

Important Physics Q/A PDF for SSC CGL/CHSL/RRB NTPC Exam

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1.Light rays enter the eye through the outer, transparent structure at the front of the eye called the _____.

- A. Lens
- B. Iris
- C. Cornea
- D. Optic nerve

Ans. C

Sol.

• Light rays enter the eye through the outer, transparent structure at the front of the eye called **Cornea.**

• The cornea serves as a protective covering for the front of the eye and also helps focus light on the retina at the back of the eye.

2. What is the SI unit of pressure?

- A. Ohm
- B. Pascal
- C. Volt
- D. Ampere

Ans. B

Sol.

• The Pascal is the SI unit of pressure.

• The unit, named after Blaise Pascal.

• It is defined as one newton per square metre.

3. Which force helps swimmers float in water?

- A. Muscular force
- B. Frictional force
- C. Buoyant force
- D. Magnetic force

Ans. C

Sol.

Buoyant forces help swimmers float in water.

* The buoyant force acts through the center of buoyancy, which is the centroid of the immersed part of the object - this is the volume of water that is displaced by the object.

* Note here that for balancing body in swimming the buoyancy force must pass through the center of mass.

* There are major four forces that apply to swim that are- **the Buoyant Force**, **Weight, Drag Force and Thrust Force**. * There are four major techniques used for swimming. They are- **Front Crawl** (freestyle), Breaststroke, Backstroke, and Butterfly stroke.

4.Hertz is the SI unit of which of the following?

- A. Frequency
- B. Force
- C. Pressure
- D. Energy

Ans. A

Sol.

• The hertz is the derived unit of frequency in the International System of Units (SI).

- It is defined as cycles per one second.
- It is named after Heinrich Rudolf Hertz.

• Heinrich Rudolf Hertz was the first person to provide conclusive proof of the existence of electromagnetic waves.

5. Who among the following coined the term "battery" to describe linked capacitors?

A. Benjamin Franklin

- B. Luigi Galvani
- C. John Frederic Daniell
- D. Lewis Urry

Ans. A

Sol.

* **In 1749, Benjamin Franklin** coined the term "battery" to describe linked capacitors.

* As an inventor, Benjamin Franklin is known for the lightning rod, bifocals, and the Franklin stove, among other inventions.

* He was an American Scientist.

* **Batteries** are a collection of one or more cells whose chemical reactions create a flow of electrons in a circuit.

6.What is the heat generated (in J) in a heating element of resistance 900 Ω when a current of 0.3 A passes through it for 10 seconds? A. 2700

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B. 810 C. 405 D. 1350

Ans. B

Sol. The heating effect produced by an electric current I through a conductor of resistance R for a time t is given by

 $\mathbf{H} = \mathbf{I}^2 \mathbf{R} \mathbf{t}$

Here I = 0.3A ; R - 900 ohm ; t= 10 seconds H= $.3 \times .3 \times 900 \times 10$

H= 810 J

7.The phenomenon which causes mirage is_____.

- A. Total internal reflection
- B. Diffraction
- C. Polarisation
- D. Interference

Ans. A

Sol.

• The phenomenon which causes mirage is Total internal reflection.

• A Mirage is an optical phenomemon or an optical illusion caused due to refraction of light.

• Mirage happens in desert areas where people see water near the horizon and try to get it, but as they go closer, water goes further. This is because actually there is no water.

8.If a star is bigger than Sun, but not more than twice as big, it will turn into a

A. Pulsar

- B. Maxima
- C. Avenger
- D. Discover

Ans. A Sol.

• A **pulsar** is a highly magnetized, rotating neutron star (white dwarf) that emits a beam of electromagnetic radiation. They are spherical, compact objects that are about the size of a large city but contain more mass than the sun. They are used to study extreme states of matter, search for planets beyond Earth's solar system and measure cosmic distances.

• Pulsars also could help scientists find gravitational waves.

• If a star is bigger than Sun, but not more than twice as big, when it collapses then it will turn into a Pulsar.

9.The slope of a Distance-Time graph shows

- A. Acceleration
- B. Momentum
- C. Mass
- D. Speed

Ans. D

Sol. • The slope of a Distance-Time graph shows speed in a particular direction.

Slope represents as the ratio of the change in y axis to the corresponding change in x axis.

10.Law of gravitation applies to

A. Any pair of bodies

- B. The earth and the moon
- C. The planets around the Sun
- D. The earth and the objects on earth

Ans. A

Sol. Newton's law of universal gravitation applies to any pair of bodies. It states that a particle attracts every other particle in the universe using a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between their centers.

11.The energy in reflected light

A. does not depends on the angle of incidence

B. increases with the increase in angle

C. decreases with the increase in angle of incidence

D. becomes maximum for angle of incidence equal to 45 °

Ans. B

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Sol.

• The amount of incident-wave energy that is reflected from a surface depends on the nature of the surface and the angle at which the wave strikes the surface.

• The amount of wave energy reflected increases as the angle of incidence increases.

12. The dimensional formula for universal gravitational constant is

A. $M^{-1}L^{3}T^{2}$

B. M L²T⁻²

C. M⁻²

D. M⁻¹L³T⁻²

Ans. D

Sol.

• The gravitational constant, approximately 6.674×10–11 Nm2/kg2.

• It usually appears inNewton's law of universal gravitation, and in Albert Einstein's general theory of relativity.

• It is also known as the universal gravitational constant.

• The dimensional formula for universal gravitational constant is **M**⁻¹**L**³**T**⁻².

13.Atmospheric pressure is measured by

- A. Barometer
- B. Hexameter
- C. Nanometer
- D. Glaxometer

Ans. A

Sol. Atmospheric pressure is measured by barometer. Barometer was invented by Evangelista Torricelli in the year 1643. Atmospheric pressure changes with distance above or below sea level, **a barometer** can also be used to measure altitude.

14.What are the two kinds of Rotatory motion?

A. Spin and Vibrational motion

B. Spin and Orbital motion

- C. Spin and Translatory motion
- D. Spin and Projectile motion

Ans. B

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Sol. Two kinds of Rotatory motion are Spin and Orbital motion. However in a rotational motion an object moves around an axis passing through its body. Say the rotation of earth, earth rotates around an axis passing through both of its poles(north pole and south pole).

15.Who invented the contact lens?

- A. Enrico Fermi
- B. Adolf Gaston Eugen Fick
- C. Sandford Fleming
- D. Benoit Fourneyron

Ans. B

Sol. Adolf Gaston Eugen Fick invented the contact lens. He was a German ophthalmologist. In 1888, he constructed and fitted what was to be considered the first successful model of a contact lens: an afocal scleral contact shell made from heavy brown glass, which he tested first on rabbits, then on himself, and lastly on a small group of volunteers.

16.

Which of the following is caused by atmospheric refraction of light ?

- A. Mirage
- B. Twinkling of stars at night
- C. Sun appearing higher in the sky than it actually is
- D. All of these

Ans. D Sol. All of these are caused by atmospheric refraction of light.

17.Elasticity of demand with respect to price is

 $= \frac{\% \text{ change in demand}}{\% \text{ change in price}}$ A. elasticity $= \frac{\% \text{ change in price}}{\% \text{ change in demand}}$ B. elasticity $= \frac{\% \text{ change in demand}}{\% \text{ change in supply}}$

C. elasticity



= $\frac{\% \text{ change in supply}}{\% \text{ change in price}}$

D. elasticity

Ans. A

Sol. Price elasticity of demand (PED or Ed) is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price. The formula for the coefficient of price elasticity of demand for a good is

$$\frac{dQ / Q}{dP / P}$$

: $e_{(R)}$ where $e_{(R)} =$ Elasticity of demand; dQ/Q = % change in demand and dP / P = % change in price

18.Who Invented Induction Coil?

A. Edwin Howard Armstrong

B. John Barber

- C. Edwin Beard Budding
- D. Nicholas Callan

Ans. D

Sol.

• Nicholas Callan invented the Induction Coil.

• It is the first type of transformer and used to produce high-voltage pulses from a low-voltage direct current (DC) supply. To create the flux changes necessary to induce a voltage in the secondary coil, the direct current in the primary coil is repeatedly interrupted by a vibrating mechanical contact called an interrupter.

19.The motion of a body that repeats itself after a regular interval of time is

- A. Periodic motion
- B. Simple harmonic motion
- C. Rotary motion
- D. Oscillatory motion

Ans. A

Sol. **Periodic motion**, in physics, **motion** repeated in equal intervals of time. **Periodic motion** is performed, for example, by a rocking chair, a bouncing ball, a vibrating tuning fork, a swing in **motion**, the Earth in its orbit around the Sun, and a water wave. 20.For every action, there is an equal and opposite reaction, is Newton's

- A. First law
- B. Second law
- C. Third law
- D. Fourth law
- Ans. C
- Sol.

• For every action, there is an equal and opposite reaction is Isaac newton's third law of motion.

• However the third law states that when one body exerts a force on a second body, the second body simultaneously exerts a force equal in magnitude and opposite in direction on the first body.

• In totality he has given three laws relating to the motion of the body and forces acting upon it.

21. Which of the following is the SI unit of temperature?

- A. Kelvin
- B. Reaumur scale
- C. Candela
- D. Ampere

Ans. A Sol.

a) Kelvin is the SI unit of the temperature and it is represented by 'K'.
b) 0 kelvin = 273.15 degree celsius.

c) The degree or intensity of heat present in a substance or object, especially as expressed according to a comparative scale is called temperature.

22. The audible range of sound for an average adult human being is _____.

- A. 2 Hz 20000 Hz
- B. 2 Hz 2000 Hz
- C. 20 Hz 2000 Hz
- D. 20 Hz 20000 Hz

Ans. D Sol.

a) 20Hz- 20000Hz is the audible range of sound for an average adult human being.
b) Human infants can actually hear frequencies slightly higher than 20

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kHz, but lose some high-frequency sensitivity as they mature and the upper limit in **average adults** is often closer to 15-17 kHz.

c) The SI unit of audio frequency is the hertz (Hz).

23. The waves used in radar systems are waves.

- A. ultraviolet
- B. infrared
- C. micro
- D. radio

Ans. D

Sol.

a) Radio waves are used in Radar systems. The full form of **RADAR** is **RAdio Detection And Ranging.**

b) It is a type of a detection system that uses radio waves to determine the range, angle or velocity of objects.

c) Some other uses of radio waves are broadcasting and television, and navigation and air-traffic control. It is even used in remote-controlled toys.

24.Rusting of iron is an example of

A. combustion

- B. corrosion
- C. evaporation
- D. condensation

Ans. B

Sol.

• Rusting of iron is an example of corrosion.

• The term 'rusting' is generally used to refer to the corrosion of objects that are made of iron or iron-alloys.

• Rust is an iron oxide (a usually red oxide).

• It formed by the redox reaction of iron and oxygen in the presence of water or air moisture.

25. When pressure is applied to a fluid, the pressure change is transmitted to every part of the fluid without any loss. Which one of the following laws explains this phenomenon? A. Hooke's Law

- B. Bernoulli's Law
- C. Avogadro's Law
- D. Pascal's Law

Ans. D

Sol.

The statements of laws given in options are as follows:

Pascal's Law -When pressure is applied to a fluid, the pressure change is transmitted to every part of the fluid without any loss.

Hooke's Law- The force needed to extend or compress a spring by some distance is proportional to that distance.

Bernoulli's Law- An increase in the speed of a fluid occurs simultaneously with a decrease in static pressure or a decrease in the fluid's potential energy.

* Avogadro's Law- The volume of a gas is directly proportional to the amount of gas at a constant temperature and pressure.

26. Which of the following are the highestfrequency electro magnetic waves?

- A. Gamma Rays
- B. Radio Waves
- C. Ultraviolet Rays
- D. Microwaves

Ans. A

Sol. Gamma rays have the highest energies, the shortest wavelengths, and the highest frequencies.

• Radio waves, on the other hand, have the lowest energies, longest wavelengths, and lowest frequencies of any type of electro magnetic radiation.

27.With reference to Remote Sensing Technology, what does LIDAR stand for?

- A. Light Detection and Ranging
- B. Light Direction and Revolving
- C. Light Dimension and Reflection
- D. Light Distraction and Refraction

Ans. A

Sol.

* LIDAR stands for **Light Detection and** Ranging. It is also called 3D laser scanning.

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* It is commonly used to make high-resolution maps.

28.The SI unit of radioactivity

- is____
- A. Ampere
- B. Becquerel
- C. Decibel
- D. Cobolt

Ans. B

Sol.

a) **Becquerel** is the SI unit of radioactivity.

b) 1 becquerel = 1 radioactive decay per second .

c) An older radioactivity unit is the curie (Ci) and named after Pierre and Marie Curie.

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