

1) The Sensitivity of a Potentiometer can be increased by which of the following methods?

- a) Increasing the current in the main circuit
- b) Decreasing the current in the main circuit
- c) Increasing the length of the wire
- d) Both b and c are correct

Answer: d)

Sensitivity of potentiometer can be increased by increasing the length of the potentiometer wire and by reducing the current in the circuit by using a rheostat. Both the methods help in decreasing the potential gradient, and thereby increasing the resistivity.

2) Spoon appears to be bend in a beaker full of water. This happens due to which of the following phenomenon?

- a) Reflection
- b) Dispersion
- c) Refraction
- d) Radiation

Answer: c)

A spoon looks bent in water because of a phenomenon called refraction. When light enters water, it cannot move as fast as it does in air. As light enters water at an angle, it bends away from its original path, and this makes the spoon look bent.

3) Which of the following device converts low-voltage alternating current into high-voltage alternating current?

- a) Transistor
- b) Rectifier
- c) Galvanometer
- d) Transformer

Answer: d)

A transformer is a static device which transfers electrical energy from one circuit to another through the process of electromagnetic induction. It is a device that

converts low-voltage alternating current into high-voltage alternating current.

4) A Javelin or shot-put thrown by an athlete moving along a curved path possesses which type of motion?

- a) Rectilinear Motion
- b) Oscillatory Motion
- c) Curvilinear Motion
- d) Rotatory Motion

Answer: c)

The motion of an object moving in a curved path is called curvilinear motion. The Javelin or shot-put thrown by an athlete moves along a curved path and thus possesses curvilinear motion.

5) Which of the following illustration is an example of Non-Uniform Motion?

- a) The Movement of hands of watches
- b) The Movement of Earth about its axis
- c) Free-falling stone under the action of gravity
- d) The movement of Earth around the Sun

Answer: c)

Non-Uniform motion is defined as the motion of an object in which the object travels with varied speed and it does not cover same distance in equal time intervals, irrespective of the time interval duration. Thus, free-falling stone under the action of gravity is an example of Non-Uniform Motion.

6) On shaking or giving jerks to the branches of the tree, the fruits fall down. This happens due to which of the following phenomenon?

- a) Inertia of Rest
- b) Acceleration
- c) Inertia of Motion
- d) Displacement

Answer: a)

Fruits fall down due to inertia of rest when the branches of a tree are shaken. Fruits and branches are both at rest,

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but when branches of trees are shaken, branches start moving whereas fruits remain its state of rest and so separated from the branches and fall down.

7) The Value of the Universal Gravitational Constant (G) was first of all experimentally determined by which physicist?

- a) Robert Adler
- b) Franz Aepinus
- c) Henry Cavendish
- d) Neil Ashby

Answer: c)

Henry Cavendish was an English natural philosopher, scientist, and an important experimental and theoretical chemist and physicist. He determined the value of the Universal Gravitational Constant by using an extremely sensitive torsion balance in 1798.

8) Which of the following statement is false with respect to mass of a body?

- a) Mass is the basic property of the matter
- b) Mass of the body can never be zero
- c) It can be measured with the help of beam-balance
- d) Mass is a vector quantity

Answer: d)

All the above statements are true except d) as mass is a scalar quantity. Scalar quantities are those characteristics of matter that can be measured with a scale.

9) The bullet fired from a gun possesses which form of energy that can pierce a target?

- a) Kinetic Energy
- b) Gravitational Energy
- c) Potential Energy
- d) Nuclear Energy

Answer: a)

The kinetic energy of a body by virtue of its motion is called kinetic energy. A bullet fired from the gun possesses kinetic energy and can pierce a target.

10) The needle of the iron swims on the surface of the water when it is kept gently. This happens because of which of the following factor?

- a) Buoyant Force
- b) Due to Surface-Tension
- c) Density of needle is less than that of water
- d) Due to its shape

Answer: b)

The needle of the iron swims on the water surface when kept gently because of the peculiar property of liquids called Surface- tension.

11) What will happen to the object if the density of the object is less than the density of the water?

- a) Object will sink in water
- b) Object will remain submerged completely
- c) Object will float on the surface of water
- d) None of these

Answer: c)

If the density of the object is less than the density of the water, then the object will float on the surface of the water. This is because of the intrinsic property of density.

12) What will be the angle between the Gravitational force (F) and the displacement (S) when a stone is thrown upwards?

- a) 90°
- b) 45°
- c) 120°
- d) 180°

Answer: d)

When a stone is thrown upwards, its motion is opposed by the gravity. The angle formed between the Gravitational force and the Displacement in this case would be 180 Degree.

13) The Quality or tone of a musical sound produced by the stringed instrument depends upon which of the following factor?

- a) Waveform
- b) Fundamental Frequency
- c) Length of the string
- d) Amplitude of the vibration

Answer: a)

The quality of a note depends upon the waveform. Two notes of the same pitch and loudness played from

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different instruments do not sound the same because the waveforms are different and therefore differ in quality or tone.

14) Person who is suffering from Colour-Blindness cannot distinguish between which two colours?

- a) Yellow and Blue
- b) Red and Yellow
- c) Black and white
- d) Red and Green

Answer: d)

Colour blind people have problem only with identifying red & green colours. Hence, they cannot drive as they cannot make out difference in red & green signals.

15) A Galvanometer can be converted into voltmeter by connecting.....?

- a) Low Resistance in series
- b) High Resistance in series
- c) High Resistance in parallel
- d) Low Resistance in parallel

Answer: b)

A galvanometer can be converted into a voltmeter by connecting a high resistance in series with the galvanometer coil.

16) Kinetic Energy of an object or a particle depends upon which of the following factor?

- a) Velocity of the moving body
- b) Mass of the moving body
- c) Pressure of the moving body
- d) Both a and b

Answer: d)

Kinetic energy is a form of energy that an object or a particle has by reason of its motion. Kinetic energy is a property of a moving object or particle and depends upon the mass and the velocity of the moving body.

17) Which of the following law validates the statement that that "the current flowing through a conductor between two points is directly proportional to the voltage across the two points?"

- a) Coulomb's law
- b) Ohm's law

- c) Faraday's law
- d) Avogadro's law

Answer: b)

In 1828, George Simon Ohm, a German physicist, derived a relationship between electric current and potential difference. This relationship is known as Ohm's law. Ohm's law states that the current through a conductor between two points is directly proportional to the voltage across the two points.

18) The Moment of Inertia does not depend upon which of the following factor?

- a) Axis of Rotation
- b) Distribution of mass of the body
- c) Shape and size of the body
- d) Angular Velocity

Answer: d)

Moment of inertia depends on both the mass of a body and its geometry, or shape, as defined by the distance to the axis of rotation. It does not depend upon the angular velocity.

19) What is the nature of the waves produced on the surface of the water when a stone is thrown in the calm water of a pond?

- a) Longitudinal waves are produced
- b) Transverse waves are produced
- c) Mechanical waves are produced
- d) Both a and b

Answer: b)

The waves produced by a stone dropped in water are transverse in nature because in a transverse wave whenever a disturbance is produced, it creates oscillations that are perpendicular to the propagation of energy transfer. In the same way when the stone is dropped, the water molecules vibrate up and down at the same place producing transverse waves.

20) Which of the following device is used for measuring the wavelength of the X-rays?

- a) Cyclotron
- b) Manometer
- c) Mass Spectrometer
- d) Bragg Spectrometer

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Answer: d)

Bragg's spectrometer used to determine the wavelength of X - rays. Bragg's spectrometer method is one of the important methods for studying crystals using X-rays. It is similar in construction to an ordinary optical spectrometer.

21) Which of the following phenomenon is not caused due to the Atmospheric Refraction of light?

- a) Mirage on a highway
- b) Twinkling of stars
- c) Sun becoming visible two or three minutes before actual sunrise
- d) Sun appearing higher than it actually is

Answer: d)

Sun appearing higher than it actually is, is not caused due to atmospheric refraction of light. The sun appears higher or lower in the sky due to the changing position of the Earth relative to the Sun.

22) Convex Mirrors are used as rear-view mirrors in cars and motor-vehicles due to which of the following characteristic property?

- a) It forms inverted image of the object
- b) It forms real image of the object
- c) It forms larger image of the object
- d) It forms smaller image as compared with the object

Answer: d)

Convex-mirrors are used as rear-view mirrors in cars and motor-vehicles because the image formed by the convex mirror is always erect, virtual and smaller than the object which helps drivers to see other vehicles coming up behind them.

23) Burns caused by steam are much more severe than those caused by boiling water because of which of the following reason?

- a) Higher temperature of steam as compared to boiling water
- b) Steam being in gaseous form engulfs the body quickly
- c) Latent heat of steam greater than boiling water
- d) Steam pierces through the pores of the body quickly

Answer: c)

Steam produces more severe burns than boiling water because the Latent heat of steam is greater than water. It means that steam has greater heat energy than boiling water which causes more severe burns.

24) What will happen to the level of the water in a beaker when a piece of ice floating on its surface melts?

- a) Level of the water remains the same
- b) Level of the water increases
- c) Level of the water decreases
- d) First Increases then decreases gradually

Answer: a)

The water level remains the same when the ice cube melts. A floating object displaces an amount of water equal to its own weight. Since water expands when it freezes, one ounce of frozen water has a larger volume than one ounce of liquid water.

25) What will be the effect on the current flowing through a conductor, if the resistance is doubled and the potential-difference remains constant?

- a) Current gets halved
- b) Current becomes one-fourth
- c) Current gets doubled
- d) Remains the same

Answer: a)

If the resistance is doubled and the potential-difference is constant, then the current flowing through the conductor gets halved because the current is inversely proportional to the resistance.

26) The heating element of the electrical heating appliances such as electric iron is made of alloy rather than pure metal because.....?

- a) Resistivity of alloy is lower than pure-metal
- b) Alloy does not undergo oxidation easily even at high temperature
- c) Resistivity of alloy is much higher than pure-metal
- d) Both a and b

Answer: d)

The heating elements of electric toaster and electric iron made of an alloy rather than pure metal because alloys

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have higher resistivity, than constituent metals and they also do not undergo oxidation easily even when the temperature is high.

27) What is the commercial unit of the electrical-energy?

- a) Watt-hour
- b) Joule
- c) Watt
- d) Kilowatt-hour

Answer: d)

The SI unit joule is too small to express very large quantities of energy. Hence, we use a bigger unit called kilowatt hour (kWh) as the commercial unit of electrical-energy.

28) The Strength of the magnetic field produced by a current carrying Solenoid depends upon which of the following factors?

- a) Strength of current in the solenoid
- b) Nature of the core-material used
- c) Number of turns in solenoid
- d) All of the above

Answer: d)

A solenoid is a long-insulated copper wire wound in the form of a helix. When an electric current is passed through a solenoid, magnetic field is produced around it. The strength of the magnetic field depends upon the number of turns in the solenoid, strength of the current and the nature of the core-material used in making solenoid.

29) A Device which reverses the direction of the current flowing through a circuit is

- a) Resistor
- b) Galvanometer
- c) Commutator
- d) Ammeter

Answer: c)

A commutator is a device or a rotary electrical switch in certain types of electric motors and electrical generators that periodically reverses the current direction between the rotor and the external circuit.

30) Who among the following scientist is credited for discovering the phenomenon of Electromagnetic-Induction?

- a) Michael Faraday
- b) James Clerk Maxwell
- c) Joseph Henry
- d) Both a and c

Answer: d)

Electromagnetic or magnetic induction is the production of an electromotive force across an electrical conductor in a changing magnetic field. The phenomenon of Electromagnetic Induction was discovered by a British scientist Michael Faraday and American scientist Joseph Henry independently in the year 1831.

31) Circuit breaker device which can be used in place of fuse in domestic electric wiring is called as.....?

- a) CBD
- b) MCB
- c) MCD
- d) DCB

Answer: b)

An MCB or miniature circuit breaker is an electromagnetic device that embodies complete enclosure in a molded insulating material. It is a device which can be used in place of fuse in domestic electric wiring.

32) Which of the following is used as a moderator in the reactor of a nuclear power station?

- a) Carbon dioxide
- b) Graphite
- c) Boron
- d) Liquid Sodium

Answer: b)

A moderator is one of the important components of nuclear power plant helping to maintain neutron population in the thermal energy range. Graphite is used as a moderator in the reactor of a nuclear power-station.

33) What is the nature of the image of the object formed by a plane-mirror?

- a) Virtual image

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- b) Diminished image
- c) Inverted image
- d) Real image

Answer: a)

The image formed by a plane mirror is always virtual which means that the light rays do not actually come from the image, upright, and of the same shape and size as the object it is reflecting.

34) Which type of mirror is used as reflectors in torches, vehicle head-lights to get the powerful beams of light?

- a) Convex mirror
- b) Plane mirror
- c) Concave mirror
- d) Spherical mirror

Answer: c)

A concave mirror is used as a reflector in torches, search lights, head lights of motor vehicles etc. to get powerful parallel beam of light. This helps us to see things up to a considerable distance in the darkness of night.

35) A pool of water appears to be less deep than it actually is. This happens due to which of the following phenomenon?

- a) Interference
- b) Diffraction
- c) Reflection
- d) Refraction

Answer: d)

The pool appears to be less deep than it really is due to the Refraction of light which takes place when the light rays pass from the pool of the water into the air. When we look into the pool of the water, we do not see the actual image; we see a virtual image of the bottom of the pool formed due to refraction of light.

36) What is the power of accommodation of the eye for a person having normal vision?

- a) 5 Dioptres
- b) 6 Dioptres
- c) 4 Dioptres
- d) 2 Dioptres

Answer: c)

Accommodation is the mechanism by which the eye changes refractive power by altering the shape of lens in order to focus objects at variable distances. Power of accommodation of the eye for a person having normal eye sight is 4Dioptres.

37) Which of the following is a defect of vision in which an old person cannot see the nearby objects clearly due to loss of power of accommodation of the eye?

- a) Myopia
- b) Cataract
- c) Hypermetropia
- d) Presbyopia

Answer: d)

Presbyopia is a visual condition which becomes apparent especially in middle age and in which loss of elasticity of the lens of the eye causes defective accommodation and inability to focus sharply for near vision.

38) Which of the following defect of vision cannot be corrected by using any type of spectacle lenses?

- a) Cataract
- b) Presbyopia
- c) Myopia
- d) Hypermetropia

Answer: a)

A cataract is a clouding of the lens in the eye which leads to a decrease in vision. Cataracts often develop slowly and can affect one or both eyes. It cannot be corrected by using any type of spectacle lenses.

39) Which colour of the white light suffers maximum bending when it passes through a glass prism?

- a) Red
- b) Blue
- c) Violet
- d) Green

Answer: c)

Violet bends or refracts the most as light passes through air and into a prism. This is because violet light in the visible light spectrum has a shorter wavelength of about

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400 nanometres when compared to red at 650 nanometres.

40) The loudness of the sound is measured in terms of.....?

- a) Metres
- b) Decibel
- c) Pitch
- d) Hertz

Answer: b)

Loudness of sound is measured in decibels (dB). This is actually a measure of intensity, which relates to how much energy the pressure wave has. Decibels are a relative measurement. They relate the intensity of a pressure wave to a normal or standard pressure.

41) What is the minimum distance from a sound reflecting surface to hear an echo?

- a) 17.2 m
- b) 17.5 m
- c) 18.2 m
- d) 16.2 m

Answer: a)

The distance from a sound reflecting surface to hear an echo is 17.2 m. For e.g.- In order to hear an echo of our shout, we should be at least 17.2 m away from a sound reflecting surface like wall.

42) What is the S.I unit of Magnetic Flux Density?

- a) Weber
- b) Newton
- c) Tesla
- d) Gauss

Answer: c)

Magnetic Flux density is the measure of the number of magnetic lines of force per unit of cross-sectional area. The SI unit for magnetic flux density is called the tesla, which is symbolized by the letter T. One tesla is defined as the field intensity of 1 newton of force per ampere.

43) An electronic circuit in which different components such as Diode, Resistor and Capacitor etc. are connected separately is called as?

- a) Printed Board

b) Integrated Circuit

- c) Electric Circuit
- d) Discrete Circuit

Answer: b)

An integrated circuit (IC), sometimes called a chip or microchip, is a semiconductor wafer on which thousands or millions of tiny resistors, capacitors, and transistors are fabricated separately. An IC can function as an amplifier, oscillator, timer, computer memory, or microprocessor.

44) Which of the following method is used for converting moving coil Galvanometer into an ammeter?

- a) Low resistance in parallel
- b) High resistance in parallel
- c) Low resistance in series
- d) High resistance in series

Answer: a)

Since Galvanometer is a very sensitive instrument therefore it can't measure heavy currents. In order to convert a Galvanometer into an Ammeter, a very low resistance known as "shunt" resistance is connected in parallel to Galvanometer. Value of shunt is so adjusted that most of the current passes through the shunt. In this way a Galvanometer is converted into Ammeter.

45) Which form of energy is possessed by a horse running on a level road?

- a) Potential Energy
- b) Kinetic Energy
- c) Work Energy
- d) Heat Energy

Answer: b)

The kinetic energy of a body is the energy possessed by body by virtue of its state of motion. Thus, a horse running on a level road would possess Kinetic-Energy.

46) What is the term used for the maximum displacement of a vibrating body from its mean position?

- a) Force
- b) Impulse
- c) Amplitude

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d) Wavelength

Answer: c)

Amplitude is the maximum displacement or distance moved by a point on a vibrating body or wave measured from its equilibrium position. It is equal to one-half the length of the vibration path.

47) Which one of the following quantities does not have a unit and is a dimensionless quantity?

- a) Mass
- b) Velocity
- c) Acceleration
- d) Specific Gravity

Answer: d)

Specific gravity is the density of a unit object divided by the density of a reference substance. Specific gravity is a dimensionless quantity; that is, it is not expressed in units.

48) As a train approaches us, the frequency or shrillness of its whistle increases. This phenomenon can be explained by?

- a) Charles's Law
- b) Faraday's law
- c) Doppler Effect
- d) Archimedes Principle

Answer: c)

The Doppler Effect is the change in frequency or wavelength of a wave in relation to an observer who is moving relative to the wave source. We find that as train approaches us, the frequency (or shrillness) of its whistle increases and when train recedes (goes away) from us, then the frequency (or shrillness) of its whistle decreases. This happens due to Doppler Effect.

49) Which of the following is commonly used as a fuel for producing heat in Nuclear-Power Station?

- a) Heavy Water
- b) Helium
- c) Coal
- d) Uranium

Answer: d)

Nuclear fuel is material used in nuclear power stations to produce heat to power turbines. Heat is created when

nuclear fuel undergoes nuclear fission. The element commonly used as a fuel in commercial nuclear power plants is uranium.

50) What is the specific term used for the sum of the internal energy and the product of pressure and volume?

- a) Force
- b) Entropy
- c) Work Done
- d) Enthalpy

Answer: d)

Enthalpy is essentially a thermodynamic quantity. Enthalpy is the sum of the internal energy and the product of the pressure and volume of a thermodynamic system.

51) What will be the effect on the time-period, if the length of the simple-pendulum is increased?

- a) Time-period increases
- b) Time-Period decreases
- c) It will increase then decrease gradually
- d) Remains the same

Answer: a)

If the length of the pendulum is increased the time period of the pendulum also gets increased. This is because the longer a pendulum is, the more time it takes a pendulum takes to complete a period of time.

52) In a perfectly elastic collision, which of the following factor remains conserved?

- a) Momentum remains conserved
- b) Linear momentum and kinetic energy remain conserved
- c) Kinetic Energy remains conserved
- d) None of them remains conserved

Answer: a)

Collisions can be elastic or inelastic. For perfectly elastic collisions, as per The Law of Momentum Conservation- The sum of momentums of all bodies in an isolated system is constant, in other words the total momentum of an isolated system is conserved.

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53) Potentiometer is preferred in comparison to the Voltmeter for measuring the potential-Difference due to which of the following reason?

- a) Resistance of the potentiometer is less compared to voltmeter
- b) Potentiometer is affordable than voltmeter
- c) Potentiometer is more sensitive than voltmeter
- d) Potentiometer does not take current from the circuit

Answer: c)

A potentiometer is preferred over a voltmeter because Potentiometer is a very sensitive instrument and measures emf of a cell very precisely. Hence, potentiometer is preferred for measuring the potential-difference.

54) Pyrometer is an instrument which is used to measure.....?

- a) Stress
- b) Pressure
- c) Strain
- d) Temperature

Answer: d)

A pyrometer is a device that is used for the temperature measurement of an object. The device actually tracks and measures the amount of heat that is radiated from an object.

55) Electric current induced within the conductor by changing magnetic field, which flows in closed loops within the conductor is known as?

- a) Fleming's current
- b) Eddy current
- c) Direct current
- d) Secondary current

Answer: b)

Eddy currents are currents which circulate in conductors like swirling eddies in a stream. They are induced by changing magnetic fields and flow in closed loops.

56) The Density of the water is highest at which of the following temperature?

- a) 100 Degree Celsius
- b) 0 Degree Celsius
- c) -273 Degree Celsius

d) 4 Degree Celsius

Answer: d)

The maximum density of water occurs at 4° C because; at this temperature two opposing effects are in balance. Above the 4 Degree temperature, the water molecules expand due to temperature increase. Hence density will decrease.

57) Which of the following metal is generally used to make Electromagnets?

- a) Iron
- b) Cobalt
- c) Nickel
- d) Copper

Answer: a)

Soft iron is generally used for making electromagnets because it has high magnetic permeability, i.e. it can easily gain magnetic properties when current is passed around the core and quickly lose when current is stopped.

58) The Shortest distance covered by the body in a definite direction is known as.....?

- a) Distance
- b) Velocity
- c) Acceleration
- d) Displacement

Answer: d)

A displacement is a vector whose length is the shortest distance from the initial to the final position of a point. It quantifies both the distance and direction of an imaginary motion along a straight line from the initial position to the final position of the point.

59) While jumping from a slowly moving bus, one must run for a short distance in the direction of motion due to.....?

- a) Inertia
- b) Momentum
- c) Acceleration
- d) Retardation

Answer: a)

While jumping from a slowly moving bus, one must run for a short distance in the direction of motion due to

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property of inertia. When the passenger jumps out, the lower part of the person's body comes at rest on touching the ground, but the upper part remains in the state of motion due to inertia of motion as a result of which person may fall forward and get seriously injured.

60) How many times will be the kinetic energy of the body, if the momentum of the body is doubled?

- a) 6 Times
- b) 8 Times
- c) 4 Times
- d) Remains the same

Answer: c)

If the momentum of an object is doubled by increasing its velocity, its kinetic energy becomes 4 times the initial value.

61) Which law validates the statement that 'All the planets move around the sun in an elliptical orbit, with the sun being at rest at one focus of the orbit'?

- a) Newton's Law of Gravitation
- b) Law of Conservation of Linear Momentum
- c) Kepler's First Law of Planetary motion
- d) Newton's first law of motion

Answer: c)

Three laws devised by Johannes Kepler to define the mechanics of planetary motion. The first law states that planets move in an elliptical orbit, with the Sun being one focus of the ellipse. This law identifies that the distance between the Sun and Earth is constantly changing as the Earth goes around its orbit.

62) What is the minimum velocity with which a body should be projected from the earth surface so that it goes out of the gravitational field and never return back is?

- a) Terminal Velocity
- b) Escape Velocity
- c) Constant Velocity
- d) Instantaneous Velocity

Answer: b)

Escape velocity is the minimum speed needed for a free object to escape from the gravitational influence of a

massive body. The escape velocity from Earth is about 11.186 km/s at the surface.

63) Which type of weather is indicated by the slow fall in the barometric reading?

- a) Indication of storm
- b) Indication of Rain
- c) Indication of clear weather
- d) Indication of Humidity

Answer: b)

A barometer is a device used to measure atmospheric pressure. If there is a slow fall in the reading of the barometer, then it is an indication of rain.

64) Which force acts on the body by the liquid in the upward direction, when it is immersed partly or wholly in a liquid?

- a) Gravitational Force
- b) Electrostatic Force
- c) Balanced Force
- d) Buoyant Force

Answer: d)

When a body is immersed partly or wholly in a liquid, a force acts on the body by the liquid in upward direction. This force is call Buoyant force or force of buoyancy or up thrust. It is equal to the weight of the liquid displaced by the body and acts at the centre of gravity of displaced liquid. Its study was first made by Archimedes.

65) Which of the following instrument is used to measure the Relative Density?

- a) Altimeter
- b) Hygrometer
- c) Hydrometer
- d) Hypsometer

Answer: c)

A hydrometer is an instrument used for measuring the relative density of liquids based on the concept of buoyancy. The working of the Hydrometer is based on Archimedes Principle.

66) Which state of matter shows viscosity due to the presence of cohesive force between its molecules?

- a) Gases

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- b) Solid
- c) Liquid
- d) All of the above

Answer: c)

Viscosity is the resistance of a fluid (liquid or gas) to a change in shape, or movement of neighbouring portions relative to one another. Liquids show the property of viscosity due to the presence of cohesive forces between its molecules.

67) What is the term used for the restoring force per unit area set up inside the body subjected to deforming force?

- a) Strain
- b) Stress
- c) Up thrust
- d) Frictional Force

Answer: b)

Stress is a physical quantity that expresses the internal forces that neighbouring particles of a continuous material exert on each other. Stress is force per unit area - strain is the deformation of a solid due to stress.

68) Which of the following law states that the stress imposed is directly proportional to the strain under elastic limit?

- a) Snell's Law
- b) Lenz's Law
- c) Hook's Law
- d) Ohm's Law

Answer: c)

Hook's Law is a law in physics stating that the extent to which an elastic material will change, size and shape under stress is directly proportional to the amount of stress applied to it. The law is named after 17th-century British physicist Robert Hooke.

69) What is the maximum time-period of a Simple Pendulum?

- a) 84.6 min
- b) 84.5 min
- c) 78.5 min
- d) 88.5 min

Answer: a)

A simple pendulum is one which can be considered to be a point mass suspended from a string or rod of negligible mass. It is a resonant system with a single resonant frequency. The maximum time-period of a simple pendulum is 84.6 min.

70) Which among the following waves can propagate even through the vacuum and do not require material medium for propagation?

- a) Longitudinal Waves
- b) Transverse Waves
- c) Mechanical Waves
- d) Electromagnetic Waves

Answer: d)

Electromagnetic waves are the waves that are propagated by simultaneous periodic variations of electric and magnetic field intensity. They can propagate even through vacuum and do not require material medium for propagation.

71) Which type of waves is produced by sources of bigger size such as earthquakes, ocean waves and volcanic eruptions?

- a) Sound Waves
- b) Transverse waves
- c) Electromagnetic waves
- d) Infrasonic waves

Answer: d)

Infrasonic, vibrational or stress waves in elastic media, having a frequency below those of sound waves that can be detected by the human ear—i.e., below 20 hertz. In nature such waves occur in earthquakes, waterfalls, ocean waves, volcanoes, and a variety of atmospheric phenomena such as wind, thunder, and weather patterns.

72) Which of the following type of waves cannot be detected by the human ear?

- a) Transverse Waves
- b) Ultrasonic Waves
- c) Mechanical Waves
- d) Electromagnetic Waves

Answer: b)

Ultrasonic wave is a sound wave transmitted at a frequency greater than 20,000 hz per second, or beyond

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the normal hearing range of humans. Ultrasonic waves are well-known for their broad range of applications. They can be employed in various fields of knowledge such as medicine, engineering, physics.

73) What is the effect on the apparent frequency when the distance between the source and the observer decreases?

- a) Decreases
- b) Increases
- c) Increases then decreases gradually
- d) Remains the same.

Answer: b)

If there is relative motion between source of sound and observer, the apparent frequency of sound heard by the observer is different from the actual frequency of sound emitted by the source. This phenomenon is called Doppler's effect. When the distance between the source and the observer decreases, then apparent frequency increases and vice versa.

74) Name the process in which the heat is transferred from one place to another with the speed of light without affecting the intervening medium?

- a) Radiation
- b) Conduction
- c) Convection
- d) Transmission

Answer: a)

Heat transfer through radiation takes place in form of electromagnetic waves mainly in the infrared region. Radiation emitted by a body is a consequence of thermal agitation of its composing molecules. It is the process in which heat is transmitted one place to other directly without intervening medium.

75) Which device converts heat-energy into mechanical work continuously through a cyclic process?

- a) Heat-Engine
- b) Internal Combustion Engine
- c) Electric Generator
- d) Transformer

Answer: a)

A heat engine is a device that converts heat to work. It takes heat from a reservoir then does some work like moving a piston, lifting weight etc. This device converts heat-energy into mechanical work through cyclic process.

76) Which of the following law states that 'the ratio of sine of angle of incidence to the sine of angle of refraction is a constant?'

- a) Lenz's law
- b) Faraday's law
- c) Hook's law
- d) Snell's law

Answer: d)

Snell's law is a law in physics that states that the ratio of the sines of the angles of incidence and refraction is constant for all incidences in any given pair of media for electromagnetic waves of a definite frequency.

77) The air-bubbles shine in water due to which of the following phenomenon?

- a) Refraction of Light
- b) Dispersion of Light
- c) Total internal reflection
- d) Reflection of Light

Answer: c)

Air-bubbles shine due to Total Internal reflection. When the rays go from water to air bubble, it suffers total internal reflection and reflects the rays back as if a plane mirror, so it shines brightly.

78) Which eye-disorder arises due to difference in the radius of curvature of cornea in the different planes?

- a) Hypermetropia
- b) Myopia
- c) Presbyopia
- d) Astigmatism

Answer: d)

Astigmatism is a common and generally treatable imperfection in the curvature of your eye that causes blurred distance and near vision. Astigmatism occurs when light is bent differently depending on where it strikes the cornea and passes through the eyeball. An

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eye with astigmatism has a cornea that is curved more like a football, with some areas that are steeper or more rounded than others. This can cause images to appear blurry and stretched out.

79) What is the SI unit of the Electric capacity of a conductor?

- a) Joule
- b) Volt
- c) Ampere
- d) Farad

Answer: d)

The farad is the SI derived unit of electrical capacitance which is defined as the ability of a body to store an electrical charge. It is named after the English physicist Michael Faraday.

80) Which instrument is used to measure the force and the velocity of the wind?

- a) Altimeter
- b) Anemometer
- c) Audiometer
- d) Ammeter

Answer: b)

An anemometer is an instrument used to measure the speed or velocity of air (gases) either in a contained flow, such as airflow in a duct, or in unconfined flows, such as atmospheric wind.

81) Which instrument is used to measure the scattering of the light by particles suspended in a liquid?

- a) Nephelometer
- b) Lactometer
- c) Odometer
- d) Photometer

Answer: a)

Nephelometer is an instrument for measuring the concentration of substances in suspension by the amount of light that is scattered by the suspended particles.

82) Dynamo is a device that converts mechanical energy into

- a) Heat Energy

- b) Electrical Energy
- c) Light Energy
- d) Chemical Energy

Answer: b)

A dynamo is an electrical generator that creates direct current using a commutator. Dynamos were the first electrical generators capable of delivering power for industry. It is a device that converts mechanical energy into electrical energy.

83) Which of the following instrument is used to study the phenomenon of Dispersion of Light?

- a) Spectrometer
- b) Photometer
- c) Microscope
- d) Anemometer

Answer: a)

Spectrometer is an optical device for measuring wavelengths, deviation of refracted rays, and angles between faces of a prism, esp. an instrument consisting of a slit through which light passes, a , a prism that deviates the light, and a telescope through which the deviated light is viewed and examined.

84) Radio-waves are reflected back to the earth's surface through which layer of the atmosphere?

- a) Mesosphere
- b) Troposphere
- c) Ionosphere
- d) Stratosphere

Answer: c)

Radio waves are reflected back to the Earth from the ionosphere. Radio waves are reflected back to the Earth from the ionosphere.

85) The intensity of the Gravitational field of the Earth is maximum at the.....?

- a) Surface of the earth
- b) Poles
- c) Centre of the earth
- d) Equator

Answer: b)

The Intensity of the Gravitational field of the Earth is maximum at the poles.

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86) The Filament of an Electric-Bulb is made up of which of the following material?

- a) Iron
- b) Tungsten
- c) Nichrome
- d) Copper

Answer: b)

The Filament of an Electric Bulb is made up of Tungsten. This is because the filament of a bulb must be made with a material which possess high melting point, high resistance and high tensile resistance and tungsten do have all these qualities.

87) Which of the following supports the particle nature of the Photons?

- a) Polarization
- b) Diffraction
- c) Interference
- d) Photoelectric Effect

Answer: d)

The photoelectric effect is a phenomenon in physics. The effect is based on the idea that electromagnetic radiation is made of a series of particles called photons. Thus, this effect supports the particle nature of the photons.

88) The moderators are used in Nuclear Reactors because of which of the following reason?

- a) They absorb the neutrons
- b) They accelerate the neutrons
- c) They generate the neutrons
- d) They slow down the speed of neutrons

Answer: d)

In nuclear reactor, a moderator is a medium that reduces the speed of fast neutrons. Heavy water is basically used as a moderator in nuclear reactors to slow down the neutrons so that they are captured and become effective to bring about the fission reaction.

89) Which of the following instrument is used to study the behaviour of a vibrating string?

- a) Hydrometer
- b) Barometer

- c) Sonometer
- d) Altimeter

Answer: c)

A Sonometer is a device for demonstrating the relationship between the frequency of the sound produced by a plucked string, and the tension, length and mass per unit length of the vibrating string. It was invented by Pythagoras.

90) What is the minimum escape-velocity of the rocket to be launched into space?

- a) 6 Km/sec
- b) 11 Km/sec
- c) 18 Km/sec
- d) 5 Km/sec

Answer: b)

The minimum escape velocity of the rocket to be launched into space is 11 Km/sec.

91) The group of solar-cells joined together in a definite pattern is called as.....?

- a) Solar Heater
- b) Solar Cooker
- c) Solar Cell Panel
- d) Solar Compartment

Answer: c)

A group of solar cells is called a solar cell panel. It consists of a large number of solar cells joined together in a definite pattern. It provides a lot of electric energy required by artificial satellites, water pumps, street lighting, etc.

92) Fuse-Wire is made up of which of the following two components?

- a) Tin and Copper
- b) Tin and Lead
- c) Lead and Copper
- d) Copper and Silver

Answer: b)

A fuse consists of two main components: one is a fusible element in the form of a metal conductor along with a set of contacts between which it is fixed and the other is a case or cartridge to hold the fusible

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element. Fuse wire is usually made up of an alloy of tin and lead.

93) When the kerosene oil is sprinkled on water, the larva of the mosquitoes floating on the surface die. This happens due to which of the following phenomenon?

- a) Capillarity
- b) Buoyant Force
- c) Viscosity
- d) Surface-Tension

Answer: d)

When kerosene oil is sprinkled on water, its surface tension decreases. As a result, the larva of mosquitoes floating on the surface of water die due to sinking.

94) What is the term used for the force which opposes the relative motion between the different layers of the liquids and gases?

- a) Buoyant force
- b) Cohesive force
- c) Viscous force
- d) Adhesive force

Answer: c)

The viscous force is the force between a body and a fluid (liquid or gas) moving past it, in a direction so as to oppose the flow of the fluid past the object. In particular, the force acts on the object in the direction in which the fluid is moving relative to it.

95) Which device working on the principle of Bernoulli's Theorem is used to measure the rate of flow of fluid?

- a) Venturimeter
- b) Bolometer
- c) Cathetometer
- d) Colorimeter

Answer: a)

A venturimeter is a device used to measure the fluid flow through pipes. This flow measurement device is based on the principle of Bernoulli's equation. It is a flow measurement device, commonly utilized in the water supply industry.

96) What is the value of acceleration of the particle exhibiting Simple Harmonic motion when it passes through the mean-position?

- a) Maximum
- b) Minimum
- c) Zero
- d) Remains the same

Answer: c)

Simple harmonic motion is any motion where a restoring force is applied that is proportional to the displacement and in the opposite direction to that displacement. When the particle exhibiting simple harmonic motion passes through the mean position then the acceleration of the particle is zero.

97) Which of the following law validates the statement that 'the radiant energy emitted by the black-body per unit area in unit-time is directly proportional to fourth power of its absolute temperature?'

- a) Lenz's law
- b) Kirchhoff's law
- c) Faraday's law
- d) Stefan's law

Answer: d)

Stefan law states that the total radiant heat energy emitted from a surface is proportional to the fourth power of its absolute temperature. It was formulated in 1879 by Austrian physicist Josef Stefan as a result of his experimental studies.

98) Who among the following scientist is known for the discovery of 'Law of Electric Resistance'?

- a) Michael Faraday
- b) Henry Becquerel
- c) Alfred Nobel
- d) G.S Ohm

Answer: d)

In 1828, George Simon Ohm, a German physicist, derived a relationship between electric current and potential difference. This relationship is known as Ohm's law or the Law of Electric Resistance.

99) Which of the following physical quantity is measured in 'Siemens'?

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- a) Electric Resistance
- b) Electric Conductance
- c) Magnetic Flux
- d) Refractive Index

Answer: b)

The siemens is the derived unit of electric conductance in the International System of Units (SI). Conductance is the reciprocal of resistance. One siemens is redundantly equal to the reciprocal of one ohm and is also referred to as the mho.

100) The Distance-Time graph for a body having uniform-motion is a.....?

- a) Parabola

- b) Curved Line
- c) Straight line sloping upwards
- d) Straight line sloping downwards

Answer: c)

A body is said to be in uniform motion when the body covers the equal distance in equal time intervals. The distance time graph for a body moving at uniform speed is always a straight line sloping upwards as distance travelled by the body is directly proportional to time.



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