

# 50+ Physics Questions asked in RRB NTPC 2016 Exam

## Mega PDF



1. The distance from Earth to the sun is measured in \_\_\_\_\_.

- (A) Light years
- (B) Astronomical unit.
- (C) Kelvin
- (D) Joule

A. D

B. A

C. B

D. C

Ans. C

Sol.

\* The distance between Earth and Sun is measured in Astronomical Unit.

\* An Astronomical unit is average distance between Earth and the Sun, which is about 93 million miles or 150 million kilometres.

\* It is used to determine distance between space bodies and it also play vital role in definition of another unit of astronomical length, the Parsec.

\* 1 Astronomical Unit = 4.8 millionths of a parsec = 15.8 millionths of a light year.

2.What is mass per unit volume?

- (A) Force (B) Work
- (C) Density (D) Pressure

A. A

B. C

C. B

D. D

Ans. B

Sol.

\* Mass per unit volume is known as Density.

\* The density of a material varies with temperature and pressure. This variation is typically small for solids and liquids but much greater for gases.

\* The reciprocal of the density of a substance is occasionally called its specific volume.

\* Work is defined as energy transferred when a force moves an object through a distance.

\* Power is defined as rate of doing work or the amount of energy transferred per unit time.

3.Which type of waves is used to penetrate hard objects at hospitals and Airports

- (A) Sound waves
- (B) X-Ray
- (C) Electromagnetic
- (D) Mechanics

A. (A)

B. (B)

C. (D)

D. (C)

Ans. B

Sol.

\* X rays are used to penetrate hard objects at hospitals and Airports.

\* X-rays are electromagnetic radiations having wavelength ranging from 0.01 to 10 nanometers. They are discovered by Wilhelm Rontgen in 1895.

\* Hard X-rays can traverse relatively thick objects without being much absorbed or scattered due to their high penetration power.

\* Hard X-rays are widely used to image the inside of objects, e.g, in medical radiography and airport security.

4.Knife is an example for-

- (A) Lever (B) Wedge
- (C) Inclined plane (D) Pulley

A. (B)

B. (C)

C. (A)

D. (D)

Ans. A

Sol.

\* A wedge is a triangular tool. A knife can be a example of a wedge.

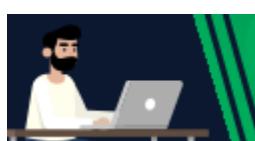
\* Wedge has wide applications such as to separate two objects or portions of an object, lift up an object, or hold an object in place.

\* Axe is fine example of a wedge. Other examples of wedges are found in drill bits, which produce circular holes in solids.

\* Dividing the height of the wedge by the wedge's width gives the mechanical advantage of a wedge.

5.Freely suspended magnet always stays in the direction?

- (A) East West



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- (B) North South  
(C) East North  
(D) West South

- A. (C)  
B. (A)  
C. (B)  
D. (D)

Ans. C

Sol.

- The freely magnet always stays in North South direction. The shape of the Earth's magnetic field resembles that of a bar magnet of length.
- The South Pole of the Earth's magnet is in the geographical North because it attracts the North Pole of the suspended magnet and vice versa.
- The axis of Earth's magnet or the magnetic pole and the geographical axis or geographical pole does no coincide.
- In other words a freely suspended magnet does not show exact geographical South and North it only shows magnetic north and south poles.

6. Study the following statements and choose right option.

- (i) To know this, a star is comes to us or goes too far away.
  - (ii) To know about the drawbacks of internal parts of storerooms of oil and minerals
- (A) (i) and (ii) are applications of resonance principle.  
(B) (i) is from Doppler effect and (ii) is from Reverberation principle  
(C) (i) is reverberation principle and (ii) is Doppler effect.  
(D) (i) and (ii) both are Doppler effect.

- A. (B)

- B. (D)

- C. (A)

- D. (C)

Ans. A

Sol.

- \* Reverberation Principle- A reverberation, or reverb, is created when a sound or signal is reflected causing numerous reflections to build up and then decay as the sound is absorbed by the surfaces of objects in the space.  
\* Doppler effect is an increase/decrease in the frequency of sound, light, or other

waves as the source and observer move towards/away from each other. To know this, a star is comes to us or goes too far away is hence a example to be known by Doppler effect.

7. The theory behind stars twinkling is that \_\_\_\_\_.

- (A) The refractive index of the different layers of earth's atmosphere changes continuously, consequently the position of the star's image changes with time.
- (B) The intensity of light emitted by them changes with time
- (C) The light from the star is scattered by the dust particles and air molecules in the earth's atmosphere
- (D) The distance of the stars from the earth changes with time

- A. (D)

- B. (C)

- C. (B)

- D. (A)

Ans. D

Sol.

- The refractive index of the different layers of earth's atmosphere changes continuously, consequently the position of the star's image changes with time.
- This is the theory behind the twinkling of stars.
- When starlight enters our atmosphere it is affected by winds in the atmosphere and by areas with different temperatures and densities. This causes the light from the star to twinkle when seen from the ground.

8. While watching 3D movies at the theatre, we have to wear special glasses because \_\_\_\_\_.

- (A) The glasses allow our left and right eyes to see different images
- (B) 3-D movies special colors which cannot be sensed by the human eye
- (C) 3-D movies are brighter than ordinary movies and can hurt our eyes if seen directly.
- (D) The glasses allow both the eyes to see similar images

- A. (D)

- B. (A)

- C. (C)



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D. (B)

Ans. B

Sol.

- In 3D movies, two images are projected simultaneously on the screen. One image is horizontally polarised and the other is vertically polarised. That is why, without 3D glasses, the image is blurred.

- The 3D spectacles that we use essentially have two types of polaroid glasses, horizontally polarised for, say, the right eye and vertically polarised for the left eye.

9. Spacecraft needs a speed of over \_\_\_\_\_ to escape Earth's gravity.

- (A) 40,000 km/hr.
- (B) 40,270 km/hr.
- (C) 42,326 km/hr.
- (D) 41,721 km/hr.

A. (B)

B. (A)

C. (C)

D. (D)

Ans. A

Sol.

- A Spacecraft needs a speed of over 40,270 km/hr to escape Earth's gravity.

- The escape velocity is the minimum speed needed for a free, non-propelled object to escape from the gravitational influence of a massive body.

- The escape velocity from Earth is about 11.186 km/s (40,270 km/hr) at the surface.

10. If two plane mirrors are kept at an angle of  $120^\circ$  to each other, then how many images will be formed?

- (A) 3
- (B) 4

- (C) 2
- (D) 6

A. (C)

B. (B)

C. (D)

D. (A)

Ans. A

Sol.

No. of images =  $360/x - 1$

Hence,

$$= 360/120 - 1$$

$$= 3 - 1$$

= 2 images.

11. What will be the effect of a moving lift on a person's mass?

- (A) It will increase
- (B) It will decrease
- (C) It will remain constant
- (D) It may increase or decrease

A. (A)

B. (D)

C. (B)

D. (C)

Ans. D

Sol.

- \* The mass of a person is constant and does not depend upon the movement of lift.

- \* But apparent weight of a person can increase or decrease depends upon the acceleration or deacceleration of lift.

- \* The apparent weight of man can be easily calculated based on newton's laws of motion.

12. Which of the following is not an electrical conductor?

- (A) Porcelain
- (B) Aluminium
- (C) Tungsten
- (D) Nickel

A. (D)

B. (A)

C. (B)

D. (B)

Ans. B

Sol.

- \* Aluminium, Tungsten and Nickel are good electricity conductors while Porcelain is not.

- \* Porcelain is a ceramic material, it is tough, translucent and an electricity insulator.

- \* Properties associated with porcelain include low permeability and elasticity; considerable strength, hardness, toughness etc.

13. Infra-red rays are

- (A) Longitudinal waves
- (B) Transverse waves
- (C) Mechanical waves
- (D) Electromagnetic waves

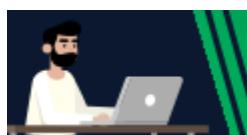
A. (A)

B. (B)

C. (D)

D. (C)

Ans. C



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Sol.

- \* Infrared are Electromagnetic radiations, with long wavelengths than visible light.
- \* Most of the thermal radiation emitted by objects near room temperature is infrared. These carry radiant energy and behaves both like a wave and like its quantum particle, the photon.
- \* Infrared radiation was discovered in 1800 by astronomer Sir William Herschel.

#### 14.What is an Electron?

- (A) A subatomic particle with a net charge, that is neutral.
- (B) A subatomic particle with a net charge that is positive.
- (C) A subatomic particle with a net charge that is negative.
- (D) A subatomic particle with a net charge that is zero.

- A. (C)
- B. (B)
- C. (A)
- D. (D)

Ans. A

Sol.

- The electron is a subatomic particle, whose electric charge is negative one elementary charge.
- Electrons belong to the first generation of the lepton particle family.
- The electron has a mass that is approximately 1/1836 that of the proton.

#### 15.If resistance of a circuit is doubled then to maintain the same voltage, flow of current in the circuit will

- (A) Increase by Half
- (B) Decrease by Half
- (C) Remain constant
- (D) Becomes zero

- A. (B)
- B. (C)
- C. (D)
- D. (A)

Ans. A

Sol.

- \* Ohm's law states that the current through a conductor between two points

is directly proportional to the voltage across the two points.

- \* It is stated as  $V=IR$ , hence if resistance is doubled at same voltage, the current became half as per ohm's law.

#### 16.Which of the following is true?

- (A) Image formed at retina is inverted
- (B) Image formed at retina is twice of original image
- (C) Image formed at retina is similar or Original Image
- (D) Image formed at retina is small

- A. (D)
- B. (A)
- C. (B)
- D. (C)

Ans. B

Sol.

- \* The image formed on the retina is inverted.

- \* The image formed on the retina is real.

- \* Our brain converts the electrochemical impulses from our eyes to create the visual representation of reality we perceive. Or in other words the inverted image is erected by brain though complex nervous functions.

#### 17.Out of the following, which one does NOT have magnetic properties like a permanent magnet?

- (A) Nickel (B) Iron
- (C) Aluminium (D) Lodestone

- A. (A)
- B. (B)
- C. (C)
- D. (D)

Ans. D

Sol.

- A lodestone is a naturally occurring magnets of the mineral magnetite. Lodestone is one of only a very few minerals that is found naturally magnetized.

- Lodestone are made of magnetite ( $Fe_3O_4$ ) with inclusions of maghemite (cubic  $Fe_2O_3$ ).

- Isaac Newton's signet ring reportedly contained a lodestone which was capable



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of lifting more than 200 times its own weight.

18.The sub-atomic particles which show property opposite to the general sub-atomic particles, are called:

- (A) Positrons (B) Antimatter
- (C) Photons (D) Neutrinos
- A. (C)
- B. (A)
- C. (B)
- D. (D)

Ans. B

Sol.

- Positrons are also known as antimatter or antiparticle. It has electric charge of +1e and spin same as electron and also same mass as electron.
- Alternatively known as an anti-electron, it has the same properties as the electron with the exception of electric charge.
- Stable in a vacuum, positrons quickly react with the electrons of ordinary matter by annihilation to produce gamma radiation.

19.Which Indian Researcher recently disputed Einstein's mass-energy equation  $E = mc^2$  as inadequate and valid only under certain conditions

- (A) Vasudevan Mukunth
- (B) Rajendra Pachauri
- (C) Ajay Sharma
- (D) Krishna Palem

A. (A)

B. (C)

C. (D)

D. (B)

Ans. B

Sol.

- Ajay Sharma is an assistant director of education with the Himachal Pradesh government.
- On January 10, 2016 the Indo-Asian News Service (IANS) published an article in which Sharma claims Albert Einstein's famous equation  $E = mc^2$  is "illogical".
- He stated that -Albert Einstein's mass energy equation ( $E=mc^2$ ) is inadequate as it has not been completely studied and is only valid under special conditions.

20.Which of the following statements is wrong about Sir CV Raman?

- (A) He was honoured with Bharat Ratna in 1954
- (B) He won Nobel Prize in 1930
- (C) He was born in Tamil Nadu in 1888
- (D) He was knighted in 1987
- A. (B)
- B. (C)
- C. (D)
- D. (A)

Ans. C

Sol.

- Sir Cv Raman was awarded Bharat Ratan in 1954 by the Indian government.
- He was elected a Fellow of the Royal Society early in his career (1924) and knighted in 1929.
- In 1930 he won the Nobel Prize in Physics.
- He was born in 1888 in Madras province of India.
- Hence statement D is incorrect.

21.NuSTART space-based X-ray telescope conducts deep survey for

- (A) Comets (B) Black holes
- (C) Planets (D) Asteroids

A. (D)

B. (A)

C. (B)

D. (C)

Ans. C

Sol.

Solution

- NuSTART space-based X-ray telescope conducts deep survey for Black holes.
- The Nuclear Spectroscopic Telescope Array (NuSTAR) is an Explorer mission.
- It allows astronomers to study the universe in high energy X-rays.
- It was launched in June, 2012.
- NuSTART is the first focusing hard X-ray telescope to orbit Earth.

22.Above which level of noise is a cause of hearing loss and damage?

- (A) Approx 80 Decibels
- (B) Approx 130 Decibels
- (C) Approx 150 Decibels
- (D) Approx 180 Decibels

A. (A)



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- B. (C)  
C. (D)  
D. (B)

Ans. B

Sol.

- The range of human hearing is generally considered to be 20 Hz to 20 kHz, but it is far more sensitive to sounds between 1 kHz and 4 kHz.
- In decibels human ear can sustain from 0db to around 130 dbs., which is further classified as
  - No risk range- 0-80 db
  - Harmful Range- 80-90db
  - Dangerous Range- 90-115
  - Irreversible Range- above 120

23.Which of the following is a conductor of electric charge?

- (A) Glass (B) Paper  
(C) Copper (D) Water

- A. (D)  
B. (A)  
C. (B)  
D. (C)

Ans. D

Sol.

- Generally all metals are good conductor of heat and electricity, in this case Copper metal is good conductor of electric charge.
- Glass, Paper And water are not conductor of electric charge, water conducts electricity due to impurities present in it, Pure water with neutral Ph is basically a non conductor of electric charge.
- The flow of electric charge is regarded as Electric Current.

24.Astronomical leap year measures in-

- (A) Leap Year (B) Light year  
(C) Mega Kilometer (D) Nautical Mile

- A. (C)  
B. (B)  
C. (A)  
D. (D)

Ans. B

Sol.

- Astronomical leap Year measures in Light year.
- A light Year is basically a unit of astronomical distance equivalent to the

distance that light travels in one year, which is  $9.4607 \times 10^{12}$  km.

25.Which process divides the light of sun into its component colours?

- (A) Refraction (B) Reflection  
(C) Retraction (D) Radiation

- A. (A)  
B. (D)  
C. (C)  
D. (B)

Ans. A

Sol.

- Refraction is the phenomena of travelling light from one medium to another. This phenomena is responsible for the scattering of different colours of light.
- Reflection is a phenomena in which light is reflected back from a surface.
- Radiation is a phenomena of radiating energy in form of radiations from nucleus of atom.
- Retraction is basically the action of drawing something back or back in.

26.Pressure is measured in terms of-

- (A) Mass and density  
(B) Work done'  
(C) Force and area  
(D) Force and distance

- A. (C)  
B. (B)  
C. (D)  
D. (A)

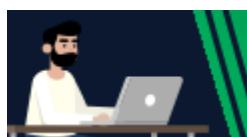
Ans. A

Sol.

- Pressure is defined as Force per Unit area.
- It's SI unit is Pascal.
- It is a scalar entity.
- Units such as the centimetre of water and millimetre of mercury are used to express pressures in terms of the height of column of a particular fluid in a manometer.

27.If frequency of wave increases, its wavelength

- (A) Increases  
(B) Decreases  
(C) Remains constant  
(D) Becomes infinite



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- A. (A)
- B. (B)
- C. (C)
- D. (D)

Ans. B

Sol.

- \* The frequency and wavelength of a wave are related.
- \* When frequency increases more wave crests pass a fixed point each second, that means the wavelength shortens.
- \* So, as frequency increases, wavelength decreases.
- \* The opposite is also true—as frequency decreases, wavelength increases.

28. Pressure is measured in terms of

- (A) Mass and Density
- (B) Work done
- (C) Force and Area
- (D) Force and Distance

- A. (D)
- B. (B)
- C. (C)
- D. (A)

Ans. C

Sol.

- Pressure is measured in terms of Force and Area.
- The standard SI unit for pressure measurement is the Pascal (Pa) which is equivalent to one Newton per square meter ( $N/m^2$ ) or the KiloPascal (kPa) where  $1\text{ kPa} = 1000\text{ Pa}$ .

29. The instrument used to regulate temperature to a particular degree is called

- (A) Thermostat
- (B) Thermometer
- (C) Pyrometer
- (D) Thermocouple

- A. (C)
- B. (A)
- C. (D)
- D. (B)

Ans. B

Sol.

- The instrument used to regulate temperature to a particular degree is called Thermostats.

- Thermostats use different types of sensors to measure the temperature.
- Thermostats are used in any device or system that heats or cools to a setpoint temperature.

30. The pressure of cabin of a flying aeroplane at height is-

- (A) Equal to outside
- (B) Lower than outside
- (C) More than outside
- (D) Normal atmospheric pressure at sea level

- A. (A)
- B. (C)
- C. (D)
- D. (B)

Ans. B

Sol.

- The pressure of cabin of a flying aeroplane at height is more than outside.
- The cabin needs to be pressurized so that they can maintain a high enough oxygen level for everyone onboard to function.
- Otherwise shortage of oxygen will occur which may lead to instant adverse health effects on passengers.

31. Which of the following is true about Glucometer?

- (A) It is medical instrument
- (B) It is non-medical instrument
- (C) It is used to measure the oxygen level in air
- (D) It is used to measure the nitrogen level in air.

- A. (C)
- B. (A)
- C. (B)
- D. (D)

Ans. B

Sol.

- A glucose meter is a medical device for determining the approximate concentration of glucose in the blood.
- It is a key element of home blood glucose monitoring(HBGM).

32. A spoon which seems tilted in water, is an example of

- (A) Reflection (B) Refraction



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(C) Retention (D) Focus

- A. A
- B. B
- C. D
- D. C

Ans. B

Sol.

\* A spoon which seems tilted in water, is an example of Refraction.

\* Refraction refers to change in direction of a wave passing from one medium to another due to different refractive indexes of mediums.

\* Refraction follows Snell's law, which states that, for a given pair of media, the ratio of the sines of the angle of incidence  $\theta_1$  and angle of refraction  $\theta_2$  is equal to the ratio of phase velocities ( $v_1 / v_2$ ) in the two media.

33. Which of the following branches of Physics related with the study of heat

- (A) Optics
- (B) Acoustics
- (C) Thermodynamics
- (D) Relativity

A. (A)

B. (C)

C. (B)

D. (D)

Ans. B

Sol.

• Acoustics- the branch of physics concerned with the properties of sound.

• Optics-Optics is the branch of physics that studies the behaviour and properties of light.

• Thermodynamics- Thermodynamics is the branch of physics that deals with heat and temperature, and their relation to energy, work, radiation, and properties of matter.

• Relativity is a concept of physics which is propounded by Einstein.

34. Centigrade, which is unit of temperature is denoted on the name of:

- (A) Kelvin
- (B) Jean-Pierre Christin
- (C) Marten Stromer
- (D) Anders Celsius

A. (C)

B. (A)

C. (B)

D. (D)

Ans. D

Sol.

• In 1742 Anders Celsius proposed the Celsius temperature scale which bears his name. The scale is used to measure the temperature in Celsius Units. He also founded the Uppsala Astronomical Observatory in 1741.

• Fahrenheit Scale and Kelvin Scales are other two major scales used to measure temperature.

• Absolute zero is denoted as 0 K on the Kelvin scale,  $-273.15^{\circ}\text{C}$  on the Celsius scale, and  $-459.67^{\circ}\text{F}$  on the Fahrenheit scale. The SI unit of Temperature is Kelvin not Celsius.

35. Match the following with true SI unit.

- (A) P-a, Q-b, R-c, S-d
- (B) P-a, Q-c, R-b, S-d
- (C) P-d, Q-b, R-c, S-a
- (D) P-d, Q-c, R-b, S-a

A. (C)

B. (A)

C. (B)

D. (D)

Ans. B

Sol.

\* The SI unit of Angle is Radian

\* The SI unit of Magnetic Induction is Weber

\* The SI unit of Magnetic Flux is Henry

\* The SI unit of Solid Angle is Steradian.

36. Optical Character Reader is an example of which type of device?

- (A) Output device
- (B) Input device
- (C) Interface device
- (D) Storage device

A. (D)

B. (B)

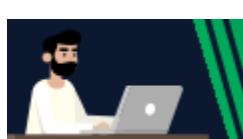
C. (A)

D. (C)

Ans. B

Sol.

\* Optical Character Recognition is an example of the Input device in which images of typed, written or printed text converted into machine-encoded text.



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- \* It is a major tool used in fields like passport documents, invoices, computerized receipts, business cards, mail, printouts of static-data etc.
- \* Advanced systems of Optical Character Reader are capable of producing a high degree of recognition accuracy for most fonts are now common, and with support for a variety of digital image file format inputs.

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

- (A) Motion/impulse
- (B) Gravitation of force
- (C) Electric flow
- (D) Displacement

A. (B)

B. (D)

C. (C)

D. (A)

Ans. C

Sol.

\* A scalar is a quantity with magnitude only, while A vector is a quantity with the magnitude as well as direction like displacement, force, impulse etc.

\* Electric current has both direction and magnitude, but it is not considered as vector because it does not follow the vector law of addition.

\* Amphere is the unit to measure electric current and it flows opposite to the direction of flow of electrons. Metals are good conductor of electricity because it has free electrons available.

38. The principle of changing magnetic field which produces an electric current in a wire is used in \_\_\_\_\_.

- (A) Electric bell
- (B) Electric generator
- (C) Electromagnets
- (D) Magnetic compass

A. (A)

B. (B)

C. (C)

D. (D)

Ans. B

Sol.

• The principle of changing magnetic field which produces electric current in a wire is used in Electric Generator.

- When electricity passes through the wire, the metal becomes magnetic and creates a magnetic field.
- The coils of wire of the generators are conductors, and when the electrons in the wires are exposed to changing magnetic fields, they move, creating an electric current in the wires.

39. What is the unit of length used informally to express astronomical distances?

- (A) Petameters
- (B) Parsecs
- (C) Light Years
- (D) Hubble Length

A. (D)

B. (C)

C. (A)

D. (B)

Ans. B

Sol.

• A light-year is a unit of length used informally to express astronomical distances.

• It is approximately 10 trillion kilometres (or about 6 trillion miles).

• As defined by the International Astronomical Union (IAU), a light-year is the distance that light travels in vacuum in one Julian year.

40. Sound waves are \_\_\_\_\_ waves

- (A) Pressure
- (B) Longitudinal
- (C) Electromagnetic
- (D) Mechanical

A. (C)

B. (D)

C. (B)

D. (A)

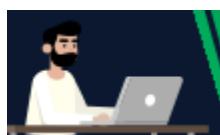
Ans. C

Sol.

• Sound waves are longitudinal waves.

• Longitudinal waves are those waves which vibrate in the direction of propagation.

• The other main type of wave is the transverse wave, in which the displacements of the medium are at right angles to the direction of propagation.



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41.Which of the following colour has the least wavelength?

- (A) Green
- (B) Blue
- (C) Red
- (D) Violet

- A. (A)
- B. (B)
- C. (D)
- D. (C)

Ans. C

Sol.

- The colours of the spectrum of white light are violet, indigo, blue, green, yellow, orange and red (VIBGYOR).
- Each colour is associated with a different wavelength.
- Walking from violet, indigo, blue, green, yellow, orange and red the wavelength of colours decreases.
- The Red colour has maximum wavelength of 620-720 while Violet has minimum of 400-440.

42.When the human body temperature raises by about 5.4-8°F above the normal body temperature, the condition is known as

- (A) Viral (B) Hypothermia
- (C) Pyretic (D) Hyperpyrexia

- A. (B)
- B. (A)
- C. (D)
- D. (C)

Ans. C

Sol.

- Hyperpyrexia is another term for a very high fever.
- When the human body temperature raises by about 5.4-8°F above the normal body temperature, the condition is known as Hyperpyrexia.
- Hyperpyrexia is considered to be a medical emergency.

43.Evaporation of a liquid to absorb heat is the principle used by a

- (A) Microwave oven (B) Refrigerator
- (C) Geyser (D) Electric Kettle

- A. (C)
- B. (D)
- C. (A)
- D. (B)

Ans. D

Sol.

- Evaporation of a liquid takes away heat.
- As the rubbing alcohol evaporates it absorbs heat and creates the cool feeling.
- A refrigerator uses the evaporation of a liquid refrigerant to absorb heat from the food compartment.

44.A moving body definitely possesses-

- (A) Kinetic energy
- (B) Potential energy
- (C) Mechanical energy
- (D) Heat energy

- A. (C)
- B. (B)
- C. (D)
- D. (A)

Ans. D

Sol.

- Kinetic Energy- is possessed by a moving body.
- Potential Energy- is possessed by height or elevation of a body.
- Mechanical Energy- is defined as ability to do work.
- Heat Energy- Possessed due to movement of tiny particles caused by temperature.

45.'Gallon' is commonly used\_\_\_\_\_.

- A. To refer to speed.
- B. To refer to a container.
- C. As a measure of volume
- D. To express containers in terms of barrel.

- A. C

Sol. 'Gallon' is commonly used to measure volume.

46.How many millimeters make ten kilometers?

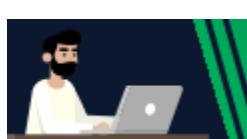
- A. 1010
- B. 109
- C. 108
- D. 107

- A. D

Sol. 1 kilometer = 1000 meter

1 meter = 1000 millimeters

Now, 1 kilometer = 1000000 millimeters



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Hence, 10 kilometers = 10000000  
millimeters = 10<sup>7</sup>

47. When a person can see only nearby objects, the condition is called \_\_\_\_\_.

- A. Hypermetropia
- B. Astigmatism
- C. Myopia
- D. Retinopathy

Ans. C

Sol. Myopia is a condition of the eye where the light that comes in does not directly focus on the retina but in front of it, causing the image that one sees when looking at a distant object to be out of focus, but in focus when looking at a close object.

48. By the material, light can transmit without any loss, known as

- (A) Translucent
- (B) Opaque
- (C) Transparent
- (D) Vitreous

A. (B)

B. (D)

C. (A)

D. (C)

Ans. D

Sol.

- Transparent material allows light to pass through it without being scattered or without any loss or in other words the light follows Snell's Law.
- Translucent material is that materials which allows light to pass through but does not necessary follow Snell's law.
- Opaque materials are neither metallic nor transparent. For example – wood, stone etc.
- Vitreous material is an amorphous solid material like glass.

49. What is the SI unit of force?

- (A) Kelvin
- (B) Newton
- (C) Pascal
- (D) Volt

A. (C)

B. (D)

C. (B)

D. (A)

Ans. C

Sol.

- The SI unit of Force is Newton.
- Force is defined as any interaction that can change the motion of an object. A force can cause an object with mass to change its velocity or to gain acceleration/ deceleration.
- Newton gave three laws of motion which gave relation between motion, speed, distance, force and mass of an object.
- Kelvin is the SI unit of Temperature, Pascal is the unit of Pressure and Volt is the unit of potential difference.

50. Water droplets cause rainbow due to

- (A) Reflection of sunlight
- (B) Refraction of sunlight
- (C) Reflection & refraction of sunlight
- (D) Diffusion of sunlight

A. (D)

B. (B)

C. (A)

D. (C)

Ans. D

Sol.

- Water droplets cause rainbow due to reflection & refraction of sunlight.
- It takes the form of a multicoloured circular arc.
- Rainbows caused by sunlight always appear in the section of sky directly opposite the sun.

51. The instrument used to measure the rotation speed of a shaft is called \_\_\_\_\_.

- A. Speedometer
- B. Tachometer
- C. Anemometer
- D. Chronometer

Ans. B

Sol. Tachometer is an instrument measuring the rotation speed of a shaft or disk, as in a motor or other machine.

- The device usually displays the revolutions per minute (RPM) on a calibrated analogue dial, but digital displays are increasingly common.

52. Blotting paper absorbs ink due to

- A. Coarse nature of paper
- B. Osmosis
- C. Capillary action



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D. Siphoning

Ans. C

Sol. Blotting Paper absorbs ink due to capillary action.

- Capillary action is solely based on the property of liquids which is surface tension.
- When the adhesion to the walls is stronger than the cohesive forces between the liquid molecules, capillary action takes place. This causes an upward force on the liquid at the ends. This ultimately results in a meniscus turning upward.

53. Least distance of distinct vision for normal eye is \_\_\_\_\_.

- A. 15 cm
- B. 20 cm
- C. 25 cm

D. 30 cm

Ans. C

Sol. Least distance of distinct vision is the minimum distance from the eye at which an object appears to be distinct.

- Least distance of distinct vision for normal eye is 25 cm.

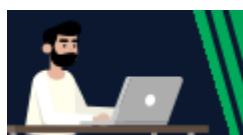
54. The pressure is usually measured by \_\_\_\_\_.

- A. Mass & Density
- B. Work done
- C. Force & Area
- D. Force & Distance

Ans. C

Sol. Pressure is measured in term of Force and Area.

- It is defined as force per unit area.
- Its unit is Pascal or Newton per square meter.



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