



SSC CGL Exam 75+ Physics Questions PDF

1. What is the SI unit of Force?

- A. Pascal
- B. Boyle
- C. Newton
- D. Watt

Ans. C

Sol. Newton is the SI unit of Force. Force is any interaction which would change the motion of an object with mass. Force can be defined as a push or a pull action and which is a vector quantity due to change in both magnitude and direction and it is represented by the symbol F.

2. Which one of the following is a bad thermal conductor?

- A. Aluminum
- B. Copper
- C. Glass
- D. Silver

Ans. C

Sol.

- Glass**, wood and plastic are all excellent insulators and bad thermal conductors.
- In glass, there is no flow of free electrons and hence it doesn't conduct heat but it is a good insulator which allows electricity and heat to pass through it by radiation following the law of optics.

3. What is the SI unit of pressure?

- A. Newton
- B. Weber
- C. Pascal
- D. Henry

Ans. C

Sol. Pressure is a force applied perpendicular to the surface of an object per area over which that force is distributed. Its S.I. unit is Pascal (Pa) which is equal to one newton per meter square. Other units of pressure are atm (i.e. standard atmospheric pressure), torr, etc.

4. Meter in a vehicle that calculates distance covered by the vehicle is called _____.

- A. Speedometer
- B. Odometer
- C. Thermometer
- D. Kilometre

Ans. B

Sol. 'Odometer' is an instrument used for measuring the distance travelled by a vehicle like bicycle, car, etc. The name is derived from the Ancient Greek words: nodós ('path' or 'gateway') and metron

('measure'). In countries where Imperial units or US customary units are used, it is also known as 'Mileometer' or 'Milometer'.

5. Reflection from a smooth surface like that of a mirror is called _____ reflection.

- A. regular
- B. irregular
- C. diffused
- D. fused

Ans. A

Sol. When a beam of parallel light rays is incident on a smooth and plane surface, the reflected rays will be parallel. It is called regular reflection. When a beam of parallel light rays is scattered in all direction it means surface is not smooth. It is called irregular or diffused reflection. In regular reflection, the reflected rays of light move only in a fixed direction.

6. What is the unit of resistance?

- A. ohm
- B. farad
- C. henry
- D. weber

Ans. A

Sol. The unit of resistance is ohm. It is named after German physicist Georg Simon Ohm. Farad is the unit of electrical capacitance, the ability of a body to store an electrical charge. Henry is the unit of electrical inductance. Weber is the unit of magnetic flux.

7. What is the other name of Galileo's law of falling bodies?

- A. Law of motion
- B. Newton's first law
- C. Newton's second law
- D. Newton's third law

Ans. B

Sol. It's the Newton's First Law of motion which has the other name as Galileo's law of falling bodies. This law state that an object at rest stays at rest and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force.

8. Which of the following is not a vector quantity?

- A. Momentum
- B. Displacement
- C. Torque
- D. Speed



Ans. D

Sol. The mathematical quantities that are used to describe the motion of objects can be divided into two categories.

- Scalars quantities are quantities that are described by a magnitude only. Ex - speed, distance, current.
- Vectors quantities are quantities that are defined by both a magnitude and a direction. Ex - Momentum, Displacement, Torque, work.

9. Gravitational force is maximum at which of the following places?

- A. The equator
- B. The tropic of cancer
- C. The tropic of capricorn
- D. The poles

Ans. D

Sol. The Earth's gravity is stronger at the poles than the equator for two reasons:

1. The centrifugal force cancels out the gravity minimally, more so at the equator than at the poles.
2. The poles are closer to the center due to the equatorial bulge and thus have a stronger gravitational field.

10. The phenomena of raising the outer edge of the curved roads above the inner edge to provide necessary centripetal force to the vehicles to take a safe turn is called _____.

- A. banking of roads
- B. cornering of roads
- C. elevation of roads
- D. tempering of roads

Ans. A

Sol. The phenomena of raising the outer edge of the curved roads above the inner edge to provide necessary centripetal force to the vehicles to take a safe turn is called banking of roads.

11. Which of the following is **not** a vector quantity?

- A. Acceleration
- B. Electric current
- C. Force
- D. Velocity

Ans. B

Sol.

- Electric current is **not** a vector quantity.
- Vector quantity are those which have direction as well as magntitude. Force, acceleration, velocity and displacement are few vector quantity.

12. What is the reason for formation of Mirage in desert?

- A. Refract ion of light
- B. Reflection of light
- C. Total internal reflection of light
- D. Both Refraction and Total internal reflection of light

Ans. C

Sol.

- Mirage occurs due to **total internal reflection of light**. When the sun is high in the sky, the sand gets heated first and then the layers of air above it. The rays from the trees travel from an optically denser air layer to a rarer layer and hence bend away from the normal.
- This bending continues and a stage is reached where the angle of incidence becomes greater than the critical angle and total internal reflection takes place.
- The totally reflected rays that reach the eyes appear to come from a point on the ground where the image of the tree is formed. Thus one sees an inverted image of the tree though there is no water around.

13. The bending of light when it passes around a corner or a slit is due to _____.

- A. reflection
- B. refraction
- C. diffraction
- D. total internal reflection

Ans. C

Sol. The bending of light when it passes around a corner or a slit is due to diffraction. It is caused when a wave of light is shifted by a diffracting object and has interference with itself. It is found in sound, water, light waves and in electrons.



14. Which one of the following is not a property of electromagnetic waves?

- A. Electromagnetic waves do not show interference and diffraction.
- B. Oscillating electric field and magnetic field are perpendicular to each other.
- C. Electromagnetic waves are transverse waves
- D. Electromagnetic waves do not require a medium to propagate.

Ans. A

Sol. Electromagnetic waves are waves that are created as a result of vibrations between an electric field and a magnetic field when they are perpendicular to each other. They are transverse waves which can be polarised without any medium and they do not get deflected nor they show interference and diffraction.

15. It is difficult to fix a nail on a freely suspended wooden frame, which law supports this statement?

- A. Law of inertia
- B. Newton's second law
- C. Newton's third law
- D. Pascal's law

Ans. C

Sol. Newton's third law of motion states that for every action there is an equal and opposite reaction. It is difficult to fix a nail on a freely suspended wooden frame because when the wooden block is not resting against a support, the block and nails both move forward as an opposite reaction on being hit with a hammer. However, when the block is held firmly against a support, and the nail is hit, it drives into the block due to equal support.

16. What is the SI unit of frequency?

- A. Newton
- B. Watt
- C. Farad
- D. Hertz

Ans. D

Sol. SI UNITS TO LEARN:

Viscosity	Poise
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Surface tension	Newton/square metre
Heat	Joule
Temperature	Kelvin
Absolute temperature	Kelvin
Resistance	Ohm
Electric current	Ampere
Electromotive force	Volt
Electrical conductivity	Ohm/metre
Electric energy	Kilo watt hour
Electric power	Kilo watt or watt

Hertz is the SI unit of frequency. One hertz means that the number of complete cycles of a sound wave per second.

17. Convex mirror is generally used in _____.

- A. Solar cookers
- B. ophthalmoscope
- C. reflector for head light
- D. rear view mirror

Ans. D

Sol. Convex mirror is used in the rear view mirror. These mirrors, which are also known as diverging mirrors, makes the object appear closer than what they are, which assists the driver/rider to have a better view of the traffic.

18. Speed of light is maximum in _____.

- A. vacuum
- B. solids
- C. liquids
- D. gases

Ans. A

Sol.

- Speed of light is maximum in vacuum.
- The speed of light changes with change in media and depends upon the refractive index. It is the measurement of how often light is slowed down by interacting with matter it passes



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through and value with 1 mans least obstructions.

- The refractive index for vacuum is 1 and hence the speed of light is highest in vacuum.

19. What is the SI unit of electric current?

- A. Newton
- B. Joule
- C. Ampere
- D. Watt

Ans. C

Sol. SI unit of electric current is Ampere. Electric current is defined as the amount of charge that flows through a conductor in unit time. The SI unit of Charge is Coulomb and that of time is seconds and hence S.I. unit of electric current is Coulomb per second which is also called Ampere.

Other Important SI units :

Work	Joule
Energy	Joule
Force	Newton
Pressure	Pascal or Newton/sq. metre Charge
Frequency	Hertz
Power	Watt
Weight	Newton or Kilogram
Impulse	Newton-second
Angular velocity	Radian /second

20. Soap bubble attains spherical shape due to _____.

- A. Inertia
- B. Pressure
- C. Surface tension
- D. Viscosity

Ans. C

Sol.

- Soap bubble attains spherical shape due to **surface tension**.
- Surface tension is the elastic tendency of a fluid surface to acquire the least surface area possible due to cohesion.
- Surface tension of bubbles pulls the molecules of water into the tightest possible groupings forming a sphere.

21. If objects appear enlarged and inverted in a rear view mirror, then which type of mirror is used?

- A. Concave
- B. Convex
- C. Cylindrical
- D. Plane

Ans. A

Sol. Objects appear enlarged and inverted in a rear view mirror, when concave mirror is used. It is a mirror with a curved inward reflecting surface producing real and virtual image which are enlarged or diminished, upright or inverted depending upon the size of the object and the distance of the object from the mirror. It is used by dentist to see teeth.

22. Why does water tank appear shallower when viewed from the top?

- A. Due to reflection
- B. Due to refraction
- C. Due to diffraction
- D. Due to total internal reflection

Ans. B

Sol. Water tank appear shallower when viewed from the top due to Refraction. The light travels straight as long as it is in the water, but if it emerges obliquely from the water into the air it is bent downward toward the surface due to change in density from water to air. This bending is known as refraction which causes water in the tank to appear shallower.

23. Which colour is formed when Red and Green are mixed?

- A. Light Blue
- B. Yellow
- C. White
- D. Grey

Ans. B

Sol. Red, blue and green are the three primary colors, on mixing these primary colors, we get various colors like yellow, magenta, and cyan and so on. When **red** and **green** combine, the result is **yellow**.

When **red** and **blue** combine, the result is **magenta**.

When **blue** and **green** combine, the result is **cyan**.



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24. At which of the following place, weight of an object is maximum?

- A. At poles
- B. At equator
- C. At tropic of Capricorn
- D. At tropic of cancer

Ans. A

Sol.

- The weight of an object is maximum at Poles because of bulged shape of our earth. Earth is not spherical rather bulged at poles.
- While the weight of an object is minimum at Equator because when an object is in the center, it experiences gravitational pull from all directions.

25. Electric Motor converts _____ energy to mechanical energy.

- A. sound
- B. mechanical
- C. chemical
- D. electrical

Ans. D

Sol. Electric Motor converts electrical energy to mechanical energy. It is based on the principle that when a current-carrying conductor is placed in a magnetic field, it experiences a mechanical force whose direction is given by Fleming's Left-hand rule and whose magnitude is given by Force, $F = B I l$ newton

Where B is the magnetic field in weber/m
I is the current in amperes and l is the length of the coil in meter.

26. Optical fibre works on which of the following principle of light?

- A. Reflection
- B. Refraction
- C. Diffraction
- D. Total internal reflection

Ans. D

Sol. Optical fibre works on **Total internal reflection**. It is the phenomenon which occurs when a propagated wave strikes a medium boundary at an angle larger than a particular critical angle with respect to the normal to the surface.

27. Which among the following determines the pitch of a sound?

- A. Amplitude
- B. Frequency
- C. Loudness
- D. Wavelength

Ans. B

Sol. Sound waves themselves do not have pitch, but their oscillations can often be characterized in terms of frequency that is clear and stable enough to distinguish from noise.

28. Which phenomena shows the particle nature of light?

- A. Diffraction
- B. Interference
- C. Photoelectric effect
- D. Polarisation

Ans. C

Sol. The photoelectric effect is the emission of electrons or other free carriers when light falls on the surface of a material. Electrons emitted in this manner can be called photo electrons. This theory gave evidence to the fact that light in interaction with matter behaves as if it made up of quanta or packets of energy.

29. Which colour is formed when Blue and Green are mixed?

- A. Cyan
- B. Brown
- C. Black
- D. Violet

Ans. A

Sol. Cyan is formed when Blue and Green colour are mixed. Red, blue and green are the primary colours used in additive mixing. Additive mixing is used in television and computer monitors to produce a wide range of colors using only three primary colors.

30. What is the SI unit of intensity of sound?

- A. Decibel
- B. Newton
- C. Hertz
- D. Tesla

Ans. A

Sol. The SI unit of intensity of sound is decibel. Intensity of sound is the power carried by sound waves per unit area in a perpendicular direction. The SI unit of sound intensity is watt per square meter also known as decibel.



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31. When a ball is thrown vertically upwards, which of the following quantities remains constant during its motion?

- A. Energy
- B. Velocity
- C. Acceleration
- D. Both A & C

Ans. A

Sol.

- When a ball is thrown vertically upwards, energy remains constant during its motion since it is a scalar unit and is independent as the potential energy gets converted into kinetic energy while the velocity and acceleration due to gravity increases.
- The acceleration of ball will be always be downwards and it's value would be fixed (generally taken as 9.8ms^{-2}) since the object has constant weight.

32. What is the SI unit of heat energy?

- A. Joule
- B. Newton
- C. Calorie
- D. Kelvin

Ans. A

Sol.

- o SI unit of heat energy is Joule. Heat is measured in calories.
- o One calorie = 4.185 joules.
- o Energy can neither be created nor destroyed it can only be transferred like heat to chemical and so on.

33. For which of the following game, players must have the knowledge of Pascal's law?

- A. Climbing
- B. Paragliding
- C. Rafting
- D. Scuba diving

Ans. D

Sol. For scuba diving players must have the knowledge of Pascal's law. Scuba diving is a form of underwater diving where the diver uses a self-contained underwater breathing apparatus (scuba) which is completely independent of surface supply, to breathe underwater. Pascal law states that any pressure applied to a fluid inside a closed system will transmit that pressure equally in all directions throughout the fluid.

34. What is the value of the Least Distance of Distinct vision (in cm) for a normal human being?

- A. 2.5
- B. 25
- C. 58
- D. 60

Ans. B

Sol.

- 25 cm is the value of the Least Distance of Distinct vision for a normal human being. It is the minimum comfortable distance between the naked human eye and a visible object.
- If a person is not able to see the object clearly from 25cm then he may be suffering either from myopia or Hypermetropia.

35. On which principle does the hydraulic lift works?

- A. Newton's law
- B. Pascal's law
- C. Archimedes's law
- D. Joule's law

Ans. B

Sol. It's the Pascal's law on which the hydraulic lift work. Moreover this law states that in fluid mechanics a pressure change occurring in a confined incompressible fluid is transmitted throughout the fluid such that the same change occurs everywhere.

36. At what temperature (in degree Celsius), the numerical values on Celsius and Fahrenheit scales become equal?

- A. -40
- B. 40
- C. 273
- D. -273

Ans. A

Sol. It's at the numerical value of -40, that the Celsius and the Fahrenheit scale overlaps. Explaining about the Celsius scale it involves that the water boils at 100 degree and its freezing point is 0, whereas for the Fahrenheit scale, boiling point is 212 degrees and the freezing point stands at 32 degrees. Moreover to convert Celsius scale to Fahrenheit, we can do it with the help of the formula- $C \times \frac{9}{5} + 32$.

37. Which of the following pair is INCORRECT?



- I. Parsec - Distance
 II. Barrel - Liquid
 III. Light year - Time
 A. Only III B. Only I and III
 C. Only II D. All are correct

Ans. A

Sol. Light year is the measure of distance and not that of time. It actually means the distance which the light can cover in a year. Based on the definition, one light year equals to 95×10^{11} Kilometers.

38. What is the SI unit of Power?

- A. Boyle B. Watt
 C. Newton D. Pascal

Ans. B

Sol. The SI unit of power is called as Watt. This unit is equal to one per joule per second. Moreover the dimension of power involves that energy is divided by time.

39. _____ acts as a shield absorbing ultraviolet radiation from the sun.

- A. Chlorofluorocarbons
 B. Stratosphere
 C. Greenhouse
 D. All of these

Ans. B

Sol. The **ozone layer or ozone shield is a region of Earth's stratosphere** that absorbs most of the Sun's ultraviolet radiation.

- Ozone is located in the stratosphere because ozone is unstable, ultraviolet light quickly breaks it up and it get concentrated in the area of stratosphere layer.

- That's why, in this question according to the options, Stratosphere is the correct answer.

40. Kelvin (K) is the unit of measurement of _____.

- A. Density B. Pressure
 C. Mass D. Temperature

Ans. D

Sol. Kelvin (K) is the unit of measurement of Temperature.

- The **absolute zero of kelvin scale** is the the temperature at which all thermal

motion ceases in the classical description of thermodynamics.

- When compared to other units of temperature measurement, 0 K is equivalent to **-273.15°C or -459.67°F.**

41. If the orbit of a planet is an ellipse then what is the point at which the Sun is located called?

- A. Centre B. Circumcentre
 C. Incentre D. Focus

Ans. D

Sol. The orbit of a planet around the Sun is not a perfect circle, it is an ellipse.

- The Sun location is called as the Focus of ellipse.

- A focus is one of the point that determines the shape of an ellipse.

- The distance from focus to any point on the ellipse is always same.

42. The sliding friction is _____ than the static friction.

- A. double B. same
 C. greater D. smaller

Ans. D

Sol. • **Static friction** is the friction that exists between a stationary object and the surface on which it's resting.

- **Sliding friction** refers to the resistance created by any two objects when sliding against each other. This friction is also known as kinetic friction

- The sliding friction is **less** than static friction because of the interlocking of irregularities in the two surfaces.

43. Push or pull of an object is called _____.

- A. Pick B. Lift
 C. Force D. Shut

Ans. C

Sol. Push or pull of an object is called force. For instance: Force of friction between your feet and the ground is yet another example. Also, weight is the force of the earth's gravity exerted on the object concerned.



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44. The attribute _____ specifies (in pixels) the distance between two adjacent cells.

- A. Width B. Height
C. Cellpadding D. Cellspacing

Ans. D

Sol.

- It's the cellspacing which specifies the distance between two cells.
- In such a command attribute, a designer can increase the size of the borders in a table without increasing the margin of what is inside a text box.
- In contrast to this, cellpadding involves increasing the amount of margin inside each cell or box to create more white space around the text area.

45. In a qualitative way, the tendency of undisturbed objects to stay at rest or to keep moving with the same velocity is called _____.

- A. Force B. Acceleration
C. Friction D. Inertia

Ans. D

Sol. Inertia is the resistance of any physical object to any change in its state of motion. This includes changes to the object's speed, direction, or state of rest. Inertia is also defined as the tendency of objects to keep moving in a straight line at a constant velocity. The principle of inertia is one of the fundamental principles in classical physics that are still used to describe the motion of objects and how they are affected by the applied forces on them.

46. The time taken by a pendulum to complete one oscillation is called its?

- A. Maximum speed B. Average speed
C. Time period D. Time interval

Ans. C

Sol. A pendulum is a weight suspended from a pivot so that it can swing freely. When a pendulum is displaced sideways from its resting, equilibrium position, it is subject to a restoring force due to gravity that will accelerate it back toward the equilibrium position. When released, the restoring force acting on the pendulum's

mass causes it to oscillate about the equilibrium position, swinging back and forth. The time for one complete cycle, a left swing and a right swing, is called the period.

47. The strength of a force is usually expressed by its _____.

- A. Motion B. Direction
C. Interaction D. Magnitude

Ans. D

Sol. A force can cause an object with mass to change its velocity (which includes to begin moving from a state of rest), i.e., to accelerate. Force can also be described intuitively as a push or a pull. A force has both magnitude and direction, making it a vector quantity. Magnitude wise it can be strong or weak force. The strength of a force is usually expressed by its magnitude.

48. Who discovered Proton?

- A. Ernest Rutherford
B. Friedrich Miescher
C. Henri Becquerel
D. Henry Cavendish

Ans. A

Sol.

- Proton was discovered by **Ernest Rutherford in 1920.**
- A proton is a subatomic particle, symbol P or p+ with a positive electric charge of +1e elementary charge and mass slightly less than that of a neutron.
- Eugen Goldstein** discovered positively charged particles, but with no clear idea of why they existed or whether they had a wider role. Rutherford correctly identified them as being individually the nucleus of a hydrogen atom.

49. If the speed of an object moving along a straight line is constant, its motion is said to be _____.

- A. Uniform B. Periodic
C. Circular D. Non-uniform

Ans. A

Sol. Uniform motion is defined as the motion of an object in which the object



travels in a straight line and its velocity remains constant along that line as it covers equal distances in equal intervals of time, irrespective of the length of the time. If a body is involved in rectilinear motion and the motion is uniform, then the acceleration of the body must be zero. The motion of a ball rolling down an inclined plane is an example of uniform motion.

50. If the mass of an object is 60 kgs, what will be its weight on the moon? (N=Newton)

- A. 60N B. 600N
C. 98N D. 10N

Ans. C

Sol. Given mass = 60 kg

As we know,

Weight= mass × acceleration due to gravity

On moon the gravity is approx 1/6 as compared to earth that is $9.8/6\text{m/s}^2$

Weight of that object on moon = $60 \times 9.8/6 = 98 \text{ N}$

51. The side mirrors of vehicles are of which type of mirrors?

- A. Convex B. Concave
C. Plane D. Inverted

Ans. A

Sol.

- A convex mirror, diverging mirror, or fish eye mirror, is a curved mirror in which the reflective surface bulges toward the light source
- Convex mirrors reflect light outwards, therefore they are not used to focus light. Such mirrors always form a virtual image. The passenger-side mirror on a car is typically a convex mirror.
- Convex mirrors are preferred in vehicles because they give an upright, though diminished, image. Also, they provide a wider field of view as they are curved outwards.

52. the formula average velocity

= $(u + v) / 2$, u is the _____.

- A. Final velocity
B. Initial displacement
C. Initial velocity
D. Final displacement

Ans. C

Sol. The average velocity of an object is its total displacement divided by the total time taken. In other words, it is the rate at which an object changes its position from one place to another. Average velocity is a Vector quantity. The SI unit is meters per second.

If the beginning and ending velocities for this motion are known, and the acceleration is constant, the average velocity can also be expressed as $(u+v)/2$ where u = initial velocity and v = final velocity

53. The SI unit of acceleration is _____.

- A. Meters per seconds square
B. Meters per second
C. Seconds per meter
D. Seconds per meter squared

Ans. A

Sol. Acceleration, is the rate of change of velocity of an object with respect to time. An object's acceleration is the net result of any and all forces acting on the object, as described by Newton's Second Law. The SI unit for acceleration is metre per second squared (m s^{-2}).

Accelerations are vector quantities (they have magnitude and direction) and add according to the parallelogram law. As a vector, the calculated net force is equal to the product of the object's mass (a scalar quantity) and its acceleration.

54. If the force applied on the object is in the direction opposite to the direction of motion, the speed of the object _____.

- A. increases B. stops
C. decreases D. no effect

Ans. C

Sol. A push or a pull on an object is called a **force**. A force can change the shape and size of an object. Forces applied on an object in the same direction add to one another.

- If the two forces act in the **opposite directions** on an object, the net



force acting on it is the difference between the two forces, it results in a decrease in the speed of the object.

- If the force applied on the object is **in the direction** of its motion, the speed of the object increases.

55. The force of friction between two surfaces will increase if_____.

- A. A layer of lubricant is kept between the two surfaces
- B. The two surfaces are pressed harder
- C. Air gap is created between the two surfaces
- D. Irregularities on both the surfaces are removed

Ans. B

Sol. The way to increase friction is to make the surfaces of two objects more **difficult to slide against** each other.

* This can be done by making the surface rougher or the **two surfaces are pressed harder** or applying more pressure to one of the surfaces.

56. Contact force is another name for _____.

- A. Friction
- B. Magnetic force
- C. Electrostatic force
- D. Muscular force

Ans. A

Sol. A contact force is any force that requires contact to occur.

* When surfaces in contact move relative to each other, the friction between the two surfaces arises.

* So, it can be said that contact force is another name for frictional force.

57. An image that can be obtained on a screen is called _____?

- A. Virtual image
- B. Real image
- C. Inverted image
- D. Erect image

Ans. B

Sol. An image that can be obtained on a screen is called Real Image. Whereas virtual images are not obtained on the screen.

58. The distance-time graph for the motion of an object moving with a constant speed is a _____.

- A. Dot
- B. Circle
- C. Straight Line
- D. Curve

Ans. C

Sol. Distance-time graph determines its speed. It shows us how the distance changes with respect to time. When the object moving with a constant speed, the distance-time graph for the motion of an object is straight line graph.

59. If an object moves in a circular path with uniform _____, its motion is called uniform circular motion.

- A. speed
- B. Time
- C. Velocity
- D. Acceleration

Ans. A

Sol. If an object moves in a circular path with **uniform speed**, its motion is called uniform circular motion. In circular motion object moves in a circle whose direction at any point is given by tangent to that point. In circular motion direction is always changes but magnitude remains same. A circular motion is accelerated motion due to changes in direction, as its velocity does not remains same.

60. The reflection formed by the plane mirror is _____.

- A. vertical inversion
- B. a real image
- C. lateral inversion
- D. an enlarged image

Ans. C

Sol. The reflection formed by the plane mirror is lateral inversion. Due to lateral inversion left side appear right and vice versa, the best example for this phenomena is shaving mirror, in which both side reversed. Plane mirrors are the only type of mirror for which a real object always produces an image that is virtual, erect and of the same size as the object

61. The frictional force exerted by fluids is also called _____.

- A. drag
- B. buoyancy
- C. upthrust
- D. convection

Ans. A

Sol. In fluid dynamics, drag (sometimes called air resistance, a type of friction, or fluid resistance, another type of friction or



fluid friction) is a force acting opposite to the relative motion of any object moving with respect to a surrounding fluid. This can exist between two fluid layers (or surfaces) or a fluid and a solid surface. Unlike other resistive forces, such as dry friction, which are nearly independent of velocity, drag forces depend on velocity. Drag force is proportional to the velocity for a laminar flow and the squared velocity for a turbulent flow. Even though the ultimate cause of a drag is viscous friction, the turbulent drag is independent of viscosity. Drag forces always decrease fluid velocity relative to the solid object in the fluid's path.

62. Convex and concave mirrors are examples of?

- A. plane mirrors
- B. Spherical mirrors
- C. Inverted mirror
- D. Erect mirror

Ans. B

Sol.

- Convex and concave mirrors are example of the spherical mirror.
- If the spherical mirror's inside surface is reflective than it is a concave mirror and if the outside's surface is reflective than it is convex mirror.
- Concave mirror are converging mirror and mostly used by dentist and in the headlight of the car whereas convex mirror are diverging mirror in which image is formed small and virtual images and mainly used as side mirror in vehicles.

63. J.J. Thomson received the Nobel Prize in Physics for his discovery of _____.

- A. Electron
- B. Positron
- C. Proton
- D. Neutron

Ans. A

Sol.

* **J.J. Thomson, An** English physicist who helped revolutionize the knowledge of atomic structure by his discovery of the electron (1897).

* He received the Nobel Prize for Physics in 1906 and was knighted in 1908.

64. TV remote controls work on the principle of _____.

- A. Ultrasonic waves
- B. Laser technology
- C. Bluetooth technology
- D. Infrared waves

Ans. D

Sol.

• TV remote control works on the principle of **Infrared Technology**.

• The IR LED is connected to end of the circuit board and emits infrared light which is sensed by the sensor placed at the receiver of the TV.

• The receiver at the TV end generally consists of a TSOP receiver, which receives the IR signal at 38 KHz.

65. _____ codified the first two laws of thermodynamics and deducted that the absolute zero of temperature is - 273.15°C. He was honored for this with the naming of the Kelvin temperature scale.

- A. William crookes
- B. William Thomson
- C. Luis Alvarez
- D. Robert Hooke

Ans. B

Sol.

• **William Thomson** codified the first two laws of thermodynamics and also deducted -273.15oC as absolute zero temperature.

• He was awarded by the title of knighthood in 1866 by Queen Victoria.

66. TV remote controls work on the principle of _____.

- A. Ultrasonic waves
- B. Laser technology
- C. Bluetooth technology
- D. Infrared waves

Ans. D

Sol.

• TV remote control works on the principle of **Infrared Technology**.

• The IR LED is connected to end of the circuit board and emits infrared light which is sensed by the sensor placed at the receiver of the TV.



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- The receiver at the TV end generally consists of a TSOP receiver, which receives the IR signal at 38 KHz.

67. The energy derived from the heat of Earth is called _____.

- A. Biogas
- B. Geothermal Energy
- C. Solar Energy
- D. Tidal Energy

Ans. B

Sol.

- **Biogas**-the Gas prepared from Bio waste such as cow dung, household wastes etc.
- **Geothermal Energy**-the energy derived from heat of Earth.
- **Solar Energy**- Energy derived through direct Sunlight
- **Tidal Energy**-conversion of energy of tides into power.

68. About 70% of the sun is made up of _____.

- A. Helium
- B. Oxygen
- C. Carbon
- D. Hydrogen

Ans. D

Sol.

• **The sun is composed of of the sun is 75 percent hydrogen and 25 percent helium** by mass.

- The temperature of the sun's surface is about 10,340 degrees.
- The source of sun's energy is the nuclear fusion of hydrogen atoms.

69. What is the unit of measure of a magnetic field?

- A. Tesla
- B. Ohm
- C. Cobalt
- D. Ampere

Ans. A

Sol.

• **Tesla is the unit of Magnetic field.**

- One tesla is equal to one weber per square metre.
- Nicola Tesla is best known for his contributions to the design of the modern alternating current (AC) electricity supply system.

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