

SSC CGL Physics PYQ Master Set

Physics – SSC CGL Exam: Topic Overview & Key Concepts

Physics is a key component of the General Awareness section in SSC CGL, where 2–3 questions are commonly asked. These questions are usually concept-based or fact-based and come directly from NCERT Level 6–10. Here's how to prepare efficiently:

Important Areas to Study:

- Units & Measurements
- Motion and Laws of Motion
- Work, Power, Energy
- Gravitation
- Sound and Waves
- Light and Optics
- Electricity and Magnetism
- Heat and Thermodynamics
- Modern Physics (Radioactivity, Nuclear Energy)
- Important Inventions and Inventors in Physics

Core Concepts to Focus On:

- Basic SI Units and dimensional formulas
- Newton's Laws and equations of motion
- Reflection, refraction, and types of lenses
- Ohm's Law, resistors in series and parallel
- Properties of sound waves – frequency, wavelength
- Heat transfer modes – conduction, convection, radiation
- Energy forms – Kinetic and Potential Energy
- Basics of nuclear physics and electromagnetic waves

A clear understanding of these basics with practice of previous year questions ensures accuracy and speed.

Q.1) What is the SI unit of force?

Answer : Newton

Explanation: The SI unit of force is named after Sir Isaac Newton, and it is defined as the force required to accelerate a mass of 1 kg by 1 m/s^2 .

Q.2) Which of the following is not a vector quantity?

Answer : Speed

Explanation: Speed has only

magnitude, not direction, whereas vector quantities have both magnitude and direction.

Q.3) Which device is used to measure atmospheric pressure?

Answer : Barometer

Explanation: A barometer is an instrument used to measure atmospheric pressure, invented by Torricelli.



Q.4) The image formed by a plane mirror is:

Answer : Virtual and erect

Explanation: A plane mirror always forms a virtual, erect, and laterally inverted image of the same size as the object.

Q.5) Which law states that the current through a conductor is directly proportional to the voltage across it?

Answer : Ohm's Law

Explanation: Ohm's Law states that $V = IR$, where V is voltage, I is current, and R is resistance.

Q.6) What type of lens is used to correct myopia?

Answer : Concave lens

Explanation: Myopia (short-sightedness) is corrected using a concave lens which diverges light rays before they enter the eye.

Q.7) The loudness of sound depends on its:

Answer : Amplitude

Explanation: Greater the amplitude of the sound wave, louder is the sound.

Q.8) Which physical quantity is measured in Joules?

Answer : Energy

Explanation: Energy is measured in Joules (J) in the SI system.

Q.9) Which phenomenon is responsible for the formation of a rainbow?

Answer : Dispersion of light

Explanation: A rainbow forms due to the dispersion, refraction, and internal reflection of light in water droplets.

Q.10) What is the speed of light in vacuum?

Answer : 3×10^8 m/s

Explanation: The speed of light in vacuum is approximately 3×10^8 meters per second.

Q.11) Which law explains the reason why a person moves forward when a bus stops suddenly?

Answer : Newton's First Law

Explanation: Newton's First Law (Law of Inertia) states that an object in motion remains in motion unless acted upon by an external force.

Q.12) What is the unit of electric current?

Answer : Ampere

Explanation: The SI unit of current is Ampere (A), which represents one coulomb per second.

Q.13) Which mirror is used in the headlights of vehicles?

Answer : Concave mirror

Explanation: Concave mirrors are used to produce a parallel beam of light for better visibility.

Q.14) What is the phenomenon of bending of light around obstacles called?

Answer : Diffraction

Explanation: Diffraction refers to the bending of light waves around the edges of an obstacle.

Q.15) Which color has the shortest wavelength?

Answer : Violet

Explanation: Violet has the shortest wavelength and highest frequency in visible light spectrum.

Q.16) The unit of pressure is:

Answer : Pascal

Explanation: Pressure is defined as force per unit area and measured in Pascals (Pa) in SI units.



Q.17) Which metal is used in thermometers due to its high thermal conductivity?

Answer : Mercury

Explanation: Mercury is used in thermometers because it expands uniformly with temperature and is easily visible.

Q.18) Which instrument is used to measure electric current?

Answer : Ammeter

Explanation: An ammeter is connected in series with the circuit to measure electric current.

Q.19) The energy possessed by a body due to its motion is called:

Answer : Kinetic Energy

Explanation: Kinetic energy depends on the mass and velocity of the object.

Q.20) The resistance of a wire depends on:

Answer : Length, area, and material

Explanation: Resistance is given by $R = \rho \frac{l}{A}$, where ρ is resistivity, l is length, and A is cross-sectional area.

Q.21) Which of the following phenomena confirms the wave nature of light?

Answer : Interference

Explanation: Interference patterns, where light waves superpose to form bright and dark fringes, confirm the wave nature of light.

Q.22) What is the unit of frequency?

Answer : Hertz

Explanation: Frequency is the number of oscillations per second, and it is measured in Hertz (Hz).

Q.23) Which of the following electromagnetic waves has the

highest frequency?

Answer : Gamma rays

Explanation: Gamma rays have the highest frequency and shortest wavelength in the electromagnetic spectrum.

Q.24) Which property of sound is affected by the medium through which it travels?

Answer : Speed

Explanation: The speed of sound varies with the medium — it travels fastest in solids and slowest in gases.

Q.25) Which color of light travels fastest in a vacuum?

Answer : All colors travel at the same speed

Explanation: In a vacuum, all colors of light (wavelengths) travel at the same speed — $3 \times 10^8 \text{ m/s}$.

Q.26) In which medium does sound travel the fastest?

Answer : Solid

Explanation: Sound travels fastest in solids due to closely packed molecules that transmit vibrations more effectively.

Q.27) What is the SI unit of work?

Answer : Joule

Explanation: Work is defined as force \times displacement, and its SI unit is Joule (J).

Q.28) What happens to the resistance of a wire if its length is doubled?

Answer : It doubles

Explanation: Resistance is directly proportional to length; doubling the length doubles the resistance.

Q.29) What is the name of the device that converts electrical energy into mechanical energy?

Answer : Electric motor

Explanation: An electric motor converts electrical energy into mechanical energy through electromagnetic induction.

Q.30) Which instrument is used to detect electric current?

Answer : Galvanometer

Explanation: A galvanometer is a sensitive device used to detect small currents in a circuit.

Q.31) What kind of image is formed by a convex mirror?

Answer : Virtual, diminished, and erect

Explanation: A convex mirror always forms a virtual, erect, and diminished image.

Q.32) The focal length of a concave lens is:

Answer : Negative

Explanation: By convention in optics, concave lenses have negative focal lengths.

Q.33) Which principle is used in the working of a hydraulic press?

Answer : Pascal's Law

Explanation: Pascal's Law states that pressure applied at one point in a confined fluid is transmitted equally in all directions.

Q.34) Which type of energy is stored in a stretched rubber band?

Answer : Potential energy

Explanation: The energy stored due to position or deformation is potential energy.

Q.35) Which part of the eye controls the amount of light entering the eye?

Answer : Iris

Explanation: The iris adjusts the size of

the pupil to control the light entering the eye.

Q.36) Which among the following is a good conductor of heat?

Answer : Copper

Explanation: Copper is a good conductor of heat and electricity, making it ideal for wiring and cookware.

Q.37) What is the frequency of AC current used in India?

Answer : 50 Hz

Explanation: The standard frequency of alternating current in India is 50 hertz.

Q.38) The ozone layer in the atmosphere protects us from which rays?

Answer : Ultraviolet rays

Explanation: The ozone layer absorbs harmful UV radiation from the Sun.

Q.39) Which of the following has the least wavelength?

Answer : Gamma rays

Explanation: Gamma rays have the smallest wavelength among all electromagnetic waves.

Q.40) What is the acceleration due to gravity on the surface of the Earth?

Answer : 9.8 m/s^2

Explanation: This is the standard value for gravitational acceleration near Earth's surface.

Q.41) What is the primary reason for the blue color of the sky?

Answer : Scattering of light

Explanation: Blue light is scattered more than other colors due to its shorter wavelength.

Q.42) Which law of thermodynamics states that energy can neither be created nor destroyed?

Answer : First law

Explanation: The First Law of Thermodynamics is the law of conservation of energy.

Q.43) The speed of sound in air is approximately:

Answer : 343 m/s

Explanation: At room temperature, sound travels in air at about 343 meters per second.

Q.44) Which instrument is used to measure humidity?

Answer : Hygrometer

Explanation: A hygrometer is used to measure the amount of moisture in the air.

Q.45) A body is said to be in uniform motion if it:

Answer : Moves with constant speed in a straight line

Explanation: Uniform motion means equal distances are covered in equal time intervals in a straight line.

Q.46) What type of mirror is used in solar cookers?

Answer : Concave mirror

Explanation: Concave mirrors concentrate sunlight at a point to generate heat for cooking.

Q.47) Which quantity has both magnitude and direction?

Answer : Velocity

Explanation: Velocity is a vector quantity, having both speed and direction.

Q.48) Which property of light explains the formation of shadows?

Answer : Rectilinear propagation

Explanation: Light travels in straight lines, which results in the formation of shadows when objects obstruct it.

Q.49) Which unit is used to measure electrical energy in households?

Answer : Kilowatt-hour

Explanation: One kilowatt-hour (kWh) is the unit used in electric bills, equal to 1000 watts used for 1 hour.

Q.50) When a body is thrown vertically upward, its velocity at the highest point is:

Answer : Zero

Explanation: At the peak of its motion, the vertical velocity becomes zero before reversing direction.

Q.51) What is the unit of electric potential difference?

Answer : Volt

Explanation: Electric potential difference (or voltage) is measured in volts (V).

Q.52) The instrument used to measure temperature is:

Answer : Thermometer

Explanation: A thermometer is used to measure the temperature of a substance or environment.

Q.53) Which property of a body remains constant in uniform circular motion?

Answer : Speed

Explanation: In uniform circular motion, the speed remains constant but the direction changes continuously.

Q.54) What is the unit of power?

Answer : Watt

Explanation: Power is the rate of doing work and is measured in watts (W).

Q.55) What causes the twinkling of stars?

Answer : Atmospheric refraction

Explanation: The twinkling effect



occurs due to the bending of starlight caused by varying air densities.

Q.56) The splitting of white light into its constituent colors is called:

Answer : Dispersion

Explanation: Dispersion occurs when white light is separated into its component colors by a prism or raindrop.

Q.57) Who discovered the laws of motion?

Answer : Newton

Explanation: Sir Isaac Newton formulated the three fundamental laws of motion.

Q.58) In an electric bulb, the filament is made up of:

Answer : Tungsten

Explanation: Tungsten is used due to its high melting point and ability to emit bright light when heated.

Q.59) Which type of wave can travel through a vacuum?

Answer : Electromagnetic waves

Explanation: Unlike sound waves, electromagnetic waves (like light) do not need a medium to propagate.

Q.60) The time taken to complete one oscillation is called:

Answer : Time period

Explanation: The time period is the duration of one complete cycle of vibration or oscillation.

Q.61) Which physical quantity is measured in coulombs?

Answer : Electric charge

Explanation: The SI unit of electric charge is the coulomb (C).

Q.62) A transformer works on the principle of:

Answer : Electromagnetic induction

Explanation: Transformers transfer electrical energy between circuits using electromagnetic induction.

Q.63) Which of the following is a non-renewable source of energy?

Answer : Coal

Explanation: Coal is a fossil fuel and cannot be renewed in a short time.

Q.64) What is the energy transformation in an electric iron?

Answer : Electrical to heat energy

Explanation: An electric iron converts electrical energy into heat to press clothes.

Q.65) Which gas is filled in electric bulbs?

Answer : Argon

Explanation: Inert gases like argon are used to prevent oxidation of the filament and increase its life.

Q.66) Which device converts sound energy into electrical energy?

Answer : Microphone

Explanation: A microphone converts sound waves into electrical signals.

Q.67) What is the speed of sound in water?

Answer : Approximately 1500 m/s

Explanation: Sound travels faster in water than in air due to higher density.

Q.68) The minimum distance for clear vision for a normal human eye is:

Answer : 25 cm

Explanation: The near point of a healthy human eye is about 25 cm.

Q.69) What does the slope of a velocity-time graph represent?

Answer : Acceleration

Explanation: The slope of a velocity-



time graph indicates the rate of change of velocity, i.e., acceleration.

Q.70) What happens when light passes from air into water?

Answer : It bends towards the normal

Explanation: Light slows down in a denser medium, causing it to bend towards the normal due to refraction.

Q.71) Which part of the ear helps in maintaining balance?

Answer : Inner ear

Explanation: The vestibular system in the inner ear is responsible for balance and orientation.

Q.72) A fuse wire is made of:

Answer : Tin and lead

Explanation: A fuse wire has low melting point alloys like tin and lead to break the circuit during overload.

Q.73) Which law of physics is used in rocket propulsion?

Answer : Newton's Third Law

Explanation: Every action has an equal and opposite reaction – the rocket pushes gas backward to move forward.

Q.74) What is the function of a capacitor in an electric circuit?

Answer : To store electric charge

Explanation: A capacitor stores and releases electrical energy in a circuit.

Q.75) Which among the following has the highest refractive index?

Answer : Diamond

Explanation: Diamond has the highest known natural refractive index, hence sparkles more.

Q.76) Which form of energy is possessed by water stored in a dam?

Answer : Potential energy

Explanation: Stored water at height has gravitational potential energy.

Q.77) The resistance of an ideal voltmeter is:

Answer : Infinite

Explanation: An ideal voltmeter has infinite resistance so that it doesn't draw current.

Q.78) What does a convex lens do to parallel rays of light?

Answer : Converges them

Explanation: A convex lens focuses parallel rays to a point (the focus).

Q.79) What is the function of a commutator in a DC motor?

Answer : To reverse current direction

Explanation: A commutator reverses current in the coil to maintain rotational motion.

Q.80) What is the principle behind sonar?

Answer : Reflection of sound waves

Explanation: SONAR uses echo-location by reflecting sound waves off underwater objects.

Q.81) The relation between mass and energy is given by:

Answer : $E=mc^2$

Explanation: Einstein's mass-energy equivalence shows energy and mass are interchangeable.

Q.82) What is used to reduce friction in machines?

Answer : Lubricants

Explanation: Lubricants create a thin film between surfaces, reducing direct contact and friction.

Q.83) Which lens is used in magnifying glasses?

Answer : Convex lens



Explanation: Convex lenses magnify objects by converging light rays.

Q.84) Which of the following is not a property of a magnet?

Answer : Cannot attract non-metals

Explanation: Magnets attract materials like iron, cobalt, and nickel, not non-metals.

Q.85) A periscope works on the principle of:

Answer : Reflection of light

Explanation: A periscope uses plane mirrors to reflect light and allow viewing from hidden positions.

Q.86) In which direction does heat flow?

Answer : From higher temperature to lower temperature

Explanation: Heat flows naturally from a hot object to a cold one.

Q.87) The device used to convert solar energy into electrical energy is:

Answer : Solar cell

Explanation: Solar cells (photovoltaic cells) convert sunlight directly into electricity.

Q.88) What causes tides in the ocean?

Answer : Gravitational pull of moon

Explanation: Tides are mainly due to the gravitational attraction between the Moon and Earth.

Q.89) Which mirror is used by dentists to examine teeth?

Answer : Concave mirror

Explanation: Concave mirrors provide a magnified and erect image for better examination.

Q.90) The strength of an electromagnet can be increased by:

Answer : Increasing the number of turns

in the coil

Explanation: More turns mean more magnetic field lines, increasing strength.

Q.91) What is the angle of incidence if the reflected ray is perpendicular to the incident ray?

Answer : 45°

Explanation: When reflected and incident rays are at 90° , angle of incidence = angle of reflection = 45° .

Q.92) The sound cannot travel through:

Answer : Vacuum

Explanation: Sound requires a material medium to propagate; it cannot travel through a vacuum.

Q.93) What is the unit of magnetic field strength?

Answer : Tesla

Explanation: Tesla (T) is the SI unit for measuring magnetic field strength.

Q.94) What happens to the kinetic energy when the velocity is doubled?

Answer : It becomes four times

Explanation: Kinetic energy $KE = \frac{1}{2}mv^2$; doubling velocity increases KE by four times.

Q.95) Which among the following is a scalar quantity?

Answer : Temperature

Explanation: Temperature has only magnitude, not direction – it's a scalar quantity.

Q.96) The image formed on the retina of the human eye is:

Answer : Real and inverted

Explanation: The lens in our eye focuses a real and inverted image on the retina.



Q.97) Which of the following is used to produce electricity in nuclear power plants?

Answer : Uranium

Explanation: Uranium-235 is commonly used as fuel in nuclear fission reactors.

Q.98) The process of heat transfer without a medium is:

Answer : Radiation

Explanation: Radiation can transfer heat through a vacuum (e.g., Sun's heat reaching Earth).

Q.99) What is the mechanical advantage of an ideal machine?

Answer : 100% (or 1)

Explanation: An ideal machine has no energy loss; mechanical advantage equals 1 (100% efficiency).

Q.100) Which part of the electromagnetic spectrum is used in television remote controls?

Answer : Infrared rays

Explanation: Infrared signals are used in remote controls as they can be easily directed and are safe.

Q.101) What is the phenomenon of a pencil appearing bent in water called?

Answer : Refraction

Explanation: Refraction causes the pencil to appear bent due to the change in speed of light as it passes from air to water.

Q.102) What is the SI unit of pressure energy?

Answer : Pascal

Explanation: Pressure is measured in Pascals (Pa), which equals one Newton per square meter.

Q.103) What happens to light when it hits a rough surface?

Answer : Diffused reflection

Explanation: Rough surfaces scatter light in different directions, causing diffused reflection.

Q.104) What is the standard atmospheric pressure at sea level?

Answer : 101.325 kPa

Explanation: One atmosphere is defined as 101.325 kilopascals of pressure.

Q.105) Which component of an electric circuit is used to break the flow of current?

Answer : Switch

Explanation: A switch is used to open or close the electric circuit.

Q.106) What happens to the potential energy of a falling object?

Answer : It is converted into kinetic energy

Explanation: As the object falls, its height decreases and potential energy converts into kinetic energy.

Q.107) Which part of the electromagnetic spectrum is used for sterilization?

Answer : Ultraviolet rays

Explanation: UV rays kill bacteria and are commonly used for sterilization.

Q.108) What is the main cause of earthquakes?

Answer : Movement of tectonic plates

Explanation: Sudden movement of Earth's crust along faults causes earthquakes.

Q.109) What kind of lens is used in a telescope?

Answer : Convex lens

Explanation: Telescopes use convex lenses or mirrors to magnify distant objects.



Q.110) What is the unit of gravitational potential energy?

Answer : Joule

Explanation: Like all energy, gravitational potential energy is measured in joules.

Q.111) Which liquid metal is used in barometers and thermometers?

Answer : Mercury

Explanation: Mercury is used due to its high density and predictable expansion.

Q.112) Which of the following physical quantities is a vector?

Answer : Acceleration

Explanation: Acceleration has both magnitude and direction, hence it's a vector.

Q.113) What is the maximum displacement from mean position in an oscillation called?

Answer : Amplitude

Explanation: Amplitude is the maximum extent of vibration from the equilibrium position.

Q.114) In a vacuum, which wave will not propagate?

Answer : Sound wave

Explanation: Sound requires a medium; it cannot travel in a vacuum.

Q.115) The temperature at which both Celsius and Fahrenheit scales read the same is:

Answer : -40°

Explanation: At -40° , both Celsius and Fahrenheit thermometers give the same reading.

Q.116) What happens to the boiling point of water at higher altitudes?

Answer : It decreases

Explanation: Lower atmospheric

pressure at higher altitudes reduces the boiling point.

Q.117) Which force is responsible for holding planets in orbit around the sun?

Answer : Gravitational force

Explanation: The Sun's gravity keeps planets in their elliptical orbits.

Q.118) Which instrument measures the electric potential difference between two points?

Answer : Voltmeter

Explanation: A voltmeter measures the voltage across components in a circuit.

Q.119) What type of motion is shown by the Earth around the Sun?

Answer : Revolution

Explanation: Earth's movement around the Sun in an orbit is called revolution.

Q.120) The ability of a body to resist acceleration is called:

Answer : Inertia

Explanation: Inertia is the tendency of an object to resist any change in its motion.

Q.121) What is the unit of wavelength?

Answer : Meter

Explanation: Wavelength is the distance between two consecutive crests or troughs and is measured in meters (m).

Q.122) What is the direction of magnetic field lines outside a bar magnet?

Answer : From North to South

Explanation: Magnetic field lines move from the north pole to the south pole outside the magnet.

Q.123) What is the energy stored in a stretched spring called?

Answer : Elastic potential energy

Explanation: A stretched or compressed spring stores elastic potential energy.

Q.124) What happens to the volume of water when it freezes?

Answer : It increases

Explanation: Unlike most substances, water expands on freezing due to its molecular structure.

Q.125) The ratio of the speed of light in vacuum to that in a medium is called:

Answer : Refractive index

Explanation: Refractive index $n = \frac{c}{v}$, where c is speed of light in vacuum, and v in the medium.

Q.126) What is the SI unit of electric field?

Answer : Volt per meter

Explanation: Electric field is defined as force per unit charge, and its SI unit is V/m.

Q.127) Which of the following is an example of a non-contact force?

Answer : Gravitational force

Explanation: Gravitational force acts at a distance without physical contact.

Q.128) In which process is heat directly transferred through electromagnetic waves?

Answer : Radiation

Explanation: Radiation transfers energy without a medium via electromagnetic waves.

Q.129) What is the phenomenon of light bouncing back from a surface called?

Answer : Reflection

Explanation: When light hits a surface and returns, it is called reflection.

Q.130) Which of the following increases with the rise in temperature?

Answer : Resistance

Explanation: In most conductors, resistance increases with temperature.

Q.131) Which of these uses the principle of total internal reflection?

Answer : Optical fiber

Explanation: Optical fibers transmit light using total internal reflection for communication.

Q.132) What is the acceleration of a free-falling body (ignoring air resistance)?

Answer : 9.8 m/s^2

Explanation: All objects fall with the same acceleration under gravity near the Earth's surface.

Q.133) What happens to the frequency of sound if the source moves closer to the observer?

Answer : It increases

Explanation: This is due to the Doppler effect — the observer perceives a higher frequency.

Q.134) The resistance of a conductor is inversely proportional to its:

Answer : Cross-sectional area

Explanation: $R = \rho \frac{l}{A}$; as area increases, resistance decreases.

Q.135) What is used in electric irons to regulate temperature?

Answer : Thermostat

Explanation: A thermostat switches the heating element on or off to maintain a set temperature.

Q.136) What is the main function of a diode?

Answer : Allows current in one direction



Explanation: Diodes are semiconductor devices that permit current flow in one direction only.

Q.137) What is formed when white light passes through a prism?

Answer : Spectrum

Explanation: A prism disperses white light into a band of colors, forming a spectrum.

Q.138) What is the angle between the magnetic field and the current in a conductor when the force is maximum?

Answer : 90°

Explanation: Magnetic force on a conductor is maximum when the angle is 90° .

Q.139) What type of image is formed by a concave mirror when the object is placed beyond the center of curvature?

Answer : Real, inverted, and diminished

Explanation: The image formed is real, inverted, and smaller in size.

Q.140) Which phenomenon causes the sky to appear red at sunrise and sunset?

Answer : Scattering

Explanation: Longer wavelength red light scatters less and dominates during sunrise and sunset.

Q.141) Which wave property changes when sound moves from air to water?

Answer : Speed

Explanation: Sound travels faster in water due to its higher density; frequency remains unchanged.

Q.142) What is the function of a fuse in an electric circuit?

Answer : To prevent overloading

Explanation: A fuse melts and breaks

the circuit when excess current flows, preventing damage.

Q.143) Which part of a transformer is connected to the input supply?

Answer : Primary coil

Explanation: The primary coil receives input current and generates magnetic flux.

Q.144) What happens to the pressure inside a container when the temperature of the gas is increased?

Answer : It increases

Explanation: According to Gay-Lussac's law, pressure increases with temperature if volume is constant.

Q.145) Which scientist is known for the law of universal gravitation?

Answer : Isaac Newton

Explanation: Newton stated that every mass attracts every other mass with a force proportional to their product and inversely to the square of their distance.

Q.146) Which device is used to measure small currents?

Answer : Galvanometer

Explanation: A galvanometer is sensitive to small currents and detects their presence.

Q.147) What is the color of the Sun when viewed from space?

Answer : White

Explanation: In the absence of atmosphere, sunlight does not scatter and appears white.

Q.148) What is the unit of capacitance?

Answer : Farad

Explanation: Capacitance is the ability to store charge and is measured in farads (F).



Q.149) What kind of waves are X-rays?

Answer : Electromagnetic waves

Explanation: X-rays are a high-energy form of electromagnetic radiation.

Q.150) Which principle is used in the working of electric generator?

Answer : Electromagnetic induction

Explanation: A generator works on the principle of inducing current through changing magnetic fields.

Q.151) The sound produced by a tuning fork is:

Answer : Musical and of definite frequency

Explanation: A tuning fork produces a clear tone at a fixed frequency.

Q.152) Which component is used to store electrical energy?

Answer : Capacitor

Explanation: A capacitor stores energy in the form of an electric field.

Q.153) What is the distance between two successive compressions in a longitudinal wave?

Answer : Wavelength

Explanation: Wavelength is the distance between two similar points in the wave cycle.

Q.154) Which of the following is not an electromagnetic wave?

Answer : Sound wave

Explanation: Sound requires a medium and is mechanical, not electromagnetic.

Q.155) Which device converts electrical energy to sound?

Answer : Loudspeaker

Explanation: A loudspeaker vibrates a diaphragm to convert electric signals into sound.

Q.156) What is the refractive index of air approximately?

Answer : 1

Explanation: Air's refractive index is close to 1, meaning light travels almost as fast in air as in vacuum.

Q.157) What happens to kinetic energy if mass is doubled and velocity is unchanged?

Answer : It doubles

Explanation: $KE = \frac{1}{2}mv^2$; doubling mass doubles KE.

Q.158) Which law states that equal volumes of all gases contain equal number of molecules at same temperature and pressure?

Answer : Avogadro's Law

Explanation: Avogadro's law applies to ideal gases under constant temperature and pressure.

Q.159) What is the function of the retina in the human eye?

Answer : To form the image

Explanation: The retina contains photoreceptor cells that capture light and send signals to the brain.

Q.160) What is the scientific principle behind pressure cookers?

Answer : Boiling point increases with pressure

Explanation: Increased pressure raises the boiling point, cooking food faster.

Q.161) Which of the following instruments uses atmospheric pressure?

Answer : Barometer

Explanation: A barometer measures atmospheric pressure using mercury.

Q.162) Which component in an electric circuit opposes the change in



current?

Answer : Inductor

Explanation: Inductors resist changes in current by generating an opposing EMF.

Q.163) What is a scalar quantity among the following?

Answer : Work

Explanation: Work has magnitude only; no direction, so it's scalar.

Q.164) What is the unit of electric charge?

Answer : Coulomb

Explanation: A coulomb is the SI unit of charge, defined as the charge transported by 1 ampere in 1 second.

Q.165) The spark in an electric lighter is due to:

Answer : Piezoelectric effect

Explanation: A crystal like quartz generates voltage when mechanically stressed.

Q.166) Which of the following is used to detect radiation?

Answer : Geiger-Muller counter

Explanation: This instrument detects and measures ionizing radiation.

Q.167) Which wave property remains constant when a wave crosses the boundary into a new medium?

Answer : Frequency

Explanation: The frequency of a wave does not change across mediums.

Q.168) Why are metals good conductors of electricity?

Answer : Free electrons

Explanation: Free-moving electrons in metals carry current easily.

Q.169) What happens to current when resistance increases in a circuit with

constant voltage?

Answer : It decreases

Explanation: $I = \frac{V}{R}$; if resistance increases, current decreases.

Q.170) Which law is related to buoyancy?

Answer : Archimedes' Principle

Explanation: It explains the upward force on objects immersed in fluids.

Q.171) Which type of motion do the blades of a fan exhibit?

Answer : Rotational motion

Explanation: The blades rotate around a central axis.

Q.172) The brightness of a bulb depends on:

Answer : Power

Explanation: Higher power means higher brightness due to more energy release.

Q.173) Which rays have the longest wavelength?

Answer : Radio waves

Explanation: Radio waves have the longest wavelength and lowest frequency.

Q.174) What happens to current in a series circuit when more resistors are added?

Answer : It decreases

Explanation: Total resistance increases, hence current decreases.

Q.175) In sound waves, particles of the medium move:

Answer : Parallel to wave propagation

Explanation: In longitudinal waves like sound, particles vibrate parallel to the direction of wave.



Q.176) The bending of light around edges is called:

Answer : Diffraction

Explanation: Light bends around obstacles, creating fringe patterns due to diffraction.

Q.177) Why does a black object heat up faster in sunlight?

Answer : It absorbs more radiation

Explanation: Dark colors absorb more light and hence more heat.

Q.178) What determines the pitch of a sound?

Answer : Frequency

Explanation: Higher frequency means higher pitch.

Q.179) Which phenomenon helps bats to fly in darkness?

Answer : Echolocation

Explanation: Bats emit sound waves and detect objects by the echoes that return.

Q.180) Which circuit has only one path for current flow?

Answer : Series circuit

Explanation: In series, all components share a single path for current.

Q.181) What type of wave is light?

Answer : Transverse

Explanation: Light waves oscillate perpendicular to the direction of propagation.

Q.182) Which of the following is not a source of energy?

Answer : Plastic

Explanation: Plastic is not an energy source.

Q.183) How does sound intensity change with distance?

Answer : It decreases

Explanation: Sound spreads and loses energy over distance.

Q.184) The resistance of a wire is directly proportional to:

Answer : Length

Explanation: $R = \rho \frac{L}{A}$, so longer wire = more resistance.

Q.185) Which part of a nuclear reactor controls fission rate?

Answer : Control rods

Explanation: Control rods absorb neutrons to regulate the fission chain reaction.

Q.186) Which instrument is used to measure pressure in fluids?

Answer : Manometer

Explanation: A manometer compares fluid pressure to atmospheric pressure.

Q.187) Which type of mirror is used in rear-view mirrors?

Answer : Convex mirror

Explanation: Convex mirrors give a wider field of view.

Q.188) What type of image does a pinhole camera produce?

Answer : Inverted and real

Explanation: The image is formed due to light traveling in straight lines.

Q.189) The minimum energy required to remove an electron from an atom is called:

Answer : Ionization energy

Explanation: Ionization energy is needed to overcome attraction and free an electron.

Q.190) What is the function of a battery in a circuit?

Answer : Provide electrical energy

Explanation: A battery creates potential difference to drive current.



Q.191) The time between two consecutive crests is:

Answer : Time period

Explanation: Time period is the time for one complete wave cycle.

Q.192) Which color is least scattered by the atmosphere?

Answer : Red

Explanation: Red has the longest wavelength and scatters the least.

Q.193) What kind of lens is used to treat hypermetropia?

Answer : Convex lens

Explanation: Convex lens converges light to correct farsightedness.

Q.194) What type of motion does a projectile exhibit?

Answer : Parabolic

Explanation: A projectile follows a curved path under gravity.

Q.195) Which law relates to the conservation of momentum?

Answer : Newton's Third Law

Explanation: Action and reaction lead to momentum conservation in isolated systems.

Q.196) What causes rainbow formation in the sky?

Answer : Dispersion and total internal reflection

Explanation: Light undergoes refraction, dispersion, and reflection in water droplets.

Q.197) Which radiation is used in night vision equipment?

Answer : Infrared

Explanation: Infrared is emitted as heat and detected by night vision devices.

Q.198) The power consumed in an electric circuit is given by:

Answer : $P = VI$

Explanation: Power is the product of voltage and current.

Q.199) What is the reciprocal of resistance called?

Answer : Conductance

Explanation: Conductance $G = \frac{1}{R}$, measured in Siemens.

Q.200) Which physical quantity changes with a change in temperature of a substance?

Answer : Volume

Explanation: Most substances expand or contract with temperature changes.

