame of reference which is either at rest or moves with a constant velocity is called an inertial frame of reference

an un-accelerated frame of reference is called an inertial frame of reference

all the frames of reference in uniform rectilinear motion are equivalent

Newtons laws of motion are valid in an accelerated (non inertial) frame of reference

Answer & Explanation

Answer: Option **D**

Explanation:

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3. The relativistic energy E is equivalent to relativistic mass given by

A. Ec2

B. E/c2

C. E/c

D. c2/E

Answer & Explanation

Answer: Option **B**

Explanation:

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An observer shoots parallel to a meter stick at very high (relativistic) speed and finds that the length of meter stick is

A. greater than one meter **B.** less than one meter

C. one meter **D.** a foolish question

Answer & Explanation

Answer: Option **B**

Explanation:

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5. 0.001 kg mass will be equivalent to

A. 2.50 GWh **B.** 25.00 GWh

C. 0.26 GWh **D.** 250 GWh

Answer & Explanation

Answer: Option **B**

Explanation:

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6. Which one of the following radiations has the strongest photon?

A. T.V waves micro waves **B.**

C. X-rays **D.** ?-rays

Answer & Explanation

Answer: Option **D**

Explanation:

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7. Tick the right statement.

A. no photo electronic emission takes place if the frequency of radiation however intense it may be is less than a certain critical value called threshold frequency

B. threshold frequency depends upon the nature of the metal surface

C. maximum energy of a photoelectron is a function of frequency rather than intensity of radiation

D. all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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8. Linear momentum of a photon is

A. zero

B. hv/c2

C. hv/c

D. c2/hv

Answer & Explanation

Answer: Option **A**

Explanation:

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9. A device based on photoelectric effect is called

A. photo sensitive detection **B.** photo diode

C. photosynthesis **D.** photo cell

Answer & Explanation

Answer: Option **D**

Explanation:

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10. The linear momentum of an X-ray photon of wavelength 0.1A is

A. 6.625x1023N-s **B.** 66.25x1023N-s

C. 662.5x1023N-s **D.** data is insufficient

Answer & Explanation

Answer: Option **A**

Explanation:

Stopping potential for a metal surface in case of photoelectric emission depends on

the threshold frequency for the metal surface

the intensity of incident light

the frequency of incident light and work function of the metal surface

all of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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12. Select an alternative from of uncertainly principle from the following

A. ?? = h/m?c(1-cos ?) **B.** ?E . ?t = h

C. mc2 = hv **D.** any of above

Answer & Explanation

Answer: Option **B**

Explanation:

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13. The existence of Ether wind was experimentally rejected by

A. equal to its rest mass **B.** double of its rest mass

C. infinite **D.** zero

Answer & Explanation

Answer: Option **C**

Explanation:

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14. If a material object moves with speed of light its mass becomes

A. equal to its rest mass **B.** double of its rest mass

C. infinite **D.** zero

Answer & Explanation

Answer: Option **C**

Explanation:

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As the temperature of black body is raised the wavelength corresponding to maximum intensity

shifts towards longer wavelength

shifts towards shorter wavelength

remain the same

shifts towards longer as well as shorter wavelengths

Answer & Explanation

Answer: Option **B**

Explanation:

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16. Rest mass of a photon is

A. infinite

B. zero

C. very small

D. 1.67 x 10-27 kg

Answer & Explanation

Answer: Option **B**

Explanation:

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17. The name of the photon for quantum of light was proposed by

A. Ampere

B. Plank

C. Thomson

D. Einstein

Answer & Explanation

Answer: Option **D**

Explanation:

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18. Einsteins photoelectric equation is given by

A. 1/2 mvmax2=hf+? **B.** 1/2 mvmax2-hf = ?

C. 1/2 mvmax2=hf-? **D.** all of above are correct

Answer & Explanation

Answer: Option **C**

Explanation:

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19. In Compton scattering the change in wave length is max if

A. angle of scattering is 90? angle of scattering is 60? **B.**

C. angle of scattering is 180? **D.** angle of scattering is zero

Answer & Explanation

Answer: Option **C**

Explanation:

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20. Davison Germer experiment indicates

A. interference **B.** polarization

C. election diffraction **D.** refraction

Answer & Explanation

Answer: Option **C**

Explanation:

21. A photon is

A. a unit of energy

B. a positively charged particle

C. a quantum of electromagnetic radiation

D. a unit of wavelength

Answer & Explanation

Answer: Option **C**

Explanation:

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22. Which one of the following has the largest energy content?

103 photons of wavelength 2pm (?-rays).

102 photons of wavelength 1nm (x-rays).

106 photons of wavelength 50?m (infrared).

106 photons of wavelength 200nm (UV).

Answer & Explanation

Answer: Option **A**

Explanation:

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A transmitting station emits radio waves of wavelength ? at power P. If h is Plancks constant & c the speed of light what is the rate of emission of photons?

Answer & Explanation

Answer: Option **C**

Explanation:

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After traveling through a vacuum a photon of light entering into some transparent denser medium. Thus the energy of light

A.	Increases because wavelength decreases	**B.**	Decreases because speed decreases
C.	Remains same	**D.**	Increases then decreases

Answer & Explanation

Answer: Option **C**

Explanation:

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In a photoelectric effect monochromatic light is incident on a metal surface. If the incident light of twice the intensity but of same wavelength the kinetic energy of the emitted electron

A.	Becomes double	**B.**	Remains same
C.	Becomes half	**D.**	First increases then decreases because curvilinear graph

Answer & Explanation

Answer: Option **B**

Explanation:

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26. If the wavelength of incident radiation is increased in photoemission then

The maximum kinetic energy of the photoelectrons increases.

The minimum kinetic energy of the photoelectrons decreases.

The minimum kinetic energy of the photoelectrons increases.

The average kinetic energy of the photoelectrons decreases.

Answer & Explanation

Answer: Option **D**

Explanation:

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If a photon is reflected from the mirror then the change in momentum of each photon is

zero

Answer & Explanation

Answer: Option **B**

Explanation:

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If n number of photon are striking on a metal surface then total momentum exerted is

Answer & Explanation

Answer: Option **A**

Explanation:

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29. A photon of wave length 900nm behaves like a particle of mass

A. 5.53 x 10-36kg **B.** 0 kg.

C. 2.46 x 10-36kg **D.** 1.84 x 10-44kg

Answer & Explanation

Answer: Option **C**

Explanation:

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The velocity of a particle of mass m of de-Broglie wavelength ? is

Answer & Explanation

Answer: Option **D**

Explanation:

In Davisson-Germer experiment the diffracted proton from crystal shows

A. Particle property **B.** Wave property

C. Light property **D.** Quantum property

Answer & Explanation

Answer: Option **B**

Explanation:

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32. If a diffraction grating is placed in the path of a light beam it reveals

A. Wave property **B.** Particle property

C. Energy particle **D.** Electromagnetic wave

property

Answer & Explanation

Answer: Option **A**

Explanation:

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33. In electron microscope we use energetic particles because of

A. Penetrating power is high

B. Kinetic energy is large.

C. Wavelength is very short.

D. All the above reasons.

Answer & Explanation

Answer: Option **C**

Explanation:

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34. In electron microscope electric & magnetic fields are used as

A. Electromagnetic gun.

B. Source of electromagnetic waves.

C. Deflecting charged particle

D. Converging source of electrons.

Answer & Explanation

Answer: Option **D**

Explanation:

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35. A three dimensional image is obtained by

A. Electron microscope **B.** Seanning electron microscope

C. Magnetic imaging **D.** None of the above

Answer & Explanation

Answer: Option **B**

Explanation:

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36. The uncertainty in momentum & position is due to its

A. Property of matter and radiation. **B.** Two dimensional motion.

C. Emission of certain wavelength **D.** Very high velocity.

Answer & Explanation

Answer: Option **A**

Explanation:

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For confinement of electron in a box of radius 10-14m the electron speed should be

107m/sec **B.** Should be greater than speed of light.

Be zero Not be wavelike.

Answer & Explanation

Answer: Option **B**

Explanation:

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The energy radiated is directly proportional to fourth power of Kelvins temperature is

A. Karl-weins law

B. Rayleigh Jeans law.

C. Stephens law.

D. Plancks

Answer & Explanation

Answer: Option **C**

Explanation:

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39. Compton effect proves the

A. Photon theory of light

B. Dual nature of light

C. Wave nature of light

D. Uncertain nature of light

Answer & Explanation

Answer: Option **A**

Explanation:

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Electron moves in the orbit as **A.**

Simple vibratory motion.

Standing wave motion.

Vibratory motion like up and down.

S.H.M like sound.

Answer & Explanation

Answer: Option **B**

Explanation:

1. Rectangular coordinate system is also called

A. polar coordinate system **B.** Cartesian coordinate system

C. cylindrical coordinate system **D.** spherical coordinate system

Answer & Explanation

Answer: Option **B**

Explanation:

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2. The direction of a vector in spece is specified by

A. one angle **B.** two angle

C. three angle **D.** no angle

Answer & Explanation

Answer: Option **C**

Explanation:

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3. Addition of vector obeys commutative law **A.**

B. distributive law

C. associative law **D.** all given laws in a , b and c

Answer & Explanation

Answer: Option **D**

Explanation:

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4. A vector can be multiplied by a number. The number may be

A. dimensionless **B.** dimensional scalar

C. negative **D.** all a, b and c are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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5. Unit vector n^ is along

A. x-axis **B.** normal on a surface

C. y-axis **D.** z-axis

Answer & Explanation

Answer: Option **B**

Explanation:

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6. Cos?i^ + Sin?j^ is a

A. vector **B.** position vector

C. vector in the direction at **D.** unit vector in the direction at

angle ? with x-axis angle ? with x-axis

Answer & Explanation

Answer: Option **D**

Explanation:

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7. Maximum number of rectangular components are

A. one **B.** two

C. three **D.** infinite

Answer & Explanation

Answer: Option **C**

Explanation:

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8. Maximum number of components of a vector may be

A. one **B.** two

C. three **D.** infinite

Answer & Explanation

Answer: Option **D**

Explanation:

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9. Which one is not correct for a vector A= 2??2 i^ + ??2 j^?

A. has direction ?=45? with x-axis

has magnitude 2

has magnitude 2 and direction ?=45? with y-axis

has magnitude -2

Answer & Explanation

Answer: Option **D**

Explanation:

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The resultant of two forces of equal magnitudes is also equal to the magnitude of the forces. The angle between the two forces is

A. 30?

B. 60?

C. 90?

D. 120?

Answer & Explanation

Answer: Option **D**

Explanation:

11. What is the angle that the given vector makes with y-axis? A=2 i^+??12 j^

A. 30?

B. 60?

C. 90?

D. 120?

Answer & Explanation

Answer: Option **B**

Explanation:

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12. In which quadrant the two rectangular components of a vector have same sign?

A. 1st 2nd **B.**

C. both 1st and 3rd **D.** 4th

Answer & Explanation

Answer: Option **C**

Explanation:

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Two vectors A and B are making angle ? with each other. The scalar projection of vector B on vector A is written as

A. A.B/A **B.** A.B/B

C. A.cos ? **D.** both a and b are correct

Answer & Explanation

Answer: Option **A**

Explanation:

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14. Two vectors are A = 3i^+2j^ -k^& B = 3i^-2j^ +k^ , then

A. B is anti parallel to A **B.** B is negative vector of A

C. B has negative magnitude **D.** B is perpendicular to A

Answer & Explanation

Answer: Option **B**

Explanation:

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15. If A=B, which of the following is not correct?

A. A.B = A^ B^ **B.** |A| = |B|

C. |A^| = |B^| **D.** AB^ = BA^

Answer & Explanation

Answer: Option **A**

Explanation:

View Answer Workspace Report Discuss in Forum

---

16. i^ . (j^ x k^) is equal to

A. 1 **B.** i^

C. j^ **D.** k^

Answer & Explanation

Answer: Option **A**

Explanation:

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17. Which one is not a correct relation?

A. AxB = -BxA

B. |AxB| = -|BxA|

C. AxB = AB Sin?n^

D. BxA = AB Sin?(-n^)

Answer & Explanation

Answer: Option **B**

Explanation:

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18. The direction of vector product is given by

A. head to tail rule

B. right hand rule

C. left hand rule

D. triangular rule

Answer & Explanation

Answer: Option **B**

Explanation:

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If east, west, north, south, up and down are representing the direction of unit vectors, then east x south has direction along

A. west

B. north

C. down

D. up

Answer & Explanation

Answer: Option **C**

Explanation:

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20. Null vector is a vector which has

A. zero magnitude **B.** no specified direction

C. both a and b are correct **D.** both a and b are not correct

Answer & Explanation

Answer: Option **C**

Explanation:

Which one is a unit vector?

A. ??3 i^ + ??3 j^ + ??3 k^ 1/??3 i^ + 1/??3 j^ +1/ ??3 k^

/ **C.** ??3 / 3 i^ + ??3 / 3 j^ + ??3 3 k^ both b and c are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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22. Angle between two vectors A and B can be determined by

A. their dot product **B.** their cross product

C. head to tail rule **D.** right hand rule

Answer & Explanation

Answer: Option **A**

Explanation:

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The magnitude of cross product is equal to the dot product between them. The angle between the two vectors is

A. 30?

B. 45?

C. 60?

D. 180?

Answer & Explanation

Answer: Option **B**

Explanation:

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Torque is defined as

A. turning effect of force

cross product of position vector and force

product of force and moment arm

C. all a, b and c are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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25. The dimension of torque is

A. [ML2T-2]

B. [MLT-2]

C. [ML2T]

D. [ML-2T-2]

Answer & Explanation

Answer: Option **A**

Explanation:

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26. SI unit of torque is

A. N.m **B.** joule

C. both a and b are correct **D.** neither a nor b is correct

Answer & Explanation

Answer: Option **A**

Explanation:

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Torque acting on a body determines

A. acceleration linear acceleration

angular acceleration **D.** direction of motion of the body

Answer & Explanation

Answer: Option **C**

Explanation:

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A body in equilibrium

A. always at rest always in uniform motion

may be at rest or in uniform motion may be at rest or in motion

Answer & Explanation

Answer: Option **C**

Explanation:

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29. A body will be in complete equilibrium when it is satisfying

A. Ist condition of equilibrium **B.** 2nd condition of equilibrium

C. both Ist and 2nd condition of **D.** impossible equilibrium

Answer & Explanation

Answer: Option **C**

Explanation:

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30. Which one is not a type of dynamic equilibrium?

A. rotational equilibrium **B.** translational equilibrium

static equilibrium both a and c are corret answer.

Answer & Explanation

Answer: Option **C**

Explanation:

Three coplanar forces acting on a body keep it in equilibrium. They should therefore be

A. concurrent **B.** non concurrent

C. parallel **D.** non parallel

Answer & Explanation

Answer: Option **A**

Explanation:

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32. which of the following pairs does not have identical dimensions ?

A. torque and energy **B.** momentum and impulse

C. energy and work **D.** mass and moment of inertia

Answer & Explanation

Answer: Option **D**

Explanation:

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A central force is that which

A. can produce torque can not produce torque

some time can produce torque some time can not has no relation with torque

Answer & Explanation

Answer: Option **B**

Explanation:

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34. It is easier to turn a steering wheel with both hands than with a single hand

because

A. accelerating force increases **B.** two forces act on the wheel on the wheel

C. two hands provide firm grip **D.** couple acts on the wheel

Answer & Explanation

Answer: Option **D**

Explanation:

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35. The cross product i^ x j^ is equal to

A. zero **B.** one

C. i^ **D.** k^

Answer & Explanation

Answer: Option **D**

Explanation:

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36. ? The unit vector in the direction of vector A = 2 i^ -2j^ + k^ is

A. 2i^ - 2j^ + k^ **B.** (2i^ - 2j^ +k^)/9

C. (2i^ - 2j^ +k^)/3 **D.** (2i^ - 2j^ +k^)/5

Answer & Explanation

Answer: Option **C**

Explanation:

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37. The magnitude of i^. (j^ x k^) is

A. 0 **B.** 1

C. -1 **D.** i^

Answer & Explanation

Answer: Option **B**

Explanation:

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38. In which quadrant, only value of tan will be positive?

A. first second **B.**

C. third **D.** both 1st and 3rd

Answer & Explanation

Answer: Option **D**

Explanation:

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39. ? ? If A=Ax i^ + Ay j^ + Az K^ B = Bx i^ + By j^ + Bz K^ then

A. ?? A. B = Ax Bx + Ay By + Az Bz **B.** ?? A. B = Ax By + Ay Bz + Az By

C. ?? A. B = Ay Bz + Az By + Az Bx **D.** ?? A. B = Ax Bz + Ay By + Az Bx

Answer & Explanation

Answer: Option **A**

Explanation:

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40. The cross product of two vectors is a negative vector when

A. they are parallel vectors **B.** they are anti parallel vectors

C. they are perpendicular vector **D.** they are rotated through 270?

Answer & Explanation

Answer: Option **D**

Explanation:

The rotational K.E of hoop is equal to the

A. its translational K.E half than its translational K.E

double than its translational **C.** K.E four times than its translational K.E

Answer & Explanation

Answer: Option **A**

Explanation:

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A hoop and disc have same mass and radius. Their rotational K.E are related by an equation

A. K.Ehoop = K.Edisc **B.** K.Ehoop = 2K.Edisc

C. K.Ehoop = 1/2K.Edisc **D.** K.Ehoop = 4K.Edisc

Answer & Explanation

Answer: Option **B**

Explanation:

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3. The critical speed of an artificial satellite is

A. 8 Kms-1 **B.** 8.1 Kms-1

C. 7.9 Kms-1 **D.** 8 ms-1

Answer & Explanation

Answer: Option **C**

Explanation:

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4. Geo-stationary satellite completes one rotation around earth in

A. 3 hours **B.** 6 hours

C. 12 hours **D.** 24 hours

Answer & Explanation

Answer: Option **D**

Explanation:

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5. Radius of geo-stationary orbit from center of earth is nearly

A. 42000km **B.** 36000km

C. 24000 km **D.** 18000 km

Answer & Explanation

Answer: Option **A**

Explanation:

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6. According to Einstein the gravity interaction is possible between

A. material objects only **B.** material objects and

C. electromagnetic radiations **D.**

Answer & Explanation

Answer: Option **B**

Explanation:

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7. One radian is equal to

A. 67.3? **B.** 57.3?

C. 87.3? **D.** 60?

Answer & Explanation

Answer: Option **B**

Explanation:

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8. The period of a circular motion is given by

A. T = rV **B.** T = ?w

C. T = 2?? **D.** T = 2?/?

Answer & Explanation

Answer: Option **D**

Explanation:

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9. The direction of linear velocity of body moving in a circle is

A. along the axis of rotation **B.** along the tangent

C. directed towards the center **D.** directed away form the center

Answer & Explanation

Answer: Option **B**

Explanation:

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When a body moves in a circle, the angle between its linear velocity and angular velocity is always

A. 180? **B.** 0?

C. 90? **D.** 45?

Answer & Explanation

Answer: Option **C**

Explanation:

11. The circumference subtends an angle

A. ? radianradian **B.** 2? radian

C. ?/2 radian **D.** 4? radian

Answer & Explanation

Answer: Option **B**

Explanation:

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12. The relation between linear and angular acceleration is

A. a = a x r **B.** a = r x a

C. a = a x r **D.** r = a x a

Answer & Explanation

Answer: Option **C**

Explanation:

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When a body is whirled in a horizontal circle by means of a string the centripetal force is supplied by

A. mass of a body **B.** velocity of body

C. tension in the string **D.** centripetal acceleration

Answer & Explanation

Answer: Option **C**

Explanation:

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14. Centripetal force performs

A. maximum work **B.** minimum work

C. negative work **D.** no work

Answer & Explanation

Answer: Option **D**

Explanation:

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When a body moves in a circle of radius r with linear speed V its centripetal force is

A. mV/r2 **B.** mV/r

C. mV2/r **D.** mV2/r2

Answer & Explanation

Answer: Option **C**

Explanation:

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A stone is whirled in a vertical circle at the end of a string. When the stone is at the highest position the tension in the string is

maximum zero

equal to the weight of the stone less than the weight of the stone

Answer & Explanation

Answer: Option **C**

Explanation:

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17. The span of broad jump depends upon

A. mass of the jumper **B.** height of jump

C. angle of projection **D.** none

Answer & Explanation

Answer: Option **C**

Explanation:

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18. In case of planets the necessary acceleration is provided by

A. Gravitational force **B.** frictional force

C. coulomb force **D.** centripetal force

Answer & Explanation

Answer: Option **A**

Explanation:

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If a car moves with a uniform speed of 2 ms-1 in a circle of radius 0.4. Its angular speed is

A. 4 rad. S-1 **B.** 5 rad. S-1

C. 1.6 rad. S-1 **D.** 2.8 ms-1

Answer & Explanation

Answer: Option **B**

Explanation:

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20. A body can have consutant velocity when it follows a

A. elliptical path **B.** circular path

C. parabolic path **D.** rectilinear path

Answer & Explanation

Answer: Option **D**

Explanation:

A body moving along the circumference of a circle completes two revolutions. If the radius of the circular path is R the ration of displacement to the covered path will be

A. ? R **B.** 2? R

C. zero **D.** 4? R

Answer & Explanation

Answer: Option **C**

Explanation:

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22. The angular speed for daily rotatio of earth in rad S-1 is

A. 2 ?

B. ?

C. 4 ?

D. 7.3 x 10-5 rads-1

Answer & Explanation

Answer: Option **D**

Explanation:

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When a wheel 1 m in diameter makes 30 rev min the linear speed of point on its rim in ms-1 is

A. 2?

B. ?/2

C. ?

D. 20?

Answer & Explanation

Answer: Option **B**

Explanation:

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24. A cyclist cycling around a circular racing track skids because

the centripetal force upon him is less than limiting friction

the centripetal force upon him is greater then limiting friction

the centripetal force upon him is equal to the limiting friction

the friction between the tyres of the cycle and road vanishes

Answer & Explanation

Answer: Option **B**

Explanation:

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If a wheel of radius r turns through an angle of 30? then the distance through which any point on its rim moves is

A. ? /3 x r **B.** ?/6 x r

C. ?/30 x r **D.** ? / 180 x r

Answer & Explanation

Answer: Option **B**

Explanation:

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26. In angular motion, Newtons second law of motion is

A. F=ma **B.** F=?p/?t

C. ? = 1a **D.** all above

Answer & Explanation

Answer: Option **C**

Explanation:

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27. Angular speed of seconds hand of a watch in rads-1 is

A. ? **B.** ?/2

C. ?/30 **D.** ?/180

Answer & Explanation

Answer: Option **C**

Explanation:

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The shaft of a motor rotates at a constant angular speed of 360rev/min. Angle turned through in 1 sec in radian is

A. ?

B. 3?

C. 6?

D. 12?

Answer & Explanation

Answer: Option **D**

Explanation:

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What is outward force acting on a mass of 10 kg when rotating at one end an inelastic string 10m long at speed of 1m/s?

A. 1N

B. 10N

C. 2N

D. 100N

Answer & Explanation

Answer: Option **A**

Explanation:

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If we whirl a stone at the end of a string in the vertical circle, it is likely to break when the stone is

at the highest point

at the lowest point

at any point during motion

at the point where gravity is not acting

Answer & Explanation

Answer: Option **B**

moving along the circumference of a circle completes two revolutions. If the radius of the circular path is R, the ratio of displacement to the covered path will be

A. ??R

B. 2??R

C. zero

D. 4??R

Answer & Explanation

Answer: Option **C**

Explanation:

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A man of weight W is standing on an elevator which is ascending with an acceleration a. The apparent weight of the man is

A. mg

B. mg - ma

C. mg + ma

D. mg - ma

Answer & Explanation

Answer: Option **C**

Explanation:

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33. Who discovered the inverse square law for gravity?

A. Einstein Galileo **B.**

C. Newtons **D.** Plank

Answer & Explanation

Answer: Option **C**

Explanation:

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34. The planet nearest to the earth is

A. Venus **B.** Mercury

C. Uranus **D.** Sun

Answer & Explanation

Answer: Option **A**

Explanation:

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35. A satellite moving round the earth constitutes

A. An inertial frome of reference

B. non inertial frame

C. neither inertial nor non inertial

D. both inertial and non inertial

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Minimum number of communication satellites required to cover the whole carth is

A. 4 **B.** 3

C. 2 **D.** 5

Answer & Explanation

Answer: Option **B**

Explanation:

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A body of 2 kg is suspended form the ceiling of an elevator moving up with an acceleration g. Its apparent weight in the elevator will be

A. 9.8 N **B.** 19.6 N

C. 129.4 N **D.** 39.2 N

Answer & Explanation

Answer: Option **D**

Explanation:

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38. If a body of mass 10 kg is allowed to fall freely, its weight becomes

A. zero **B.** 89N

C. 9.8 N **D.** 10N

Answer & Explanation

Answer: Option **A**

Explanation:

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How many days would be in a year if the distance between the earth and the sun were reduced to half of its present value (assuming circular orbit)?

A. 365 days **B.** 730 days

C. 329 days **D.** 129 days

Answer & Explanation

Answer: Option **D**

Explanation:

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When a body is moving along a circular path it covers a certain angle in a given internal of time. Such type of motion is

A. vibratory motion **B.** linear motion

C. rotatory motion **D.** angular motion

Answer & Explanation

Answer: Option **D**

Explanation:

1. Waves transmit _____ from one place to another

A. energy **B.** mass

C. both **D.** none

Answer & Explanation

Answer: Option **A**

Explanation:

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2. The waves that require a material medium for their propagation are called

A. matter waves **B.** electromagnetic waves

C. carrier waves **D.** mechanical waves

Answer & Explanation

Answer: Option **D**

Explanation:

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3. The distance between any two consecutive crests or troughs is called

A. frequency **B.** period

C. wave length **D.** phase difference

Answer & Explanation

Answer: Option **C**

Explanation:

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When two identical traveling waves are superimposed, the velocity of the resultant wave

A. decreases **B.** increases

C. remains unchanged **D.** becomes zero

Answer & Explanation

Answer: Option **C**

Explanation:

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5. In vibrating cord the points where the amplitude is maximum, are called

A. antinodes **B.** nodes

C. troughs **D.** crests

Answer & Explanation

Answer: Option **A**

Explanation:

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6. The distance between two consecutive nodes is

A. ?/2 **B.** ?/4

C. ? **D.** 2?

Answer & Explanation

Answer: Option **A**

Explanation:

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7. The distance between consecutive node and anitnode is

A. ? **B.** ?/2

C. 2? **D.** ?/4

Answer & Explanation

Answer: Option **D**

Explanation:

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8. If stretching force T of wire increases, then its frequency

A. decreases **B.** increases

C. remains the same **D.** any of above

Answer & Explanation

Answer: Option **B**

Explanation:

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A stationary wave is set up in the air column of a closed pipe. At the closes end of the pipe

always an node in formed always an antinode is formed

neither node nor antinode is formed sometimes a node and sometimes an antinode is formed

Answer & Explanation

Answer: Option **A**

Explanation:

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It is possible to distinguish between transverse and longitudinal waves form the property of

A. refraction **B.** polarization

C. interference **D.** diffraction

Answer & Explanation

Answer: Option **B**

Explanation:

11. According to Newton sound travel in air under the conditions of

A. adiabatic **B.** isothermal

C. isobaric **D.** isochoric

Answer & Explanation

Answer: Option **C**

Explanation:

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12. Sound waves do not travel in vacuum because

A. they are transverse waves **B.** they are stationary

C. they require material medium for propagation **D.** they do not have enough energy

Answer & Explanation

Answer: Option **C**

Explanation:

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13. Velocity of sound in vacuum is

A. 332 ms-1 **B.** 320 ms-1

C. Zero **D.** 224 ms-1

Answer & Explanation

Answer: Option **C**

Explanation:

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14. Increase in velocity of sound in the air for 1 ?C rise in temperature is

A. 1.61 ms-1 **B.** 61.0 ms-1

C. 0.61 ms-1 **D.** 2.00 ms-1

Answer & Explanation

Answer: Option **C**

Explanation:

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15. The velocity of sound is greatest in

A. Water **B.** air

C. copper **D.** ammonia

Answer & Explanation

Answer: Option **C**

Explanation:

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16. On loading the prong of a tuning form with wax its frequency

A. increases **B.** decreases

C. remains unchanged **D.** may increase or decrease

Answer & Explanation

Answer: Option **B**

Explanation:

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The velocity of sound in air would become double than its velocity at 0?C at temperature

A. 313?C **B.** 586?C

C. 819?C **D.** 1172?C

Answer & Explanation

Answer: Option **C**

Explanation:

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18. The normal ear is the most sensitive in the frequency range

A. 20000 to 30000 hertz **B.** 10 to 20 hertz

C. 2000 to 4000 hertz **D.** 6000 to 8000 hertz

Answer & Explanation

Answer: Option **C**

Explanation:

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19. Ultrasonic have

frequency in the audible range

B. frequency is greater than 20 kHz

frequency lower than 20 Hz

all of above

Answer & Explanation

Answer: Option **B**

Explanation:

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The periodic alternation of sound between maximum and minimum loudness are called

A. silence zone

B. interference

C. beats

D. resonance

Answer & Explanation

Answer: Option **C**

Explanation:

21. The number of beats produced per second is equal to

the sum of the frequencies of two tuning forks

the difference of the frequencies of two tuning forks

the ratio of the frequencies of two tuning forks

the frequency of either of the two tuning forks

Answer & Explanation

Answer: Option **B**

Explanation:

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22. Beats are the results of

A. diffraction of sound waves **B.** constructive and destructive interference

C. polarization **D.** destructive interference

Answer & Explanation

Answer: Option **B**

Explanation:

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23. Silence zone takes place due to constructive interference **A.**

B. destructive interference

C. beats **D.** resonance

Answer & Explanation

Answer: Option **B**

Explanation:

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24. Doppler effect applies to sound wave only **A.**

B. light wave only

C. both sound and light waves **D.** neither sound nor light wave

Answer & Explanation

Answer: Option **C**

Explanation:

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When the source of sound moves away form a stationary listener then _____ occurs.

A. an apparent increase in frequency

B. an apparent decrease in frequency

C. an apparent decrease in wavelength

D. no apparent change in frequency

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A simple pendulum has a bob of mass m and its frequency is f. If we replaced the bob with a heavier one say of 2m then that will be its new frequency?

A. 1/4f

B. 1/2f

C. frequency lower than 20 Hz

D. 2f

Answer & Explanation

Answer: Option **C**

Explanation:

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Which one is the correct relation for fundamental frequency of open and closed pipe?

A. fopen = 2 fclosed

B. fclosed = 2fopen

C. fopen = fclosed

D. fopen = 1 / f closed

Answer & Explanation

Answer: Option **A**

Explanation:

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In open organ pipe

only even harmonics are present

only odd harmonics are present

both even and odd harmonics are present

selected harmonics are present

Answer & Explanation

Answer: Option **C**

Explanation:

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29. Which one is the correct relation?

A. VNewton = V Laplace

B. VNewton =

C. VNewton =

D. VNewton =

Answer & Explanation

Answer: Option **C**

Explanation:

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30. The dimension of elastic modulus ? is

A. ML-1T-2

B. ML-2T-2

C. MLT-2 **D.** ML2T-2

Answer & Explanation

Answer: Option **A**

Explanation:

The particles in the wave separated through _____ multiple of ? are out of phase to each other

A. (n) **B.** (n+1)

C. (n+1/2) **D.** both (a) and (c)

Answer & Explanation

Answer: Option **C**

Explanation:

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Waves produced at the surface of water by a pencil executing vibrating motion if held vertically at a frequency of 50Hz are

A. Longitudinal **B.** Transverse

C. Periodic **D.** both (a) and (c)

Answer & Explanation

Answer: Option **D**

Explanation:

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33. Newton estimated the speed of sound

A. 281m/sec **B.** 333m/sec

C. 340m/sec **D.** all of the above

Answer & Explanation

Answer: Option **A**

Explanation:

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Laplace found that the alternate compressions and rarefactions produced in sound waves follows

A. isothermal law **B.** adiabatic law

C. isochoric law **D.** all of the above

Answer & Explanation

Answer: Option **B**

Explanation:

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For destructive interference of sound waves the path difference between two interfering sounds should be

n? (n+1/2)?

some time n? and some times (n+1/2)? none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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36. The speed of sound in hydrogen is _____ time than that in oxygen

A. Two times **B.** Three times

C. Four time **D.** Six time

Answer & Explanation

Answer: Option **C**

Explanation:

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37. The beats frequency (sensible) for a human car is

A. 42Hz **B.** 7 Hz

C. 256Hz **D.** 262Hz

Answer & Explanation

Answer: Option **B**

Explanation:

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38. The speed of stationary waves in a stretched string are independent of

A. Number of loops **B.** Tension in the string

C. Point where string is plucked **D.** both (a) and (c)

Answer & Explanation

Answer: Option **D**

Explanation:

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Fundamental frequency of stationary waves in open pipe is _____ times the frequency in closed pipe.

A. One **B.** Two

C. Four time **D.** None of these

Answer & Explanation

Answer: Option **B**

Explanation:

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Which phenomena can be applied to estimate the velocity of star with respect to earth

A. Dopplers effect **B.** Interference of waves

C. Beats phenomena **D.** All of these

Answer & Explanation

Answer: Option **A**

Explanation:

1. Dimension of pressure is

A. MLT **B.** ML-1T-1

C. ML-1T-2 **D.** ML-2T-2

Answer & Explanation

Answer: Option **C**

Explanation:

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2. Temperature is a property which determines

How much heat a body contains

Whether a body will feel hot or cold to touch

In which direction heat will flow between two systems

How much total absolute energy a body has

Answer & Explanation

Answer: Option **C**

Explanation:

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3. We prefer mercury as a thermometric substance because

Over a wide range of temperature its expansion is uniform

It does not stick to thermometer glass

It opaque to light

All of above

Answer & Explanation

Answer: Option **D**

Explanation:

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4. The scales of temperature are based on two fixed points which are

A. The temperatures of water at 0? 100?C

B. The temperature of melting ice and boiling water at

atmospheric pressure

The temperatures of ice cold and boiling water

The temperatures of frozen and boiling mercury

Answer & Explanation

Answer: Option **B**

Explanation:

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5. Numerical value of Boltzmanns constant is

A. 1.38x10-31JK-1

B. 3.18x10-31JK-1

C. 3.18x10-23JK-1

D. 1.38x10-23JK-1

Answer & Explanation

Answer: Option **D**

Explanation:

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In a clinical thermometer the mercury in the capillary tube does not contract once removed from the patient because

Mercury takes a long time to contract

The amount of mercury use is very small

The capillary tube has a small constriction near the bulb

The capillary tube is very narrow

Answer & Explanation

Answer: Option **C**

Explanation:

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7. Normal human body temperature 98.6?F corresponds to

A. 37?C **B.** 42?C

C. 55?C **D.** 410?C

Answer & Explanation

Answer: Option **A**

Explanation:

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8. The Fahrenheit and centigrade scales agree to

A. 40 **B.** 15.5

C. 542 **D.** 273

Answer & Explanation

Answer: Option **A**

Explanation:

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9. The size of one degree of Celsius is equal to

A. One degree of Fahrenheit scale **B.** 1.8 degrees of Fahrenheit scale

C. 3.2 degrees of Fahrenheit scale **D.** 2.12 degrees of Fahrenheit scale

Answer & Explanation

Answer: Option **B**

Explanation:

View Answer Workspace Report Discuss in Forum

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10. At constant temperature the graph between V and 1/P is

A. Hyperbola **B.** Parabola

C. A curve of any shape **D.** A straight lime

Answer & Explanation

Answer: Option **D**

Explanation:

11. According to Pascals law the pressure of gas in a vessel is

A. Different in different direction **B.** Same in all

C. Same only along opposite directions **D.** Same only along normal directions

Answer & Explanation

Answer: Option **B**

Explanation:

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12. We can produce heat by

A. Frictional process **B.** Chemical processes

C. Electrical processes **D.** All of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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13. Which one is true for internal energy?

It is sum of all forms of energies associated with molecules of a system

It is a state function of a system

It is proportional to transnational K.E of the molecules

All are correct

Answer & Explanation

Answer: Option **D**

Explanation:

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Metabolism is the name of a process in which energy transformation takes place within

A. Heat engine

B. Human body

C. Atmosphere

D. Laboratory

Answer & Explanation

Answer: Option **B**

Explanation:

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15. Which one is not an example of adiabatic process ?

A. rapid escape of air from a burst tyre

B. rapid expansion

C. conversion of water into ice in refrigerator

D. cloud formation in the atmosphere

Answer & Explanation

Answer: Option **C**

Explanation:

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16. The pressure exerted by a column of mercury 76cm high and at 0?C is called

A. 1 atmosphere

B. 1 Newton per square meter

C. 1 Pascal

D. data is insufficient

Answer & Explanation

Answer: Option **A**

Explanation:

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17. Standard condition STP refer to a gas at

A. 76cm 0?C

B. 760mm 273K

C. 1atm 273K

D. all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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18. If the volume of a gas is held constant and we increase its temperature then

A. its pressure is constant **B.** its pressure rises

C. its pressure falls **D.** any of above

Answer & Explanation

Answer: Option **B**

Explanation:

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If the pressure of a given gas is held constant its density is inversely proportional to its absolute temperature. We can refer it as another statement of

A. Boyles law **B.** Charles law

C. Ideal gas law **D.** Avagadros law

Answer & Explanation

Answer: Option **B**

Explanation:

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20. Boyles law helds for ideal gases in isochoric processes **A.** **B.** isobaric processes

C. isothermal processes **D.** adiabatic processes

Answer & Explanation

Answer: Option **C**

Explanation:

Gas molecules of different masses in the same container have the same average transnational kinetic energy which is directly proportional to their

A. volume **B.** pressure

C. absolute temperature **D.** time

Answer & Explanation

Answer: Option **C**

Explanation:

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22. Which one of correct relation ?

A. Cp+Cv=? **B.** Cp=1+R/Cv

C. ?=Cp/Cv **D.** Cp=1-R/Cv

Answer & Explanation

Answer: Option **C**

Explanation:

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The reading on the Fahrenheit scale will be double the reading on the centigrade scale when the temperature on the centigrade scale is

A. 460?C **B.** 280?C

C. 360?C **D.** 160?C

Answer & Explanation

Answer: Option **C**

Explanation:

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The area enclosed by the curve ABCDA for a Carnot heat engine represents the work done by Carnot engine

A. at any instant **B.** averagely

C. during its operation **D.** during one cycle

Answer & Explanation

Answer: Option **D**

Explanation:

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25. For a gas obeying Boyles law if the pressure is doubled the volume becomes

A. double **B.** one half

C. four times **D.** one fourth

Answer & Explanation

Answer: Option **B**

Explanation:

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26. Triple point of water is

A. 273?C at 6.11 Kpa **B.** 273K at 61.6 Kpa

C. 273.16?C at 0.611 Kpa **D.** 273.16K at 750 Kpa

Answer & Explanation

Answer: Option **C**

Explanation:

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Which of the following properties of molecules of a gas is same for all gases at particular temperature?

A. momentum **B.** mass

C. velocity **D.** kinetic energy

Answer & Explanation

Answer: Option **D**

Explanation:

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Boltzman constant K in terms of universal gas constant R and Avagadros number Na is give as

A. K = RNa **B.** K = R/Na

C. K = Na/Ra **D.** K = nRNa

Answer & Explanation

Answer: Option **B**

Explanation:

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29. Average translational kinetic energy per molecule of an ideal gas is given by

A. 3NaT/2R **B.** 2NaT/3

C. 3RT/2Na **D.** 3Na/2RT

Answer & Explanation

Answer: Option **C**

Explanation:

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30. In which process entropy remains constant

A. isobaric **B.** isochoric

C. adiabatic **D.** isothermal

Answer & Explanation

Answer: Option **C**

Explanation:

31. Adiabatic process is also called

A. Heat exchange process **B.** Heating process

C. Isentropic process **D.** All of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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32. Which quantity is a state function

A. internal energy **B.** heat supply

C. pressure **D.** volume

Answer & Explanation

Answer: Option **A**

Explanation:

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33. The value of ? for diatomic gas is

A. 1.67 **B.** 1.4

C. ? = 1.3 **D.** none

Answer & Explanation

Answer: Option **B**

Explanation:

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34. The work done in the isochoric process is

A. constant **B.** variable

C. zero **D.** depends on situation

Answer & Explanation

Answer: Option **C**

Explanation:

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35. In which process all the heat supplied is converted into work done.

A. isothermal isochoric **B.**

C. isobaric **D.** isentropic

Answer & Explanation

Answer: Option **A**

Explanation:

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36. For the successful operation of Heat engine which condition should be met.

A. cyclic process **B.** operated at certain

C. both (a) and (b) **D.** none of these

Answer & Explanation

Answer: Option **C**

Explanation:

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37. The performance of a refrigerator is described by

A. efficiency **B.** coefficient of performance

C. both (a) and (b) **D.** not described

Answer & Explanation

Answer: Option **B**

Explanation:

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38. The purpose of flywheel in the engines

A. is to smooth out the energy variation

B. to add more weight to engine to work it stable

C. to start engine

D. both (a) and (b)

Answer & Explanation

Answer: Option **A**

Explanation:

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39. The unit of entropy is

A. J.K

B. J/K

C. N.m/sec

D. Kgm2/sec2.K

Answer & Explanation

Answer: Option **B**

Explanation:

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40. Petrol engine is a

A. C.I engine

B. SI engine

C. IC engine

D. all the above

Answer & Explanation

Answer: Option **D**

Explanation:

Magnetic force acting on a unit positive charge moving perpendicular to the magnetic field with a unit velocity is called

A. magnetic flux **B.** magnetic field intensity

C. magnetic induction **D.** self inductance

Answer & Explanation

Answer: Option **C**

Explanation:

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A current carrying conductor is placed in a uniform magnetic field parallel to it. The magnetic force experienced by the conductor is

A. F=1/B **B.** F=1/Bsin?

C. F/0 **D.** F=1/Bcos?

Answer & Explanation

Answer: Option **C**

Explanation:

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What is the value of the current in a wire of 10cm long at the right angle to a uniform magnetic field of 0.5 Weber/m2 when the force acting on the wire is 5N?

A. 1A **B.** 10A

C. 100A **D.** 1000A

Answer & Explanation

Answer: Option **C**

Explanation:

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When a particle of charge q and mass m enters into a uniform magnetic field B moving with a velocity v perpendicular to the direction for the field it describes a circular path of radius

A. R=qB/mV **B.** R=mV/qB

C. R=qmV/B **D.** R=qmB/V

Answer & Explanation

Answer: Option **B**

Explanation:

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When a particle of charge q and mass m enters the uniform magnetic field B moving with velocity v perpendicular to the direction of the field the time required by a charged particle to make a complete revolution in a magnetic field is given by

T=

Answer & Explanation

Answer: Option **B**

Explanation:

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6. Two parallel wires carrying currents in the opposite directions

repel each other

attract each other

have no effect upon each other

they cancel out their individual magnetic fields

Answer & Explanation

Answer: Option **A**

Explanation:

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7. A magnetic compass will be deflected if it is kept near a

A. charge in motion

B. charge at rest

C. both

D. none

Answer & Explanation

Answer: Option **A**

Explanation:

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8. A magnetic field

always exerts a force on a charged particle

never exerts a force on a charged particles

exerts a force if the charged particle is moving in the direction of the magnetic field lines

exerts a force if the charged particle is moving perpendicular to the magnetic field lines

Answer & Explanation

Answer: Option **D**

Explanation:

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A moving coil galvanometer of resistance 100? gives half scale deflection for a current of 20mA. What will be the potential difference across it?

A. 4 volt **B.** 5 volt

C. 2 volt **D.** 0.4 volt

Answer & Explanation

Answer: Option **C**

Explanation:

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Which one of the following material is most suitable for making core of an electromagnet?

A. air **B.** steel

C. Cu-Ni alloy **D.** soft iron

Answer & Explanation

Answer: Option **D**

Explanation:

The magnetic force experienced by a charge particle moving in a magnetic field will be minimum when it moves

A. perpendicular to the field **B.** parallel to the field

C. inclined parallel to the field **D.** at an angle of 45?

Answer & Explanation

Answer: Option **B**

Explanation:

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The relationship between Tesla and smaller unit Gauss of magnetic induction is given by

A. 1T = 103 G **B.** 1T = 10-4 G

C. 1T = 10-2 G **D.** 1T = 104 G

Answer & Explanation

Answer: Option **D**

Explanation:

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If the plane of the rectangular coil is parallel to the magnetic field (i.e radial magnetic field) the torque on the coil is

? = NIAB cos? ? = NIAB sin?

? = NIAB tan? ? = NIAB

Answer & Explanation

Answer: Option **D**

Explanation:

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14. SI unit of flux density is

A. NA-1m-1 **B.** NAm-1

C. NmA-1 **D.** NmA-2

Answer & Explanation

Answer: Option **A**

Explanation:

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15. Magnetic flux and flux density are related by

A. magnetic flux = flux density / area **B.** magnetic flux = flux density x area

C. flux density = magnetic flux / area **D.** flux density = magnetic flux x area

Answer & Explanation

Answer: Option **B**

Explanation:

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16. The standard vector symbol for flux density is

A. M **B.** L

C. H **D.** B

Answer & Explanation

Answer: Option **D**

Explanation:

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The charged particle enters the uniform magnetic field in such a way that its initial velocity is not perpendicular to the field the orbit will be

A. a circle **B.** a spiral

C. an ellipse **D.** helix

Answer & Explanation

Answer: Option **D**

Explanation:

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An electron enters a region where the electric field E is perpendicular to the magnetic field B. It will suffer no deflection if

A. E = BeV **B.** B = eE/V

C. E = BV **D.** E = BeV/2

Answer & Explanation

Answer: Option **C**

Explanation:

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19. Value of permeability of tree space in SI units is

A. 4?x10-9 WbA-1m-1 **B.** 4?x10-7 WbA-1m-1

C. 4?x10-10 WbA-1m-1 **D.** 4?x10-8 WbA-1m-1

Answer & Explanation

Answer: Option **B**

Explanation:

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20. The magnetic field strength of solenoid is

A. B = ??NI **B.** B = ??N/I

C. B = ??nI **D.** both (b) and (c)

Answer & Explanation

Answer: Option **D**

Explanation:

21. An instrument which can measure potential without drawing any current is

A. voltmeter **B.** galvanometer

C. cathode ray oscilloscope (CRO) **D.** ammeter

Answer & Explanation

Answer: Option **C**

Explanation:

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The deflection for 50 division of galvanometer is decreased to 25 divisions by shunt resistance of 12?. Galvanometer resistance is

A. 18? **B.** 30?

C. 24? **D.** 12?

Answer & Explanation

Answer: Option **D**

Explanation:

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When the coil of the galvanometer is in equilibrium then the deflecting couple is

A. zero

B. equal to the restoring couple

C. greater than the restoring couple

D. smaller than the restoring couple

Answer & Explanation

Answer: Option **B**

Explanation:

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24. The sensitivity of a galvanometer is given by

A. C/BAN

B. CAN/B

C. BAN/C

D. ABC/N

Answer & Explanation

Answer: Option **A**

Explanation:

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25. Which one of the following is not an electromechanical instrument?

A. galvanometer **B.** voltmeter

C. ammeter **D.** AC transformer and DC generator

Answer & Explanation

Answer: Option **D**

Explanation:

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Minimum current required to produce a deflection of 1 mm on a scale at a distance of 1 meter is

A. 0.1 A **B.** 1:00 AM

C. current sensitivity **D.** 1 m A

Answer & Explanation

Answer: Option **C**

Explanation:

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27. In a multi range ammeter as the range increases

A. shunt value decreases **B.** shunt value increases

C. shunt value remains the same **D.** none of the above

Answer & Explanation

Answer: Option **A**

Explanation:

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While measuring the unknown resistance the help of slide wire bridge a greatest accuracy can be achieved when

A. a most sensitive galvanometer is used

B. a steady voltage cell is used

the balance point is close to the middle of the wire

a high resistance box is used in one of its gap

Answer & Explanation

Answer: Option **C**

Explanation:

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A sensitive galvanometer gives full-scale deflection with 100 mV. If the resistance of the galvanometer is 50? the maximum current that can flow through safely is

A. 2.0 mA

B. 20 mA

C. 200 mA

D. 0.2 mA

Answer & Explanation

Answer: Option **A**

Explanation:

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An ammeter measures the total current flowing through a circuit when it is connected

A. in series with the circuit

B. in parallel with circuit

C. in series with any of the parallel resistances in the circuit

D. in parallel with any of the series resistances in the circuit

Answer & Explanation

Answer: Option **A**

Explanation:

Coil of a galvanometer is suspended in a radial magnetic field so that the deflecting torque on the coil is always

A. BINA cosa

B. BINA sina

C. BINA tana

D. BINA

Answer & Explanation

Answer: Option **D**

Explanation:

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32. A galvanometer basically is an instrument used to

detect current in a circuit

measure current flowing through a circuit

measure voltage across a circuit

measure potential difference between two points in a circuit

Answer & Explanation

Answer: Option **A**

Explanation:

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The effective way to increase the sensitivity of a moving coil galvanometer is to

use a very long and fine suspension

use a coil of very large area

use a coil with very large number of turns

use a very strong magnetic field

Answer & Explanation

Answer: Option **D**

Explanation:

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34. A wheat stone bridge is said to be balanced when

A. maximum current flows through the galvanometer branch

B. minimum current flows through the galvanometer branch

C. potential difference across galvanometer branch is maximum

D. potential difference across galvanometer branch is zero

Answer & Explanation

Answer: Option **D**

Explanation:

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When an electron moving with a uniform speed in a vacuum enters a magnetic field in a direction perpendicular to the field the subsequent path of the electron is

a straight line parallel to the field

a parabola in a plane perpendicular to the field

a circle in a plane perpendicular to the field

a straight line along its initial direction

Answer & Explanation

Answer: Option **C**

Explanation:

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A particle of mass m charge q and speed V enters a uniform magnetic radius r. The radius r of the circle is

A. independent mass m

B. directly proportional to m

C. directly proportional to q

D. directly proportional to B

Answer & Explanation

Answer: Option **B**

Explanation:

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37. Galvanometer is a very sensitive device with

A. very low damping

B. very high damping

C. no damping at all

D. radial field disintegration

Answer & Explanation

Answer: Option **A**

Explanation:

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Which one of the following methods would be able to increase the sensitivity of a moving coil galvanometer ?

A. connect a shunt across the coil

use a coil of smaller cross sectional area

use a coil having less number of turns

use spiral springs whose force constant is small

Answer & Explanation

Answer: Option **D**

Explanation:

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39. Heating a magnet will

A. weaken it

B. strengthen it

C. reverse its polarity

D. demagnetize it completely

Answer & Explanation

Answer: Option **A**

Explanation:

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40. If a current carrying solenoid is suspended freely it will

A. be rotating

B. come to rest in N-S direction

C. vibrating like galvanometer needle

D. comes to rest after rotation

Answer & Explanation

Answer: Option **B**

Explanation:

1. Which of the following substances posses the highest elasticity?

A. Rubber Steel **B.**

C. Glass **D.** Copper

Answer & Explanation

Answer: Option **B**

Explanation:

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2. What is the SI unit of modulus of elasticity of substance?

A. Nm-2 Jm-2 **B.**

C. Nm-1 **D.** Being a number it has no unit.

Answer & Explanation

Answer: Option **A**

Explanation:

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3. What are the dimensions of stress?

A. MLT-2 **B.** ML-2T-1

C. ML-1T-2 **D.** ML?T-1

Answer & Explanation

Answer: Option **C**

Explanation:

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The figure shown the stress-strain graph of a certain substance. Over which region of the graph is Hooks law obeyed?

A. AB **B.** BC

C. CD **D.** ED

Answer & Explanation

Answer: Option **D**

Explanation:

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Which one of the following physical quantities does not have the dimensions of force per unit area?

A. Stress **B.** Strain

C. Youngs modulus **D.** Pressure

Answer & Explanation

Answer: Option **B**

Explanation:

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A rubber cord of cross-sectional area 2cm2 has a length of 1m. When a tensile force of 10N is applied the length of the cord increases by 1cm. What is the youngs modulus of rubber?

A. 2x108 Nm-2 **B.** 5x106 Nm-2

C. 0.5x10-6 Nm-2 **D.** 0.2x10-6Nm-2

Answer & Explanation

Answer: Option **B**

Explanation:

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A ire of length L is stretched by a length ? when a force F is applied at one end. If the elastic limit is not exceeded the amount of energy stored in the wire is

A. F? **B.** (F?)

C. F? 2/L **D.** F?2

Answer & Explanation

Answer: Option **B**

Explanation:

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When a force is applied at one end of an elastic wire it produces at strain ? in the wire. If y is the youngs modulus of the material of the wire the amount of energy stored per unit volume of the wire is given by

A. Y? **B.** Y?

C. Y?2 **D.** Y?2

Answer & Explanation

Answer: Option **D**

Explanation:

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A wire suspended vertically from one end is stretched by attaching a weight of 20N to the lower end. The weight stretches the wire by 1mm. How much energy is gained by the wire?

A. 0.01J **B.** 0.02J

C. 0.04J **D.** 1.0J

Answer & Explanation

Answer: Option **A**

Explanation:

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A certain stress applied to an elastic material produces a certain strain in it. If the elastic limit is not exceeded the energy gained per unit volume of the material is given by

A. Stress/strain **B.** (stress/strain)

C. Stress x strain **D.** (Stress / strain)

Answer & Explanation

Answer: Option **D**

Explanation:

A uniform steel wire of length 4m and area of cross-section 3x10-6m2 is extended by 1mm by the application of a force. If the youngs modulus of steel is 2x1011 Nm-2 the energy stored in the wire is

A. 0.025J **B.** 0.50J

C. 0.75J **D.** 0.100J

Answer & Explanation

Answer: Option **C**

Explanation:

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12. The ration stress to strain in youngs modulus of the material then tension is

A.	Directly proportional to extension.	**B.**	Directly proportional to strain.
C.	Directly proportional to square of amplitude.	**D.**	Inversely proportional to extension.

Answer & Explanation

Answer: Option **A**

Explanation:

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13. Materials that undergo plastic deformation before breaking are called

A.	Brittle	**B.**	Ductile
C.	Amorphous	**D.**	Polymers

Answer & Explanation

Answer: Option **B**

Explanation:

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A wire is stretched by a force F which causes an extension 1. The energy stored in the wire is

The extension of the wire is proportional to the force applied

The weight of the wire is negligible

The wire is not stretched beyond its elastic limit

The cross sectional area of the wire remains constant

Answer & Explanation

Answer: Option **A**

Explanation:

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A wire obeys Hooks law is of length 11 when it is in equilibrium under a tension F1. Its length becomes 12 when the tension is increased to F2. The energy stored in the wire during this process is

A. (F1+F2) (121+122)

B. (F1+F2) (122-112)

C. (F1+F2) (12-11)

D. (F1+F2) (12-11)

Answer & Explanation

Answer: Option **C**

Explanation:

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16. Formation of large molecule by joining small molecules is

A. Fusion

B. Polymerization

C. Crystallization

D. Subtraction

Answer & Explanation

Answer: Option **B**

Explanation:

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Any alteration produced in shapes length or volume when a body is subjected to some external force is called

A. Stiffness

B. Toughness

C. Extension

D. Deformation

Answer & Explanation

Answer: Option **D**

Explanation:

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18. The energy band occupied by the valence electrons is called

A. Energy state

B. Valence band

C. ve energy state

D. conduction band

Answer & Explanation

Answer: Option **B**

Explanation:

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19. The curie temperature is that at which

A. Semi-conductor becomes conductors

B. Ferromagnetic becomes paramagnetic

C. Paramagnetic becomes diamagnetic

D. Metals become super conductor

Answer & Explanation

Answer: Option **B**

Explanation:

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20. A ferromagnet will become fully magnetized at

A. High voltage A.C

B. Low voltage A.C

C. Alternating current at its peak value

D. D.C current at peak value

Answer & Explanation

Answer: Option **C**

Explanation:

21. Coercive force is the force which opposes

A. Demagnetization

B. Breakage

C. Extension

D. Surface cracking

Answer & Explanation

Answer: Option **A**

Explanation:

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Materials in which valence electrons are tightly bound to their atoms at low temperature are called

A. Semi conductor

B. Super conductors

C. Insulators

D. Conductor

Answer & Explanation

Answer: Option **C**

Explanation:

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The bulk properties of materials such as their mode of fracture can be related to their

A. Polymerization

B. Cleavage

C. Microstructure

D. Dislocation

Answer & Explanation

Answer: Option **C**

Explanation:

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The angular position of cells remains the same for a sample of a crystal. This property is called

A. Isotropy

B. Cleavage

C. Homogeneity

D. The external symmetry of form

Answer & Explanation

Answer: Option **D**

Explanation:

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25. The breaking of crystals along definite direction is called

A. Cleavage **B.** Symmetry

C. Isotropy **D.** Homogeneity

Answer & Explanation

Answer: Option **A**

Explanation:

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26. If the density of atoms remain same along any direction in a crystal is called

A. Symmetry **B.** Homogeneity

C. Isotropy **D.** Cleavage

Answer & Explanation

Answer: Option **B**

Explanation:

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27. In simple cube one atom or molecule lies at its

A. Force corners **B.** Nine corners

C. Eight corners **D.** Six corners

Answer & Explanation

Answer: Option **C**

Explanation:

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28. The band theory of solids explains satisfactorily the nature of

A. Electrical insulators alone **B.** Electrical conductors alone

C. Electrical semi conductors **D.** All of the above alone

Answer & Explanation

Answer: Option **D**

Explanation:

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29. A vacant or partially filled band is called

A. Conduction band **B.** Valence band

C. Forbidden band **D.** Empty band

Answer & Explanation

Answer: Option **A**

Explanation:

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30. A completely filled band is called

A. Conduction band **B.** Valence band

C. Forbidden band **D.** Core band

Answer & Explanation

Answer: Option **D**

31. The electrons in conduction band are free to

A. Transport vibrations **B.** Transport signals

C. Transport charge **D.** Transport impulses

Answer & Explanation

Answer: Option **C**

Explanation:

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32. Which one has the greatest energy gap ?

A. Semi conductor **B.** Conductor

C. Metals **D.** Non metals

Answer & Explanation

Answer: Option **D**

Explanation:

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33. Many of the semi conductors are crystals of the type

A. Face centred cubic **B.** Body centred cubic

C. Simple cubic **D.** All of the above

Answer & Explanation

Answer: Option **A**

Explanation:

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With increase in temperature the electrical conductivity of intrinsic semi conductor

A. Decreases **B.** Increases

C. Remains same **D.** First increases then decreases

Answer & Explanation

Answer: Option **B**

Explanation:

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35. Holes can exist in

A. Conductors **B.** Insulators

C. Semi conductors **D.** All of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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36. On the basis of band theory of solids the semiconductors have

A party filled valence band and totally empty conduction band

A completely filled valence band a totally empty conduction band and a very wide forbidden band

C. A completely filled valence band a partially filled conduction band and a narrow forbidden band

D. A partly filled valence band a totally empty conduction band and a wide forbidden band

Answer & Explanation

Answer: Option **C**

Explanation:

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37. In a semiconductors the charge carriers are

A. Holes only

B. Electrons only

C. Electron and holes both

D. All of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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38. The net charge on n-type material is

A. Positive

B. Negative

C. Both positive and negative

D. Neutral

Answer & Explanation

Answer: Option **D**

Explanation:

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39. Very weak magnetic fields are detected by

A. Squids

B. Magnetic resonance imaging (MRI)

C. Magnetometer

D. Oscilloscope

Answer & Explanation

Answer: Option **A**

Explanation:

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40. Energy needed to magnetize and demagnetize is represented by

A. Hysteresis curve

B. Hysteresis loop area

C. Hysteresis loop

D. Straight line

Answer & Explanation

Answer: Option **B**

Explanation:

1. Ratio of the weight of H-atom to that of an electron is approximately

A. 18.336

B. 1836

C. 18360

D. 183.6

Answer & Explanation

Answer: Option **B**

Explanation:

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2. Photon of highest frequency will be absorbed when transition takes place from

A. 1st to 5th orbit **B.** 2nd to 5th orbit

C. 3rd to 5th orbit **D.** 4th to 5th orbit

Answer & Explanation

Answer: Option **A**

Explanation:

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In hydrogen spectrum which one of the following series lies in the ultraviolet region?

A. Balmer series **B.** Pfund series

C. Bracket series **D.** Lymann series

Answer & Explanation

Answer: Option **D**

Explanation:

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4. In obtaining an X-ray photograph of our hand we use the principle of

A. photo electric effect **B.** ionization

C. shadow photograph **D.** any of above

Answer & Explanation

Answer: Option **C**

Explanation:

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5. Excited atoms return to their ground state in

A. 10-10s **B.** 10-8s

C. 10-6s **D.** 10-9s

Answer & Explanation

Answer: Option **B**

Explanation:

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6. When we excite some atoms by heat collision or electrical discharge they will

radiate electromagnetic energy with a continuous distribution of wavelength

absorb particular wavelengths when white light is incident on them

radiate electromagnetic energy of discrete characteristic wavelength

emit either invisible or visible light

Answer & Explanation

Answer: Option **C**

Explanation:

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7. Hydrogen atom does not emit X-rays because

its energy levels are too close to each other

its energy levels are too far apart

C. it is too small in size **D.** it has a single electron

Answer & Explanation

Answer: Option **D**

Explanation:

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8. Which one of following postulate is in accordance with the Rutherfords model?

A. continuous spectra for atoms discrete spectra for atoms **B.**

C. either continuous nor discrete **D.** no spectrum

Answer & Explanation

Answer: Option **A**

Explanation:

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9. X-ray are

A. of unknown nature **B.** high energy electrons

C. high energy photons **D.** radio isotopes

Answer & Explanation

Answer: Option **C**

Explanation:

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10. Tick the correct statement

A. an atom has limited number of ionization potentials but a **B.** there are as many excitation potentials as there are excited

large number of excitation potentials

states

C. the difference between the energy of the ground sate and any one of the excited states is the measure of excitation energy

D. all of above

Answer & Explanation

Answer: Option **D**

Explanation:

11. Ground state energy of the 4th orbit in a H-atom is

A. ?13.60 eV

B. ?3.40 eV

C. ?0.85 eV

D. ?1.51 eV

Answer & Explanation

Answer: Option **C**

Explanation:

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12. Total number of series in hydrogen spectrum is

A. three

B. four

C. five

D. six

Answer & Explanation

Answer: Option **C**

Explanation:

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13. The radiations emitted form hydrogen filled discharge tube show

A. band spectrum **B.** line spectrum

C. continuous spectrum **D.** absorption spectrum

Answer & Explanation

Answer: Option **B**

Explanation:

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The electric P.E of an electron in an orbit at a distance rn from the positive charge

A. Ke2/rn **B.** Ke2/rn2

C. ?Ke2/rn **D.** ?Ke2/rn2

Answer & Explanation

Answer: Option **C**

Explanation:

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15. Radiation with wavelength longer than red lights

A. ultraviolet rays **B.** X-rays

C. infra red radiation **D.** visible radiation

Answer & Explanation

Answer: Option **C**

Explanation:

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16. Bracket series is obtained when all transition of electron terminate on

A. 4th orbit **B.** 5th orbit

C. 3rd orbit **D.** 2nd orbit

Answer & Explanation

Answer: Option **A**

Explanation:

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17. In an electronic transition atom cannot emit

A. ?-rays **B.** infra red radiation

C. visible light **D.** ultraviolet rays

Answer & Explanation

Answer: Option **A**

Explanation:

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18. Reverse process of photoelectric effect is

A. pair production **B.** Compton effect

C. annihilation of matter **D.** X-rays production

Answer & Explanation

Answer: Option **D**

Explanation:

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19. X-rays are similar in nature to

A. cathode rays **B.** positive rays

C. ?-rays **D.** ?-rays

Answer & Explanation

Answer: Option **C**

Explanation:

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20. The penetrating power of X-rays depends on their

A. applied voltage **B.** frequency

C. source **D.** all of the above

Answer & Explanation

Answer: Option **B**

Explanation:

When X-rays are passed through successive aluminum sheets what happens to their thickness?

A. increases **B.** it decreases

C. it remains same **D.** sometimes increases and

sometimes decreases

Answer & Explanation

Answer: Option **C**

Explanation:

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22. The penetrating power of X-rays is comparable with that of

A. ? - rays **B.** ? - rays

C. ? - rays **D.** all of above

Answer & Explanation

Answer: Option **C**

Explanation:

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Quality of X-rays depends upon _____ A-filament current B-accelerating voltage C-material of the target

A. A&B **B.** B&C

C. A&C **D.** A B & C

Answer & Explanation

Answer: Option **B**

Explanation:

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24. Radiation produced from TV picture tube is

A. ?-rays **B.** X-rays

C. Far infrared. **D.** Infrared

Answer & Explanation

Answer: Option **B**

Explanation:

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In an X-ray tube electrons each of charge e are accelerated through V potential difference allowed to hit a metal target. The wavelength of the X-rays emitted is

A. he/ev **B.** he/Vc

C. eV/h **D.** impossible to predict

Answer & Explanation

Answer: Option **A**

Explanation:

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26. The minimum wavelength of X-rays can further be reduced by

Reducing the pressure or cooling the target.

Increasing the temperature of the filament.

Using a target element of higher atomic number.

Increasing the potential difference between the cathode and the target.

Answer & Explanation

Answer: Option **D**

Explanation:

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27. The characteristic X-rays spectrum is due to

The illumination of the target metal by ultra-violet radiation.

The bombardment of the target by protons.

The bombardment of target by electrons.

The absorption of ? radiation by the target metal.

Answer & Explanation

Answer: Option **C**

Explanation:

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The minimum wavelength of X-rays produced by the bombardment of electrons on the screen of a television set where the accelerating potential is 2.0K V will be

A. 6.2 x 10-10m

B. 9.1 x 10-18m

C. 3.11 x 10-10m

D. 4 x 10-10m

Answer & Explanation

Answer: Option **A**

Explanation:

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Maximum frequency in the spectrum from X-ray tube is directly proportional to the

Number of incident electron i.e. filament current.

The kinetic energy of the incident electron i.e. the potential difference through which they are accelerated.

The soft target which can easily emit electrons.

all of above are correct.

Answer & Explanation

Answer: Option **B**

Explanation:

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30. X-rays are diffracted by a crystal but not by a diffraction grating because

The ions in a crystal are well arranged.

The lines in a diffraction grating cannot reflect X-rays.

The penetration power of X-rays is high in a diffraction grating.

The wavelengths of X-rays are of the same order of magnitude as the separation between atoms in a crystal

Answer & Explanation

Answer: Option **D**

Explanation:

31. UV radiation can be produced by

A. Heating the filament.

B. Electron excitation in the gas.

C. Ionization of atoms.

D. All the above.

Answer & Explanation

Answer: Option **B**

Explanation:

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32. What is the velocity of a particle of mass m & de-Broglie wavelength ??

A. h/m?

B. 2h/m?

C. mh/h

D. (2hc/m?)1/2

Answer & Explanation

Answer: Option **A**

Explanation:

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33. Wave-like characteristic of electron is demonstrated by

A. Line spectrum of atoms.

B. Production of x-rays.

C. Diffraction by crystalline solids.

D. Photoelectric effect.

Answer & Explanation

Answer: Option **C**

Explanation:

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34. Electron cannot exist in the nucleus it is confirmed by observing that

A. It does emit ?-radiation.

B. Its size as compare to proton

and neutron is very small.

No antiparticle of electron is present.

The velocity of electron must be very high according to uncertainty principle.

Answer & Explanation

Answer: Option **D**

Explanation:

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35. In normal state of energy the incident high energy photons will be

A. Stimulated.

B. Absorbed.

C. Cause X-ray emission.

D. Cause laser production.

Answer & Explanation

Answer: Option **B**

Explanation:

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In laser production the state in which more atoms are in the upper state than in the lower one is called

A. Metal stable state.

B. Normal state.

C. Inverted population.

D. All the above.

Answer & Explanation

Answer: Option **C**

Explanation:

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37. The metastable state for an atom in laser light is

A. 10-4 sec **B.** 10-5 sec

C. 10-3 sec **D.** 10-8 sec

Answer & Explanation

Answer: Option **C**

Explanation:

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38. In He-Ne laser the lasing action is produced by

A. Ne only. **B.** He-Ne both

C. Electrons of He. **D.** Electrons Ne.

Answer & Explanation

Answer: Option **A**

Explanation:

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39. Reflecting mirrors in laser is used to

A. Further stimulation **B.** Lasing more

C. For producing more energetic lasers. **D.** All

Answer & Explanation

Answer: Option **A**

Explanation:

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The velocity of laser light is **A.**

Less than ordinary light.

More than ordinary light.

Equal to ordinary light.

Different for different colours or frequency.

Answer & Explanation

Answer: Option **C**

Explanation

1. When body is in motion, _____ always changes.

A. its velocity

B. its acceleration

C. its position vector

D. its momentum

Answer & Explanation

Answer: Option **C**

Explanation:

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2. A body is moving with uniform velocity. Its

A. speed changes

B. acceleration

C. direction of motion changes

D. displacement from origin changes

Answer & Explanation

Answer: Option **D**

Explanation:

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A man is in a car is moving with velocity of 36km/hr. His speed with repect to the car is

A. 10m/s **B.** 36m/s

C. zero **D.** infinite

Answer & Explanation

Answer: Option **C**

Explanation:

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4. When velocity time graph is a straight line parallel to time axis then

A. acceleration is const **B.** acceleration is variable

C. acceleration is zero **D.** velocity is zero

Answer & Explanation

Answer: Option **C**

Explanation:

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5. Area under velocity time graph represent

A. force **B.** displacement

C. distance **D.** acceleration

Answer & Explanation

Answer: Option **C**

Explanation:

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6. Slope of velocity time graph is

A. acceleration **B.** distance

C. force **D.** momentum

Answer & Explanation

Answer: Option **A**

Explanation:

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7. Instantaneous and average velocities become equal when body

A. has zero acceleration **B.** has uniform acceleration

C. has variable acceleration **D.** moves in a circle

Answer & Explanation

Answer: Option **A**

Explanation:

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8. Which law of motion is also called law of inertia?

A. 1st law

B. 2nd law

C. 3rd law

D. all 1st, 2nd and 3rd laws

Answer & Explanation

Answer: Option **A**

Explanation:

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9. Inertia of an object is quantitative measure of its

A. volume

B. density

C. mass

D. temperature

Answer & Explanation

Answer: Option **C**

Explanation:

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10. Newtons laws do not hold good for particles

A. at rest

B. moving slowly

C. move with high velocity

D. comparable to velocity of light

Answer & Explanation

Answer: Option **D**

Explanation:

11. 1st law of motion gives the definition of

A. rest **B.** motion

C. velocity **D.** force

Answer & Explanation

Answer: Option **D**

Explanation:

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12. 2nd law of motion gives the definition of

A. force **B.** acceleration

C. velocity **D.** both force and acceleration

Answer & Explanation

Answer: Option **B**

Explanation:

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3rd law of motion explains

A. effect of force existence of a force

existence of two forces existence of pair of forces in nature

Answer & Explanation

Answer: Option **D**

Explanation:

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Momentum depends upon **A.**

force acts on the body

mass of the body

velocity of the body

D. both mass and velocity of the body

Answer & Explanation

Answer: Option **D**

Explanation:

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15. The dimension of force is

A. MLT-2

B. ML2T-2

C. ML2T2

D. ML-2T-2

Answer & Explanation

Answer: Option **A**

Explanation:

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16. When a body moves in a straight line then its displacement coincides with

A. distance

B. force

C. acceleration is zero

D. both (a) and (b)

Answer & Explanation

Answer: Option **A**

Explanation:

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17. Which of the following pair has same direction always?

A. force, displacement force, velocity **B.**

C. force, acceleration **D.** force, momentum

Answer & Explanation

Answer: Option **C**

Explanation:

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18. Motorcycle safety helmet extends the time of collision hence decreasing the

A. chance of collision **B.** force acting

C. velocity **D.** impulse

Answer & Explanation

Answer: Option **D**

Explanation:

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19. The collision between two bodies be elastic if bodies are

A. solid and soft **B.** soft and elastic

C. solid and hard **D.** hard and elastic

Answer & Explanation

Answer: Option **C**

Explanation:

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20. During long jump, athlete runs before taking the jump. By doing so he

A. provide him a larger inertia **B.** decreases his inertia

C. decreases his momentum **D.** increases his momentum

Answer & Explanation

Answer: Option **D**

Explanation:

When car takes turn around a curve road, the passengers feel a force acting on them in a direction away from the center of the curve. It is due to

A. centripetal force **B.** gravitational force

C. their inertia **D.** centrifugal force

Answer & Explanation

Answer: Option **C**

Explanation:

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A body is falling freely under gravity. How much distance it falls during an interval of time between 1st and 2nd seconds of its motion, taking g=10?

A. 14 m **B.** 20 m

C. 5 m **D.** 25 m

Answer & Explanation

Answer: Option **A**

Explanation:

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23. What is the shape of velocity, time graph for constant acceleration?

A. straight inclined line. **B.** parabola

C. inclined curve **D.** declined curve

Answer & Explanation

Answer: Option **A**

Explanation:

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When collision between the bodies in a system is inelastic in nature then for system

momentum changes but K.E remain conserve

K.E changes but momentum remain conserve

both momentum and K.E changes

both momentum and K.E remain conserve

Answer & Explanation

Answer: Option **B**

Explanation:

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25. Which shows the correct relation between time of flight T and maximum

height H?

A. H=gT2/8 **B.** H=8T2/g

C. H=8g/T2 **D.** H=gT2

Answer & Explanation

Answer: Option **A**

Explanation:

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The acceleration in the rocket at any instant is proportional to the nth power of the velocity of the expelled gases. Where the value of n must be?

A. -1 **B.** 1

C. 2 **D.** -2

Answer & Explanation

Answer: Option **B**

Explanation:

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27. Taking off rocket can be explained by

A. 1st law of motion **B.** 2nd law of motion

C. Law of conservation of momentum **D.** law of conservation of energy

Answer & Explanation

Answer: Option **C**

Explanation:

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28. Which of the following is not an example of projectile motion.

A. a gas filled ballon bullet fired from gun **B.**

C. a football kicked **D.** a base ball shot

Answer & Explanation

Answer: Option **A**

Explanation:

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What is the angle of projection for which the range and maximum height become equal?

A. tan-1 1/4 **B.** tan-1 4

C. tan-1 1/2 **D.** tan-1 2

Answer & Explanation

Answer: Option **B**

Explanation:

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30. The thrust on the rocket in the absence of gravitational force of attraction is

A. constant **B.** not constant

C. constant if the rate of ejected gases is constant **D.** constant for short range rocket.

Answer & Explanation

Answer: Option **A**

Explanation:

When two bodies move toward each other with constant speeds the distance between them decreases at the rate of 6m / sec. If they move in the same direction the distance between them increases at the rate of 4m/sec. Then their speeds are

A. 5m/s, 1m/s **B.** 3m/s, 3m/s

C. 6m/s, 1m/s **D.** 4m/s, 2m/s

Answer & Explanation

Answer: Option **A**

Explanation:

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32. Distance covered by a freely falling body in 2 seconds will be

A. 4.9 m **B.** 19.6 m

C. 39.2 m **D.** 44.1 m

Answer & Explanation

Answer: Option **B**

Explanation:

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33. The distance covered by a body in time t starting from rest is

A. at2/2 **B.** Vt

C. a2t/2 **D.** at2

Answer & Explanation

Answer: Option **A**

Explanation:

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34. Flight of a rocket in the space is an example of

A. second law of motion **B.** third law of motion

C. first law of motion **D.** law of gravitation

Answer & Explanation

Answer: Option **B**

Explanation:

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35. The trajectory (or path) of a projectile is

A. straight line **B.** parabola

C. hyperbola **D.** circle

Answer & Explanation

Answer: Option **B**

Explanation:

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36. At which angle the range of the projectile is maximum

A. 45? **B.** 60?

C. 30? **D.** none

Answer & Explanation

Answer: Option **A**

Explanation:

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The force beared by a wall on which water strikes normally at a speed of 10m/sec and at a discharge of 0.0001m3/sec is.

A. 1 N **B.** 10 N

C. 100 N **D.** none

Answer & Explanation

Answer: Option **A**

Explanation:

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38. Time rate of change of momentum is equal to

A. force **B.** impulse

C. velocity **D.** both (a) and (c)

Answer & Explanation

Answer: Option **A**

Explanation:

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39. The range of the projectile at 30? and 60? are

A. equal to 45?

B. equal to 90?

C. equal to each other

D. none of the above

Answer & Explanation

Answer: Option **C**

Explanation:

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40. Why Ballistic missile fails in some circumstances of precision.

A. due to their shape

B. due to air resistance

C. due to angle of projection

D. att of these

Answer & Explanation

Answer: Option **B**

1. Coefficient of viscosity of honey is greater than

A. milk

B. water

C. tarcoal

D. water

Answer & Explanation

Answer: Option **D**

Explanation:

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2. The dimensions of coefficient of visocisity are

A. ML-1T-1 **B.** M2L1T1

C. ML1T-1 **D.** M2L-1T-1

Answer & Explanation

Answer: Option **A**

Explanation:

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3. Terminal velocity is

A. uniform **B.** maximum

C. uniform and maximum **D.** neither uniform nor maximum

Answer & Explanation

Answer: Option **C**

Explanation:

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4. When body moves with terminal velocity the accereration in the body become

A. zero **B.** maximum

C. variable **D.** infinite

Answer & Explanation

Answer: Option **A**

Explanation:

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5. Terminal velocity is given by equation

A. Vt = gr2?? **B.** Vt = 2gr2?/9?

C. Vt = gr2?/9? **D.** Vt = 9gr2?/2?

Answer & Explanation

Answer: Option **B**

Explanation:

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6. Terminal velocity of the body is directly proportional to the

A. radius of the body **B.** diameter of the body

size of the body **D.** square of the diameter of the body

Answer &

Explanation Answer:

Option **D Explanation:**

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7. The flow of ideal fluid is always

A. turbulent **B.** streamline

C. irregular **D.** straight line

Answer & Explanation

Answer: Option **B**

Explanation:

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8. Drag force is given by

A. Newtons law **B.** Pascals law

C. Gauss law **D.** Stokes law

Answer & Explanation

Answer: Option **D**

Explanation:

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9. When fluid is incompressible then

velocity of the fluid is constant

flow of the fluid is straight line **B.**

density of the fluid is constant

volume of the fluid is constant

Answer & Explanation

Answer: Option **C**

Explanation:

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10. Irregular flow of fluid is called

A. streamline **B.** turbulent

C. uniform **D.** laminar

Answer & Explanation

Answer: Option **B**

Explanation:

According to equation of continuity A1V1 = A2V2 = constant. The constant is equal to

A. flow rate **B.** volume of fluid

C. mass of fluid **D.** density of fluid

Answer & Explanation

Answer: Option **A**

Explanation:

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12. Equation of continuity is obtained by apply in law of conservation of

A. mass **B.** energy

C. momentum **D.** all

Answer & Explanation

Answer: Option **A**

Explanation:

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13. Velocity of fluid increases where the pressure is

A. low **B.** high

C. constant **D.** changes continuously

Answer & Explanation

Answer: Option **A**

Explanation:

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14. Speed of efflux can be determined by applying

A. Bernoulls theorem **B.** Torricellis theorem

C. venture relation **D.** all

Answer & Explanation

Answer: Option **B**

Explanation:

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15. Blood vessels are

A. rigid **B.** not rigid

C. of glass **D.** of rubber

Answer & Explanation

Answer: Option **B**

Explanation:

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16. Concentration of red cells in blood is about

A. 25% **B.** 40%

C. 50% **D.** 75%

Answer & Explanation

Answer: Option **C**

Explanation:

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17. A man standing near a fast moving train may fall

A. on the train

B. away from the train

C. towards the train

D. on himself

Answer & Explanation

Answer: Option **C**

Explanation:

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For which position maximum blood pressure in the body have the smallest value ?

A. standing straight

B. sitting on chair

C. sitting on ground

D. laying horizontally

Answer & Explanation

Answer: Option **D**

Explanation:

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19. Two fog droplets have radius 2:3 their terminal velocities are

A. 4:06

B. 4:09

C. 2:09 **D.** 4.3

Answer & Explanation

Answer: Option **B**

Explanation:

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20. Burnoullis equation is obtained by applying law of conservation of _

A. mass **B.** energy

C. momentum **D.** fluid

Answer & Explanation

Answer: Option **B**

Explanation:

21. Venturi meter is used to measure

A. fluid pressure **B.** fluid density

C. fluid speed **D.** none

Answer & Explanation

Answer: Option **C**

Explanation:

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22. In cricket when a bowler produce reverse swing the ball will move towards

A. shinning side of the ball **B.** rough side

C. seam of the ball **D.** goes straight

Answer & Explanation

Answer: Option **A**

Explanation:

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23. Stokes law is applicable if body has _____shape

A. rough **B.** square

C. circular **D.** spherical

Answer & Explanation

Answer: Option **D**

Explanation:

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24. One torr is equal to

A. 1.333 Nm-2 **B.** .1333 Nm-2

C. 13.33 Nm-2 **D.** 133.3 Nm2

Answer & Explanation

Answer: Option **D**

Explanation:

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25. Systolic pressure is called

A. low blood pressure **B.** high blood pressure

C. normal blood pressure **D.** abnormal blood pressure

Answer & Explanation

Answer: Option **B**

Explanation:

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26. Instrument used to measure blood pressure is called

A. venturimeter **B.** blood pressure

C. sphgmomanometer **D.** sonometer

Answer & Explanation

Answer: Option **C**

Explanation:

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27. A chimney works works best if air exposed to the chimmey is

A. stationary **B.** moving

C. moving slowly **D.** moving fast

Answer & Explanation

Answer: Option **D**

Explanation:

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28. Which one is venturi relation
? P1 - P2 = 1/2 ?V22 **A.**

B. V2 = 2g (h1-h2)

C. P = 1 /2?V2 = ?gh = constant

D. A1 V1 = A2 V2 = constant

Answer & Explanation

Answer: Option **A**

Explanation:

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The effect of the decrease in pressure with the increase of the speed of fluid in a horizontal pipe is known as

A. Bernoullirt effect

B. Torricelli effect

C. Venturi effect

D. Stokes effect

Answer & Explanation

Answer: Option **C**

Explanation:

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30. Ideal fluid is

A. non-viscous

B. incompressible

C. steady flow

D. possess all properties

Answer & Explanation

Answer: Option **D**

Explanation:

31. Laminar flow usually occurs at speeds.

A. low **B.** high

very high some time high and some time low

Answer & Explanation

Answer: Option **A**

Explanation:

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32. For _____ flow the path of the fluid particles cannot be tracked.

A. laminar **B.** stream line

C. turbulent **D.** both (a) and (b)

Answer & Explanation

Answer: Option **C**

Explanation:

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33. Sphygmomanometers measures blood pressure.

A. statically **B.** dynamically

C. some time static and some time dynamic **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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34. Carburetor of a car is a application of

A. Venturi meter **B.** Bernoulli equation

C. Both (a) and (b) **D.** None

Answer & Explanation

Answer: Option **C**

Explanation:

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35. The blood flow is _____ flow at disystolic pressure

A. laminar **B.** turbulent

C. mixed **D.** none

Answer & Explanation

Answer: Option **A**

Explanation:

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36. The profile of aeroplane wing which lifts it up is called as

A. wing shape **B.** aerofoil profile

C. curved profile **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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37. Bernoullis equation is applicable for

A. laminar flow

B. turbulent flow

C. both laminar and turbulent flow

D. none of these

Answer & Explanation

Answer: Option **C**

Explanation:

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38. The density of human blood is nearly equal to

A. water

B. honey

C. mercury

D. oil (kerosene)

Answer & Explanation

Answer: Option **A**

Explanation:

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39. The speed of the fluid is maximum in the venturimeter at

A. convergent duct

B. divergent duct

C. throat

D. none of these

Answer & Explanation

Answer: Option **C**

Explanation:

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40. The normal blood pressure range for an human body is

A. 120 to 80 torr **B.** 100 to 80 torr

C. 120 to 60 torr **D.** 60 to 140 torr

Answer & Explanation

Answer: Option **D**

Explanation:

1. Optical active crystals rotates the

A. vibrating plane **B.** polarization plane

C. diffraction plane **D.** interference plane

Answer & Explanation

Answer: Option **B**

Explanation:

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2. Which is not optically active?

A. sugar **B.** tartaric acid

C. water **D.** sodium chlorate

Answer & Explanation

Answer: Option **C**

Explanation:

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3. In double slit experiment we observe

A. interference fringes only

B. diffraction fringes only

C. both interference and diffraction fringes

D. polirized frringes

Answer & Explanation

Answer: Option **C**

Explanation:

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4. When light incident normally on thin film the path difference depends upon

A. thickness of the film only

B. nature of the film only

angle of indidence only

all thickness nature and angle of incidence

Answer &

Explanation Answer:

Option **D Explanation:**

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Which one of the following properties of light does not change with the nature of the medium?

A. velocity

B. wavelength

C. amplitude

D. frequency

Answer & Explanation

Answer: Option **D**

Explanation:

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6. Light reaches the earth form sun in nearly

A. 15 minutes **B.** 10 minutes

C. 8 minutes **D.** 8 minutes 30 seconds

Answer & Explanation

Answer: Option **D**

Explanation:

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7. Photoelectric effect was given by

A. Hertz **B.** Fresnel

C. Einstein **D.** Plank

Answer & Explanation

Answer: Option **C**

Explanation:

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---

8. According to Einstein light travels form one place to another in the form of

A. waves **B.** particles

C. photons **D.** it was not his discovery

Answer & Explanation

Answer: Option **C**

Explanation:

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9. Longitudinal waves do not exhibit

A. reflection **B.** refraction

C. diffraction **D.** polarization

Answer & Explanation

Answer: Option **D**

Explanation:

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---

10. Central spot of Newtons rings

A. bright **B.** dark for large wavelength

C. dark **D.** bright for large wavelength

Answer & Explanation

Answer: Option **A**

Explanation:

11. A point source of light placed in a homogeneous medium gives rise to

A. a cylindrical wave front **B.** an elliptical wave front

C. a spherical wave front **D.** a plane wave front

Answer & Explanation

Answer: Option **C**

Explanation:

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The locus of all points in a medium having the same phase of vibration is called

A. crest **B.** trough

C. wavelength **D.** wave front

Answer & Explanation

Answer: Option **D**

Explanation:

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13. Which one of the following is nearly monochromatic light ?

A. light form fluorescent tube light form neon lamp **B.**

C. light form sodium lamp **D.** light form simple lamp

Answer & Explanation

Answer: Option **C**

Explanation:

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14. Two sources of light are coherent if they emit rays of

A. same wavelength

B. same amplitude of vibration

C. same wave length with constant phase difference

D. same amplitude and wavelength

Answer & Explanation

Answer: Option **C**

Explanation:

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When crest of one wave falls over the trough of the other wave this phenomenon is known as

A. polarization

B. constructive interference

C. destructive interference

D. diffraction

Answer & Explanation

Answer: Option **C**

Explanation:

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16. In Youngs double slit experiment the fringe spacing is equal to

A. d?D

B. 2?d/D

C. ?D/d

D. ?d/D

Answer & Explanation

Answer: Option **C**

Explanation:

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17. In Young double slit experiment, if white light is used

A. alternate dark and bright fringes will be seen

B. coloured fringes will be seen

C. no interference fringes will be seen

D. impossible to predict

Answer & Explanation

Answer: Option **B**

Explanation:

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18. The velocity of light was determined accurately by

A. Newton

B. Michelson

C. Huygen

D. Young

Answer & Explanation

Answer: Option **B**

Explanation:

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The condition for constructive interference of two coherent beams is that the path difference should be

A. integral multiple of ?/2

B. integral multiple of ?

C. odd integral multiple of ?/2

D. even integral multiple of ?

Answer & Explanation

Answer: Option **B**

Explanation:

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20. In an interference pattern

bright fringes are wider than dark fringes

dark fringes are wider than bright fringe

both dark and bright fringes are of equal width

central fringes are brighter than the outer fringes

Answer & Explanation

Answer: Option **C**

Explanation:

21. appearance of colour in thin films is due to

A. diffraction

B. dispersion

C. interference

D. polarization

Answer & Explanation

Answer: Option **C**

Explanation:

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22. The blue colour of the sky is due to

A. diffraction

B. reflection

C. polarization

D. scattering

Answer & Explanation

Answer: Option **D**

Explanation:

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23. A light ray traveling form rarer to denser medium suffers a phase change of

A. 60? **B.** 90?

C. 180? **D.** 45?

Answer & Explanation

Answer: Option **C**

Explanation:

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When one mirror of a Michelson Interferometer is moved a distance of 0.5 mm we observe 2000 fringes. What will be wavelength of light used?

A. 5000 nm **B.** 5000A?

C. 500m **D.** 2000um

Answer & Explanation

Answer: Option **B**

Explanation:

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25. Diffraction effect is

A. more for a round edge **B.** less for a round edge

C. more for a sharp edge **D.** less for a sharp edge.

Answer & Explanation

Answer: Option **C**

Explanation:

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26. The wavelengthe of X-rays is of the order of

A. 10A? **B.** 1000 A?

C. 1A? **D.** 100 A?

Answer & Explanation

Answer: Option **C**

Explanation:

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Wavelength of X-rays falling at glancing angle of 30? on a crystal with atmic spacing 2 x 10-10 for the fist order diffraction is

A. 4 x 10-10 m **B.** 2 x 10-10 m

C. 0.02x10-10m **D.** 20x10-10m

Answer & Explanation

Answer: Option **B**

Explanation:

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28. A diffraction grating has 500 lines per mm. Its slit spacing or grating element

will be equal to

A. 500 mm **B.** 5 x 10-3 mm

C. 2 x 10-5 mm **D.** 2 x 10-3 mm

Answer & Explanation

Answer: Option **D**

Explanation:

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In a plane polarized light

A. vibration in all direction vibration in two mutually perpendicular directions

vibration take place in a direction perpendicular to the direction of propagation of light no vibration at all

Answer & Explanation

Answer: Option **C**

Explanation:

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30. Light on passing through a Polaroid is

A. plane polarized **B.** un-polarized

C. circularly polarized **D.** elliptically polarized

Answer & Explanation

Answer: Option **A**

Explanation:

31. Which one of the following cannot be polarized?

A. radio waves

B. ultraviolot rays

C. X-rays

D. sound waves

Answer & Explanation

Answer: Option **D**

Explanation:

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Diffarction fringes are

A. equally spaced

distance between them increases

distance between then decreases

they are adjacent with no space in between

Answer & Explanation

Answer: Option **C**

Explanation:

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33. In monochromatic red light a blue book will probably appear to be

A. black

B. purple

C. green

D. no scientific reasoning

available

Answer & Explanation

Answer: Option **A**

Explanation:

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34. A thing that emits its own light is

A. luminous

B. non-luminous

C. incandescent

D. bright

Answer & Explanation

Answer: Option **A**

Explanation:

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35. In double slit experiment if one of the two slit is covered then

A. no interference fringes are observed

B. no diffraction fringes are observed

C. no fringes observed

D. interference pattern not disturbed

Answer & Explanation

Answer: Option **A**

Explanation:

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36. gives the definition of metre in terms of wavelength of red cadmium light

A. Newton **B.** Einstein

C. Michelson **D.** Galileo

Answer & Explanation

Answer: Option **C**

Explanation:

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In Michelson interferometer to switch the fringe from bright to dark the mirror should be displaced through

A. ? / 2 **B.** ?/3

C. ?/6 **D.** ?/4

Answer & Explanation

Answer: Option **D**

Explanation:

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38. In the shadow of a ball the central portion appears bright that happens due to

A. Interference **B.** Diffraction

C. Polarization **D.** Refraction

Answer & Explanation

Answer: Option **B**

Explanation:

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39. Which experiment shows that wavelength of light is smaller than that of sound

A. Diffraction **B.** Polarization

C. Interference **D.** Reflection

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40. Crystals of a material can behave as

A. Convex lens **B.** Interferometer

C. Diffraction grating **D.** Concave

Answer & Explanation

Answer: Option **C**

Explanation:

1. When we rub a glass rod with a silk cloth then

glass rod acquires negative charge while silk acquires positive charge

glass rod acquires positive charge while silk acquires negative charges

both glass rod and silk acquire negative charge

both glass rod and silk acquire positive charge

Answer & Explanation

Answer: Option **B**

Explanation:

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2. If the distance between the two point charges become half then force between

them becomes

A. double **B.** half

C. four times **D.** remains same

Answer & Explanation

Answer: Option **C**

Explanation:

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3. The minimum charge on any object cannot be less than

A. 1.6 x 10-19C **B.** 3.2 x 10-19C

C. 9.1 x 109C **D.** no definite value exist

Answer & Explanation

Answer: Option **A**

Explanation:

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Electric charge of 100 ?C is 13cm apart from another charge 16.9?C electric force between them is

A. 9x107N **B.** 900N

C. 9x105N **D.** 9x106N

Answer & Explanation

Answer: Option **B**

Explanation:

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Electric force between two point charges in air or vacuum is F. If we replace air or vacuum by an insulator (dielectric) of relative permitivity Cr the force between the charges will

A. decrease

B. increase

C. remain constant

D. depends upon composition of dielectric

Answer & Explanation

Answer: Option **A**

Explanation:

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Two charges are placed at a certain distance. If the magnitude of each charge is doubled the force will become

A. 1/4th of its original value

B. 1/8th of its original value

C. 4 times of its original value

D. 8 times of its original value

Answer & Explanation

Answer: Option **C**

Explanation:

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7. The force per unit charge is know as

A. electric flux

B. electric intensity

C. electric potential

D. all of above are same

Answer & Explanation

Answer: Option **B**

Explanation:

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An electric field can deflect

A. neutrons ?-rays

both glass rod and silk acquire negative charge none

Answer & Explanation

Answer: Option **D**

Explanation:

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9. An electric charge at rest produces

A. only a magnetic field **B.** only an electric field

C. neither electric field nor magnetic field **D.** both electric and magnetic fields

Answer & Explanation

Answer: Option **B**

Explanation:

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10. Tick the only wrong statement.

A. similar charges repel each **B.** dissimilar charges attract each

other

other

repulsion is the sure test of electrification

an electrically neutral body is repelled both positively and negatively charged bodies

Answer & Explanation

Answer: Option **D**

Explanation:

Potential difference is the work done in moving unit positive charge form one point to another

in the direction of electric intensity

against electric intensity

in any direction

in the direction of electric flux

D.

Answer & Explanation

Answer: Option **B**

Explanation:

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22. Equipotential planes are

A. parallel to one another

B. non parallel to one another

C. intersecting

D. circular

Answer & Explanation

Answer: Option **A**

Explanation:

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23. The value of the capacitance depends upon the

A. voltage applied **B.** thickness of the capacitor plates

C. geometry of the capacitor **D.** dinsity of the capacitor plates

Answer & Explanation

Answer: Option **C**

Explanation:

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24. A 25eV electron has a speed of

A. 2 x 106m/sec **B.** 3 x 106m/sec

C. 5 x 106m/sec **D.** 4 x 106m/sec

Answer & Explanation

Answer: Option **B**

Explanation:

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A 5 ?F capacitor has a potential difference across its plates of 200 volts. The charge on the capacitor is

A. 2.5 x 10-8 C **B.** 10-5 C

C. 103 C **D.** 4 x 103 C

Answer & Explanation

Answer: Option **B**

Explanation:

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capacitor is to have an energy content of 20J it must be placed across a potential difference of

A. 4 volts **B.** 9 volts

C. 2 volts **D.** 1 vol

Answer & Explanation

Answer: Option **C**

Explanation:

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27. Equivalent capacitance is greater than individual capacitances in

A. series combination **B.** parallel combination

C. both series and parallel combinations **D.** none of above

Answer & Explanation

Answer: Option **B**

Explanation:

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Two oppositely charged balls A and B attract third conducting ball C when placed near them turn by turn. Then ball C must be

A. positively charged

B. electrically neutral

C. negatively charged

D. positively and negatively charged

Answer & Explanation

Answer: Option **B**

Explanation:

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29. The number of electrons in one coulomb charge is equal to

A. 6.2 x 1018

B. 1.6 x 1019

C. 6.2 x 1021

D. 1.6 x 10-27

Answer & Explanation

Answer: Option **A**

Explanation:

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30. In a non-uniform electric field a polar molecule will experience

A. Net torque

B. Net force

C. both series and parallel combinations

D. zero

Answer & Explanation

Answer: Option **C**

Explanation:

31. SI unit of permitivity of free space is

A. Nm2C2 **B.** N-1mC-2

C. NmC-1 **D.** N-1m-2C2

Answer & Explanation

Answer: Option **D**

Explanation:

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32. Value of ?r for various dielectrics is always

A. less than unity **B.** equal to unit

C. larger than unit **D.** no hard and fast rule

Answer & Explanation

Answer: Option **C**

Explanation:

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33. Electric intensity at infinite distance from the point charge is

A. zero **B.** infinite

C. positive **D.** negative

Answer & Explanation

Answer: Option **A**

Explanation:

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34. Which one of the following can be taken as the measure of electric intensity ?

A. F/A ?/A **B.**

C. ???/A **D.** q/??A

Answer & Explanation

Answer: Option **B**

Explanation:

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35. Electric flux due to a point charge +q is

A. 1/4II?? . q/r **B.** q/??

C. 1/4II?? . q/r2 **D.** 4II??

Answer & Explanation

Answer: Option **B**

Explanation:

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36. N/C =

A. V/A **B.** J/V

C. V/m **D.** A/m

Answer & Explanation

Answer: Option **C**

Explanation:

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A charge of 0.10C accelerated through a potential difference of 1000V acquires kinetic energy

A. 200J **B.** 100J

C. 1000J **D.** 100 eV

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A capacitor is a perfect insulator for

A. direct current alternating current

C. both for the direct and alternating current none of above

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Three capacitors C1 C2 and C3 are connected in parallel as in the Fig. The equivalent capacitance will be

A. 8?F **B.** 0.8?F

C. 1?F **D.** 16?F

Answer & Explanation

Answer: Option **A**

Explanation:

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40. In a charged capacitor the energy resides in

A. magnetic hield **B.** electric field

C. nuclear field **D.** gravitational field

Answer & Explanation

Answer: Option **B**

Explanation:

For what value of ? the electric flux has average value of those of extreme values ?

A. 60?

B. 45?

C. 90?

D. 0?

Answer & Explanation

Answer: Option **A**

Explanation:

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Electric field due to positive charged plate is E = ?/2??. If oppositely charged plate of same amount is placed parallel to it, then resultant field contains amount of energy

A. Q/?oA

B. Q/e

C. QV2

D. Q2/C

Answer & Explanation

Answer: Option **D**

Explanation:

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Work done in moving a point charge from one point to another point of equipotential surface is

A. ?W = 1?V

B. ?W = F?r

C. zero **D.** W = 1/4????V

Answer & Explanation

Answer: Option **C**

Explanation:

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44. Selenium becomes a conductor in light so it behaves like

A. Semiconductor **B.** Photodiode

C. Light emitting diode **D.** Capacitor

Answer & Explanation

Answer: Option **B**

Explanation:

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45. Photocopier and inject printer are dealt in

A. Electrostatics **B.** Charges in motion

C. Capacitors **D.** Electric fields

Answer & Explanation

Answer: Option **A**

Explanation:

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46. If a charged rod is brought closer to a gas filled balloon then

A. Radius decreases **B.** Balloon bursts

C. Radius increase **D.** Balloon squeezes

Answer & Explanation

Answer: Option **C**

Explanation:

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47. If metallic conductor is charged negatively then its weight

A. Remains same First increases then decreases **B.**

C. Decreases then increases **D.** Increases for a while

Answer & Explanation

Answer: Option **D**

Explanation:

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48. If mica sheet is placed between the plates of a capacitor the capacity

A. increases **B.** decreases

C. increases then decreases **D.** decreases then increases

Answer & Explanation

Answer: Option **A**

Explanation:

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49. If two charges are increased by two times then force

A. Decreases 9 times **B.** Increases 9 times

C. Increases 4 times **D.** Decreases 4 times

Answer & Explanation

Answer: Option **C**

Explanation:

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If an electrons is allowed to move along the field in a non uniform electric field then it will follow

A. Spiral path **B.** Straight line

C. Curved path **D.** Circular path

Answer & Explanation

Answer: Option **B**

Explanation:

1. The practical illustration of the phenomenon of mutual induction is

A. A.C generator **B.** D.C dynamo

C. induction coil **D.** transformer

Answer & Explanation

Answer: Option **D**

Explanation:

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2. Weber is the unit of

A. Magnetic field intensity **B.** magnetic induction

C. magnetic flux **D.** self-inductance

Answer & Explanation

Answer: Option **C**

Explanation:

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3. Current produced by moving the loop of wire across a magnetic field is called

A. A.C current **B.** D.C current

C. induced current **D.** mean square current

Answer & Explanation

Answer: Option **C**

Explanation:

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4. emf induced in a circuit according to Faradays law depends on the

A. maximum magnetic flux **B.** rate of change of magnetic flux

C. change in magnetic flux **D.** initial magnetic flux

Answer & Explanation

Answer: Option **B**

Explanation:

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5. cmf generated by A.C dynamo depends upon

A. number of turns in the coil **B.** magnetic field strength

C. frequency of rotation **D.** all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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An alternating current or voltage

A. fluctuates off and on varies in magnitude alone

changes its direction again and again changes its magnitude continuously and reverses its direction of flow after regularly recurring intervals.

Answer & Explanation

Answer: Option **D**

Explanation:

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7. A dynamo converts

A. mechanical energy into electrical energy **B.** electrical energy into mechanical energy

C. magnetic energy into mechanical energy **D.** magnetic energy into electrical energy

Answer & Explanation

Answer: Option **A**

Explanation:

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8. Which one of the following functions like a motor?

A. galvanometer **B.** ammeter

C. voltmeter **D.** all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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9. A.C cannot be used for

A. producing heat **B.** producing light

C. magnetizing and electroplating **D.** all the above

Answer & Explanation

Answer: Option **C**

Explanation:

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Which of the following works on torque on the current carrying conductor placed in magnetic field.

A. galvanometer **B.** ammeter

C. voltmeter **D.** all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

11. Self inductance of a coil depends upon

current flowing **B.** number of turns per unit length

C. voltage produce **D.** all

Answer & Explanation

Answer: Option **D**

Explanation:

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12. If the coil is wound on an iron core the flux through it will

A. decrease **B.** become zero

C. remain the same **D.** increase

Answer & Explanation

Answer: Option **D**

Explanation:

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13. Energy stored in a magnetic field is given by

A. LI2 **B.** L2I/2

C. LI2/2 **D.** IL2

Answer & Explanation

Answer: Option **C**

Explanation:

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14. Inductors acts as a short circuit for

A. AC **B.** DC

C. Both (a) and (b) **D.** none of these

Answer & Explanation

Answer: Option **B**

Explanation:

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15. For electroplating we use

A. A D.C source **B.** an A.C source

C. any source **D.** all of the above

Answer & Explanation

Answer: Option **A**

Explanation:

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Which of the following uses electric energy and does not convert it into any other form?

A. transformer **B.** motor

C. D.C generator **D.** A.C generator

Answer & Explanation

Answer: Option **A**

Explanation:

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The only difference between construction of D.C generator and A.C generator is that of

A. carbon brushes **B.** coil

C. commutator **D.** magnetic field

Answer & Explanation

Answer: Option **C**

Explanation:

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A.C and D.C have the same

A. effect in charging a capacitor effect in charging a battery

effect while passing through an inductance heating effect through a resistance

Answer & Explanation

Answer: Option **D**

Explanation:

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If the secondary coil has Ns turns and the primary Np turns the relation between secondary and primary voltages is given by

A. Vs/Vp = Np/Ns

B. Vs/Vp = Ns/Np

C. Vp/Vs = Ns/Np

D. Vp/Vs = Np/Ns

Answer & Explanation

Answer: Option **B**

Explanation:

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20. Power loss in actual transformer is due to

A. Small output

B. Eddy currents and magnetic hysterias

C. Soft iron core

D. Back emf

Answer & Explanation

Answer: Option **B**

Explanation:

A metal rod of 25 cm length is moving at a speed of 0.5/sec in direction perpendicular to 0.25T magnetic field. Emf produced in the rod is

A. 0 volt

B. 3.125 volt

C. 31.25 volt

D. 0.03125 volt

Answer & Explanation

Answer: Option **D**

Explanation:

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22. The emf induced in a coil by a changing magnetic flux may have unit as

A. ms-1A **B.** ms-2A-1

C. kgms2A-1 **D.** kgm2s-1A-1

Answer & Explanation

Answer: Option **D**

Explanation:

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A coil of wire is arranged with its plan perpendicular to a uniform magnetic field o flux density B. when the radius of the coil increases from r1 to r2 in time ?t then what is the emf induced in the coil?

A. ?B/r22-r12/?t **B.** ?B(r2-r1)2/?t

C. ?B(r22-r12)/?t **D.** ?B(r22+r12)/?t

Answer & Explanation

Answer: Option **C**

Explanation:

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The emf induced in a conductor of unit length moving with unit velocity at right angles to a magnetic field is equal to

A. Magnetic flux density **B.** Torque

C. Mutual induction **D.** Motional emf

Answer & Explanation

Answer: Option **A**

Explanation:

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The self-inductance of a solenoid is increased when a soft iron core is inserted into it. This is because the soft iron core

Decreases the resistance of the solenoid

Reduces the effect of eddy current

Improves the flux linkage between the turns of the coil

Increases the mutual inductance between the solenoid and the core

Answer & Explanation

Answer: Option **C**

Explanation:

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A small coil lies inside a large coil. The two coils are horizontal concentric and carry currents in opposite directions. The large coil will experience

A torque about horizontal axis

A torque about vertical axis

C. An upward force along the axis

No resultant force

Answer & Explanation

Answer: Option **D**

Explanation:

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An aeroplane of wingspan 10m flies from the equator towards the North Pole. The wings are perpendicular to the vertical component of the earths magnetic field (B = 4x10-5T). At maximum speed an emf of 96mV is induced across the wing tips. The maximum speed of the aeroplane is

A. 150msec-1 **B.** 384msec-1

C. 38.4msec-1 **D.** 200msec-1

Answer & Explanation

Answer: Option **B**

Explanation:

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28. A.C can not be used for

A. producing heat **B.** producing light

C. Magnetizing iron **D.** Producing magnetic field

Answer & Explanation

Answer: Option **C**

Explanation:

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29. Non inductive resistances are used in decreasing

A. Mutual inductance **B.** Self inductance

C. Magnetic fields **D.** Heating effect

Answer & Explanation

Answer: Option **B**

Explanation:

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30. Magnetic compass needle will be deflecting if it is kept near

A. Static charge **B.** Soft iron

C. Semi-conductor **D.** Accelerating charge

Answer & Explanation

Answer: Option **D**

Explanation:

The alternating current has frequency of 106 Hz in such a way that time period for completion of cycle is

A. 1?s **B.** 1.5?s

C. 106sec **D.** 1sec

Answer & Explanation

Answer: Option **A**

Explanation:

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32. Long distance transmission is easy for

A. D.C voltage **B.** A.C voltage

C. Half A.C voltage **D.** Half D.C voltage

Answer & Explanation

Answer: Option **B**

Explanation:

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33. Which one of the following devices does not function like an electric motor?

A. Galvanometer Ammeter **B.**

C. Voltmeter **D.** Transformer

Answer & Explanation

Answer: Option **D**

Explanation:

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The out put voltage of a transformer is 3 times the input voltage then turns ratio will be

A. 3-Jan **B.** 3

C. 1 **D.** 6

Answer & Explanation

Answer: Option **B**

Explanation:

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35. For long distance transmission the transformer used is

A. Step down

B. Input voltage and output voltage remain same

C. Step up

D. Amplifier is used

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36. Self inductance of a long solenoid is

A. ??n2?A

B. ??n2A/?

C. ??N2?A

D. BA

Answer & Explanation

Answer: Option **A**

Explanation:

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An electric current induced within the body of a conductor when that conductor either moves through a non uniform magnetic field or in a region where there is a change in magnetic flux is called

A. Induced current

B. Eddy current

C. Back emf

D. None of the above

Answer & Explanation

Answer: Option **B**

Explanation:

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38. Lagging of changes in the magnetization of a substance behind changes in the

magnetic field as the magnetic field is varied is known as magnetic

A. Retaintivity **B.** Permeability

C. Flux **D.** Hysteresis

Answer & Explanation

Answer: Option **D**

Explanation:

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39. Transformer works on the principle of

A. Lenzs law **B.** Faradays law

C. Mutual induction **D.** Law of conservation of power

Answer & Explanation

Answer: Option **C**

Explanation:

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40. When the motor is at its maximum speed then back emf will be

A. Maximum **B.** Zero

C. Intermediate values **D.** No back emf

Answer & Explanation

Answer: Option **A**

Explanation:

1. Electrons present in p-type material due to thermal pair generation are

A. majority carriers **B.** minority carriers

C. dual carriers **D.** blockers

Answer & Explanation

Answer: Option **B**

Explanation:

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2. Semi-conductors with donor atoms and free electrons belong to the type

A. n **B.** p

C. mix **D.** any of above

Answer & Explanation

Answer: Option **A**

Explanation:

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3. Semi-conductor germanium and silicon are

A. pentavalent **B.** trivalent

C. divalent **D.** tetravalent

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4. Acceptor and donor impurities donate

A. n-carriers only **B.** p-carriers only

C. p-carriers and n-carriers **D.** n-carriers and p-carriers

respectively respectively

Answer & Explanation

Answer: Option **C**

Explanation:

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5. p-n junction when reversed biased acts as a

A. capacitor **B.** inductor

C. on switch **D.** off switch

Answer & Explanation

Answer: Option **D**

Explanation:

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6. In p-n-p transistor the collector current is

A. equal to emitter current **B.** slightly less than emitter current

C. greater than emitter current **D.** any of above

Answer & Explanation

Answer: Option **B**

Explanation:

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7. In n-p-n transistor, p works as

A. collector

B. emitter

C. base

D. any of above

Answer & Explanation

Answer: Option **C**

Explanation:

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The simplest type of rectification known as half wave rectification is obtained by

using a transistor

suppressing the harmonics in A.C voltage

suppressing half wave of A.C supply by using diode

using a Coolidge tube

Answer & Explanation

Answer: Option **C**

Explanation:

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9. Identify the correct statement about minority carriers

holes in n-type and free electrons in p-type

holes in n-type and p-type

free electrons in n-type and holes in p-type

D. free electrons in n-type and p-type

Answer & Explanation

Answer: Option **A**

Explanation:

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10. Depletion region of a junction is formed

during the manufacturing

A. **B.** under forward bias process

C. under reverse bias **D.** when temperature varies

Answer & Explanation

Answer: Option **A**

Explanation:

The velocity of an oscillating charge as it moves to and fro along a wire is always

A. constant **B.** zero

C. changing **D.** infinite

Answer & Explanation

Answer: Option **C**

Explanation:

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12. Which one of following band is completely filled in case of conductors?

A. Conduction band Fermi band **B.**

C. Valence band **D.** Forbidden band

Answer & Explanation

Answer: Option **A**

Explanation:

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13. Which one of the following has the greatest energy gap?

A. insulator conductor **B.**

C. semi conductor **D.** any of above

Answer & Explanation

Answer: Option **A**

Explanation:

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14. The value of resistivity for insulator is of the order of

A. 105 ohm metre **B.** 106 ohm metre

C. 107 ohm metre **D.** 108 ohm metre

Answer & Explanation

Answer: Option **D**

Explanation:

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15. Thermions are

A. protons **B.** positrons

C. electrons **D.** photons

Answer & Explanation

Answer: Option **C**

Explanation:

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16. Hole is equivalent to

A. a negative charge **B.** a positive charge

C. a neutral particle **D.** an electron

Answer & Explanation

Answer: Option **B**

Explanation:

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17. Which one of the following is not a donor impurity?

A. antimony phosphorus **B.**

C. aluminium **D.** arsenic

Answer & Explanation

Answer: Option **C**

Explanation:

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18. Forward current through a semi conductor diode circuit is due to

A. minority carriers **B.** majority carriers

C. holes **D.** electrons

Answer & Explanation

Answer: Option **B**

Explanation:

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19. In the transistor schematic symbol, the arrow

A. is located on the emitter **B.** is located on the base

C. is locate on the collector **D.** points form north to south

Answer & Explanation

Answer: Option **A**

Explanation:

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The symbol of n-p-n transistor is

Answer & Explanation

Answer: Option **D**

Explanation:

In full wave rectification the output D.C. voltage across the load is obtained for

A. The positive half cycle of input A.C. **B.** The negative half cycle of input A.C.

C. The complete cycle of input **D.** All of the above.

A.C.

Answer & Explanation

Answer: Option **C**

Explanation:

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22. The semiconductor diode can be used as a rectifier because _

It has low resistance to the current flow when forward biased & high resistance when reverse biased.

It has low resistance to the current flow when forward biased.

It has high resistance to the current flow when reverse biased

Its conductivity increases with rise of temperature.

Answer & Explanation

Answer: Option **A**

Explanation:

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In half-wave rectification the output D.C. voltages is obtained across the load for

A. The negative half cycle of A.C.

B. The positive half cycle of A.C.

C. The positive and negative half cycles

D. Either positive or negative half of A.C.

Answer & Explanation

Answer: Option **B**

Explanation:

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24. The device or circuit used for conversion of A.C. into D.C. is called

A. An amplifier. **B.** A rectifier

C. Filtering circuit **D.** Converter.

Answer & Explanation

Answer: Option **B**

Explanation:

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25. The device used for conversion of D.C. to A.C. is called

A. Converter **B.** A rectifier

C. Inverter **D.** Oscillator

Answer & Explanation

Answer: Option **D**

Explanation:

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The especially designed semiconductor diodes used as indicator lamps in electronic circuits are

A. The switch **B.** The light emitting diode

C. The photo diodes **D.** Solar cells.

Answer & Explanation

Answer: Option **B**

Explanation:

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The specially designed semi-conductor diodes used as fast counters in electronic circuits are

A. The light emitting diodes **B.** Photo diodes

C. Photo voltaic cell **D.** Solar cells.

Answer & Explanation

Answer: Option **B**

Explanation:

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28. The alternating voltage is an example of

A. A digital waveform **B.** An analogue waveform

C. Discrete waveform **D.** None at all

Answer & Explanation

Answer: Option **B**

Explanation:

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29. The rectangular voltage is an example of

A. An analogue waveform **B.** Continuous wave form

C. Electronic waveform **D.** A digital waveform

Answer & Explanation

Answer: Option **D**

Explanation:

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30. The operational amplifier is

A. A high gain amplifier **B.** A high-power amplifier

C. A high resistance amplifier **D.** A low resistance amplifier

Answer & Explanation

Answer: Option **A**

Explanation:

31. In a half-wave rectifier the r.m.s. value of the A.C. component of the wave is

A. Equal to D.C. value **B.** More than D.C. value

C. Less than D.C. value **D.** Zero

Answer & Explanation

Answer: Option **B**

Explanation:

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To obtain an n-type semiconductor germanium crystal it must be doped with foreign atoms whose valency is

A. 2 **B.** 3

C. 4 **D.** 5

Answer & Explanation

Answer: Option **D**

Explanation:

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To obtain a p-type semi-conductor Si Crystal must be doped with foreign atoms whose valency is

A. 2 **B.** 3

C. 4 **D.** 5

Answer & Explanation

Answer: Option **B**

Explanation:

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34. The operation of a transistor requires That the emitter be heated

A. **B.** That the base be heated

C. That the collector be heated **D.** None of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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35. In forward bias the width of potential barrier

A. Increases **B.** Decreases

C. Remains same **D.** No effect

Answer & Explanation

Answer: Option **B**

Explanation:

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36. The working of transistor as amplifier is similar to

A. Step up transformer **B.** Step down transformer

C. Three diodes in common **D.** Triode vacuum tube

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37. The electronic circuits which implement the various logic operations are called

A. Logic gates **B.** Boolean algebra

C. Amplifier gain **D.** Logic functions

Answer & Explanation

Answer: Option **A**

Explanation:

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An OP-AMP comparator is a circuit that compares the signal voltage on one of its inputs with a _

A. Non-inverting voltage at output

B. Reference voltage on the other

C. Virtual input

D. Output

Answer & Explanation

Answer: Option **B**

Explanation:

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39. An OP-AMPs can amplify

A. D.C.

B. A.C.

C. Both A.C. & D.C.

D. None of the above

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40. Non-inverting amplifier circuits have

A. A very high input impedance

B. A very low input impedance

C. A low output impedance

D. None of the above

Answer & Explanation

Answer: Option **A**

Explanation:

1. In nucleus of uranium the number of neutrons will be

A. 92

B. 235

C. 143

D. different for different isotopes

Answer & Explanation

Answer: Option **D**

Explanation:

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During fusion of hydrogen into helium

A. energy is absorbed

energy is released

mass is increased due to energy absorption

mass is reduced due to energy released

Answer & Explanation

Answer: Option **B**

Explanation:

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3. One amu is equal to

A. 1.66 x 10-27kg

B. 166 x 10-15ng

C. 166 x 10-20?g

D. all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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4. According to which one of following law the density of atom is uniform?

A. J.J.Thomson model

B. Rutherfords model

Bohrs model

all of above laws contradict the statement

Answer & Explanation

Answer: Option **A**

Explanation:

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5. For chain reaction to build up the size of the radioactive target should be

A. greater than the critical size

B. less than the critical size

equal to the critical size

all of above can build up a change reaction

Answer &

Explanation Answer:

Option **A Explanation:**

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6. Antimatter consists of

A. antiproton

B. antineutron

C. positron

D. all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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7. Neutron and proton are commonly known as

A. nucleon **B.** meson

C. boson **D.** quartz

Answer & Explanation

Answer: Option **A**

Explanation:

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Half life of radium is 1590 years. In how many years shall the earth loss all its radium due to radioactive decay?

A. 1590x106 years **B.** 1590x1012 years

C. 1590x1024 years **D.** never

Answer & Explanation

Answer: Option **D**

Explanation:

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9. Which one of the following radiation possesses maximum penetrating power?

A. ?-rays **B.** ?-rays

C. ?-rays **D.** all have equal penetrating power

Answer & Explanation

Answer: Option **C**

Explanation:

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Electrons

A. can exist inside the nucleus

cannot exist inside the nucleus

can exist both inside and outside the nucleus

do not know

Answer & Explanation

Answer: Option **B**

Explanation:

11. Radioactivity is a _____ (A) Spontaneous activity (B) Chemical property

A. A & B

B. B & C

C. C & A

D. A B & C

Answer & Explanation

Answer: Option **C**

Explanation:

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12. Energy liberated when one atom of U-235 undergoes fission reaction is

A. 200MeV

B. 40MeV

C. 30MeV

D. 20MeV

Answer & Explanation

Answer: Option **A**

Explanation:

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13. Transuranic elements have atomic number

A. greater than 72

B. greater than 82

C. greater than 92

D. greater than 102

Answer & Explanation

Answer: Option **C**

Explanation:

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14. Nuclear forces exist between

A. proton-proton

B. proton-neutron

C. neutron-neutron

D. all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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Answer & Explanation

Mass defect per nucleon is

A. binding energy of nucleus

average energy of nucleus

packing fraction

all of above are one and same thing

Answer: Option **B**

Explanation:

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Tick the correct statement

moderators slow down the neutrons

moderators bring the neutrons to rest

moderators absorb the neutrons

moderators reflect the neutrons

Answer & Explanation

Answer: Option **A**

Explanation:

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17. The bombardment of nitrogen with ?-particles will produce

A. neutron

B. Proton

C. electron

D. positron

Answer & Explanation

Answer: Option **B**

Explanation:

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18. Diameter of an atom is approximately

A. 10-12m

B. 10-11m

C. 10-10m **D.** 10-14m

Answer & Explanation

Answer: Option **C**

Explanation:

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19. Radioactive decay obeys which one of the following law?

A. N=N?e-?t **B.** N=N?e?t

C. N=N?e-?t/2 **D.** N?=N(1+e?t)

Answer & Explanation

Answer: Option **A**

Explanation:

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20. Average energy required to remove one nucleon from the nucleus is called

A. binding energy per nucleon **B.** energy of decay

C. destruction energy **D.** all of above

Answer & Explanation

Answer: Option **A**

Explanation:

21. Fission chain reaction in a nuclear reactor can be controlled by introducing

A. iron rods **B.** graphite rods

C. cadmium rods **D.** platinum rods

Answer & Explanation

Answer: Option **C**

Explanation:

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22. Which one of the following radiations possesses maximum velocity?

A. ?-rays ?-rays **B.**

C. ?-rays **D.** all of above have same speed

Answer & Explanation

Answer: Option **C**

Explanation:

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23. Charge on an electron was determine by

A. Ampere **B.** Maxwell

C. Millikan **D.** Thomson

Answer & Explanation

Answer: Option **C**

Explanation:

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24. Charge on neutron is
plus 1.6 x 10-19C **A.**

B. zero

C. minus 1.6 x 10-19C

D. no definite charge

Answer & Explanation

Answer: Option **B**

Explanation:

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25. A particle having the mass of an electron and the charge of a proton is called a

A. antiproton

B. positron

C. gamma rays

D. photon

Answer & Explanation

Answer: Option **B**

Explanation:

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26. Mass of neutron is

A. 1.67 x 10-31 kg

B. 1.67 x 10-27 kg

C. 9.1 x 10-31 kg

D. 1.67 x 10-19 kg

Answer & Explanation

Answer: Option **B**

Explanation:

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27. Nuclei having the same mass number but different atomic number are

A. Isotopes **B.** Isobars

C. Isotones **D.** Isomers

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28. A mass spectrograph (spectrometer) sorts out

A. molecules **B.** ions

C. elements **D.** isotopes

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Sum of the masses of constituent nucleons as compared to the mass of the resultant nucleus is

A. smaller **B.** greater than 82

C. same **D.** some times smaller some times greater

Answer & Explanation

Answer: Option **B**

Explanation:

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An ?-particle is emitted from 88Ra226. What is the mass and atomic number of the daughter nucleus?

A. 224 - 84 **B.** 220 - 80

C. 222 - 86 **D.** 226 - 87

Answer & Explanation

Answer: Option **C**

Explanation:

The unit of radioactivity curie is equal to

A. 3.74 x 109 disintegration per sec

B. 3.70 x 1010 disintegration per sec

C. 3.55 x 1010 disintegration per sec

D. 3.60 x 1010 disintegration per sec

Answer & Explanation

Answer: Option **B**

Explanation:

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32. During fission process a large amount of

A. heat energy is released

B. nuclear energy is released

C. chemical energy is released

D. light energy is released

Answer & Explanation

Answer: Option **B**

Explanation:

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33. In liquid metal fast breeder reactor the type of uranium used is

A. 92U235

B. 92U238

C. 92U234

D. 92U239

Answer & Explanation

Answer: Option **B**

Explanation:

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34. Radioactive materials can be identified by measuring their

A. hardness **B.** density

C. mass **D.** half life

Answer & Explanation

Answer: Option **D**

Explanation:

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If one or more of the neutrons emitted during fission cab be used to build up further fission then the reaction is self sustained and is known as

A. fission reaction **B.** fusion reaction

C. chain reaction **D.** chemical reaction

Answer & Explanation

Answer: Option **C**

Explanation:

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36. Pair production takes place in the vicinity of a heavy nucleus so that

A. net energy is conserved **B.** net charge is conserved

C. net momentum is conserved **D.** all of the above

Answer & Explanation

Answer: Option **D**

Explanation:

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37. During an encounter with an atom ?-particle knocks out

A. protons **B.** electrons

C. neutrons **D.** nothing

Answer & Explanation

Answer: Option **B**

Explanation:

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38. The path of ?-particle is

A. rectilinear **B.** curved

C. zig-zag or erratic **D.** elliptical

Answer & Explanation

Answer: Option **C**

Explanation:

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Which of the following radiations are suitable for the treatment of an infection in the interior of the body ?

A. ?-rays **B.** ?-rays

C. ?-rays **D.** X-rays

Answer & Explanation

Answer: Option **C**

Explanation:

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40. Various types of cancer are treated by

A. cobalt-60 **B.** strontium-90

C. carbon-14 **D.** nickel-63

Answer & Explanation

Answer: Option **A**

Explanation:

Sterilization of surgical instruments medical supplies and bandages can be done by exposing them to a beam of

?-rays ?-rays

?-rays b and c have equal antiseptic properties

Answer & Explanation

Answer: Option **C**

Explanation:

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42. Charge on ?-particles is

A. plus one **B.** plus two

C. minus two **D.** minus one

Answer & Explanation

Answer: Option **B**

Explanation:

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43. ?-particle ionizes an atom

A. through direct collision **B.** through electrostatic attraction

C. through electrostatic repulsion **D.** all of above

Answer & Explanation

Answer: Option **C**

Explanation:

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44. T.V sets and microwave ovens emits

A. X-rays **B.** ?-rays

C. ?-rays **D.** ?-rays

Answer & Explanation

Answer: Option **A**

Explanation:

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45. A ?-particle in a single encounter

loses a small fraction of its energy

losses most of its energy

loses no energy at all

loses all of its energy

Answer & Explanation

Answer: Option **B**

Explanation:

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46. Strontium-90 is used as

A. ?-particle source

B. ?-particle source

C. ?-rays source

D. neutron source

Answer & Explanation

Answer: Option **A**

Explanation:

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47. The penetration power of ?-particle as compared to ?-particle is

A. 10 times more

B. 100 times more

C. 100 times less

D. 10 times less

Answer & Explanation

Answer: Option **B**

Explanation:

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48. Geiger counter is suitable for

A. fast counting

B. extremely fast counting

D. all situations

C. slow counting

Answer & Explanation

Answer: Option **C**

Explanation:

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49. A ?-particle can produce fluorescence in

A. ZnS

B. barium platinocyanide

C. calcium tungstate

D. all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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50. Pair production cannot take place in vacuum as _____ is not conserved

A. energy

B. charge

C. mass

D. momentum

Answer & Explanation

Answer: Option **D**

Explanation:

51. CFC is used in refrigeration **A.**

B. aerosol spray

C. plastic foam industry

D. all of above

Answer & Explanation

Answer: Option **D**

Explanation:

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Average distance covered by ?-particle in air before its ionizing power ceases is called its

A. trajectory

B. range

C. firing level

D. limit

Answer & Explanation

Answer: Option **B**

Explanation:

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53. Which one of the following possesses greater penetration power ?

A. ?-rays ?-rays **B.**

C. ?-rays

D. neutron-rays

Answer & Explanation

Answer: Option **D**

Explanation:

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54. The most useful tracer is

A. Sr-90 **B.** I-131

C. CA-41 **D.** C-14

Answer & Explanation

Answer: Option **D**

Explanation:

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55. ?-rays are electromagnetic waves like

A. light waves **B.** heat waves

C. micro waves **D.** x-rays

Answer & Explanation

Answer: Option **D**

Explanation:

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56. Charge on ?-particle is

A. 1 **B.** -1

C. plus two **D.** -2

Answer & Explanation

Answer: Option **A**

Explanation:

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57. Why ?-rays are used to kill bacteria to sterilize surgical equipments etc?

A. chargeless **B.** massless

C. highly penetrating **D.** all of above

Answer & Explanation

Answer: Option **C**

Explanation:

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58. ?-particle ionizes an atom

due to electrostatic force of attraction due to electrostatic force of repulsion

due to direct collision due to gravitational force

Answer & Explanation

Answer: Option **B**

Explanation:

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59. ?-particles possess greater penetration power than that of ?-particles due to its

A. smaller ionization power **B.** greater ionization power

C. neither greater nor smaller **D.** same ionization power ionization power

Answer & Explanation

Answer: Option **A**

Explanation:

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60. Pair production cannot take place in vacuum as

A. mass is not conserved

B. energy is not conserved

C. momentum is not conserved

D. charge is not conserved

Answer & Explanation

Answer: Option **C**

Explanation:

61. Pair production can take place only with

A. X-rays

B. ?-rays

C. UV-rays

D. IR-rays

Answer & Explanation

Answer: Option **B**

Explanation:

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62. A device for producing high velocity nuclei is

B. linear accelerator

A. cloud chamber

C. a mass spectrograph **D.** Wilson cloud chamber

Answer & Explanation

Answer: Option **B**

Explanation:

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63. Which of the following will be a better shield against ?-rays?

A. ordinary water heavy water **B.**

C. lead **D.** aluminum

Answer & Explanation

Answer: Option **C**

Explanation:

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64. The maximum safe limit dose for persons working in nuclear power station are

A. 1 rem per week **B.** 5 rem per week

C. 4 rem per week **D.** 3 rem per week

Answer & Explanation

Answer: Option **B**

Explanation:

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65. Radiations are used for the treatment of skin of a patient is

A. ?-rays

B. ?-rays

C. ?-rays

D. X-rays

Answer & Explanation

Answer: Option **B**

Explanation: