Physics

1 of 13 sets

1. A light year is a measure of :

A. Speed

B. Velocity

C. Distance

D. Time

Answer:C

Explanation:- A light-year is a unit of length equal to just under 10 trillion kilometres (or about 6 trillion miles). As defined by the International Astronomical Union (TAU), a light-year is the distance that light travels in a vacuum in one Julian year. Note that the lightyear is a measure of distance (rather than, as is sometimes misunderstood, a measure of time).

2. A device which is used to limit the current in an electrical circuit is called a -

A. Grid

B. Fuse

C. Hub

D. Conductor

Answer:B

Explanation:- A fuse places a limit on the amount of current that can be drawn by an electric circuit by opening (blowing or melting) when the current exceeds a preset limit. This protects the circuit and the surroundings from fire or damage in the case of an overload or short circuit.

3. Two rods, one of copper and other of steel, experience the same up thrust when placed in water. Thus, both have –

A. equal volume

B. equal weight

C. equal density

D. equal mass

Answer:A

Explanation:- When a body is placed in water, the upthrust or buoyant force acting on it depends upon the following factors: (1) Volume of the body submerged in the liquid - (V), or volume of the

liquid displaced - (V); (ft) Density of the liquid - (d); and (Hi) Acceleration due to gravity In-line.

4. Minimum numbers of unequal vectors which can give zero resultant are -

A. Two

B. Three

C. Four

D. More than four

Answer:B

Explanation:- Minimum number of unequal vectors which can give three zero resultants.

5. Water is not suitable as a calorimetric substance because it –

A. has high specific heat

B. is a good conductor

C. has high boiling point

D. low latent heat of vaporization

Answer:A

Explanation:- The specific heat of water is higher than all other common substances. Hence, water is used for heating purposes (as in hot water bottles) and for cooling purposes (as in radiators of cars). Off all the liquids, mercury has the lowest specific heat due to which it is used as a thermometric liquid.

6. When a body falls from an aeroplane, there is increase in its –

A. Kinetic energy

B. Mass

C. Acceleration

D. Potential energy

Answer:C

Explanation:- The energy possessed by a body by virtue of its motion is called kinetic energy. Potential Energy is the energy possessed by virtue of its position or configuration. When a body falls from an aeroplane, there is increase in its acceleration.

7. Which among the following types of coal produces most heat per unit?

A. Coal

B. Lignite

C. Anthracite

D. Pit

Answer:C

Explanation:- The heat content of anthracite ranges from 22 to 28 million Btu per short ton (26 to 33 MJ/kg) on a moist, mineral-matter-free basis. Anthracite ("coal-like") is a hard, compact variety of mineral coal that has a high luster. It has the highest carbon content, the fewest impurities, and the highest calorific content of all types of coals, which also include bituminous coal and lignite.

8. Which among the following waves is used for communication by artificial satellites?

A. Micro waves

B. Radio waves

C. A. M.

D. Frequency of 1016 series

Answer:A

Explanation:- For fixed (point-to-point) services, communications satellites provide a microwave radio relay technology complementary to that of communication cables. They are also used for mobile applications such as communications to ships, vehicles, planes and hand-held terminals, and for TV and radio broadcasting. Microwave technology is extensively used for point-to-point telecommunications (i.e., non broadcast uses).

9. Energy is continuously created in the sun due to –

A. Nuclear fusion

B. Nuclear fission

C. Radioactivity

D. Artificial radioactivity

Answer:A

Explanation:- The central mass of the sun becomes increasingly hot and dense. eventually initiating thermonuclear fusion in its core. It is thought that almost all other stars form by this process. nuclear fusion is a nuclear reaction in which two or more atomic nuclei join together, or "fuse", to form a single heavier nucleus. During this process, matter is not conserved because some of the mass of the fusing nuclei is converted to energy which is released.

10. When the barometer reading dips suddenly, it is an indication of –

A. Hot weather

B. Calm weather

C. Storm

D. Dry weather

Answer:C

Explanation:- Sudden and great fluctuations of the barometer at any time of the year indicate unsettled weather for several days, perhaps a fortnight. If the barometer falls two or threetenths of an inch in four hours, one can expect a gale of wind. If the surface of the mercury in the cistern of the barometer vibrates upon the approach of a storm, the gale can be expected to be severe.

11. Good conductor of electricity is –

A. dry air

B. paper

C. kerosene

D. graphite

Answer:D

Explanation:- Graphite has a tendency to behave very much like a metal because the carbon molecules arrange themselves into a lattice structure. The crystal lattice is the same orientation that metal forms, and it allows the free-movement of electrons, making it a good electrical conductor. The characteristics possesses by the graphite for conduction is far better than the dry air paper and kerosene and that's what makes it a good conductor.

12. The fourth state of matter is known as

A. Gas

B. Vapour

C. Plasma

D. Electrons

Answer:C

Explanation:- The characteristics of plasmas are significantly different from those of ordinary neutral gases so that plasmas are considered a distinct "fourth state of matter, plasma is a state of matter similar to gas in which a certain portion of the particles is ionized. Heating a gas may ionize its molecules or atoms (reduce or increase the number of electrons in them), thus turning it into a plasma, which contains charged particles: positive ions and negative electrons or ions.

13. Radio waves, microwaves, infra-red spectrum, ultraviolet rays, X-rays and gamma rays are classified as _____.

A. light waves

B. electromagnetic waves

C. electric waves

D. magnetic waves

Answer:B

Explanation:- Electromagnetic radiation is the radiant energy released by certain electromagnetic processes. It consists of electromagnetic waves which are synchronized oscillations of electric and magnetic fields that propagate at the speed of light through a vacuum.

14. Which one of the following instruments is used to study dispersion of light?

A. Microscope

B. Telescope

C. Spectrometer

D. Photometer

Answer:C

Explanation:- Dispersion occurs when different frequencies of light have different phase velocities, due either to material properties (material dispersion) or to the geometry of an optical waveguide (waveguide dispersion). A spectrometer (spectro-photometer, spectrograph or spectroscope) is an instrument used to measure properties alight over a specific portion of the electromagnetic spectrum, typically used in spectroscopic analysis to identify materials.

15. A falling drop of rain water ac-quires the spherical shape due to –

A. Viscosity

B. Surface Tension

C. Atmospheric pressure

D. Gravitational force

Answer:B

Explanation:- Raindrops start out as round high in the atmosphere as water collects on dust and smoke particles in clouds. But as raindrops fall, they lose their rounded shape. A raindrop falling through the atmosphere forms as a roughly spherical structure due to the surface tension of water. This surface tension is the "skin" of a body of water that makes the molecules stick together. The cause is the weak hydrogen bonds that occur between water molecules.

16. This scientist gave the law- ‘Properties of elements are a periodic function of their atomic number.’ This property of the fundamental importance of atomic number was discovered by-

A. Johann Wolfgang Döbereiner

B. John Newlands

C. Dmitri Ivanovich Mendeléev

D. Henry Moseley

Answer:D

Explanation:- In 1913, Henry Moseley showed that the atomic number of an element is a more fundamental property than its atomic mass as described below.

17. The mass and energy equivalent to 1 a.m.u. respectively are -

A. 1.67 x 10?27 g, 9.30 MeV

B. 1.67 x 10?27kg, 930 MeV

C. 1.67 x 10?27kg, 1 MeV

D. 1.67 x 10?34 kg, 1 MeV

Answer:B

Explanation:- The mass and energy equivalent to 1 a.m.u. respectively are 1.67 x 10?27kg, 930 MeV.

18. A spherical ball made of steel when dropped in mercury container will –

A. sink in mercury

B. will be on the surface of mercury

C. will be partly immersed mercury

D. will dissolve in mercury

Answer:B

Explanation:- The density of steel usually ranges between 7.75 and 8.05 g/cm3 and the density of mercury is 13.534 g/cm3. Mercury is denser than steel this will mean that the buoyant force is large enough to float the steel ball. Different materials usually have different densities, so density is an important concept regarding buoyancy, purity and packaging.

19. The sounds having a frequency of 20 Hertz to 20,000 Hertz are known as –

A. Audible sounds

B. Ultrasonics

C. Infrasonics

D. Megasonics

Answer:A

Explanation:- An audio frequency is characterized as a periodic vibration whose frequency is audible to the average human. It is the property of sound that most determines pitch and is measured in

hertz (Hz).The generally accepted standard range of audible frequencies is 20 to 20,000 Hz, although the range of frequencies individuals hear is greatly influenced by environmental factors.

20. Gamma rays have greatest similarity with –

A. ?-rays

B. ?-rays

C. X-rays

D. U.V.-rays

Answer:C

Explanation:- Gamma radiation, also known as gamma rays or hyphenated as gamma-rays and denoted as y, is electromagnetic radiation of high frequency and therefore high energy. Gamma rays are ionizing radiation and are thus biologically hazardous. They are classically produced by the decay from high energy states of atomic nuclei (gamma decay), but are also created by other processes.

21. In the absence of ozone layer, Which rays will enter into atmosphere?

A. Infrared

B. Visible

C. Ultraviolet

D. X-rays

Answer:C

Explanation:- The ozone layer is a layer in Earth's atmosphere containing relatively high concentrations of ozone (O3). The ozone layer absorbs 97-99% of the Sun's medium-frequency ultraviolet light (from about 200 nm to 315 nm wavelength), which potentially damages exposed life forms on Earth.

22. Light year is the unit of -

A. Frequency

B. Distance

C. Energy

D. Power

Answer:B

Explanation:- A light-year is a unit of distance. It is the distance that light can travel in one year. Light moves at a velocity of about 300,000 kilometers (km) each second. So in one year, it can travel about 10 trillion km.

23. An object at rest will remain at rest and an object in motion will remain in motion until and unless it is acted upon by an external force. This is Newton's –

A. First law

B. Second law

C. Third law

D. Fourth law

Answer:A

Explanation:- Newton's first law of motion -sometimes referred to as the law of inertia-states that every object will remain at rest or in uniform motion in a straight line unless compelled to change its state by the action of an external force. This is normally taken as the definition of inertia.

24. Cathode rays when obstructed by metal cause emission of -

A. ? – ray

B. X – ray

C. ? – ray

D. ? – ray

Answer:B

25. Sensation of sound persists in our brain for about -

A. 0.001s

B. 0.2s

C. 0.1s

D. 10s

Answer:C

Explanation:- The sensation of hearing of any sound persists in our brain for 0.1s.This is called the persistence of hearing.

26. Tape recorder should not be kept near one of the following things –

A. Clock

B. Magnet

C. Electrical switchboard

D. Radio

Answer:B

Explanation:- The cassette tape contains a magnetic strip wound around two spools. Tiny magnetic particles are randomly scattered throughout the tape. A tape recorder should not be kept near a

magnet as the latter can cause the magnetic material to be pushed and pulled out of place. Rearranging the magnetic particles erases the sound.

27. Which physical quantity is measured in ‘siemens’?

A. Electric potential

B. Electrical conductance

C. Magnetic flux

D. Refractive index

Answer:B

Explanation:- The Siemens is the unit of electric conductance, electric susceptance and electric admittance in the International System of Units (SI).

28. The surface tension of water on adding detergent to it –

A. increases

B. decreases

C. no change

D. becomes zero

Answer:B

Explanation:- In the solid and liquid phase, water molecules are bonded to each other by virtue of an interaction between hydrogen atoms on one molecule and the oxygen atom of another — the process is referred to as "hydrogen bonding." The result is a kind of "skin" on liquid water's surface.

29. In a refrigerator, the cooling system should always be –

A. at the top

B. at the bottom

C. at the middle

D. can be anywhere

Answer:B

Explanation:- The compressor is the motor (or engine) of the cooling system. It is normally at the bottom of the refrigerator in the back. The compressor runs whenever the refrigerator thermostat calls for cooling.

30. Which of the following is optical illusion?

A. Rainbow

B. Earthshine

C. Halo

D. Mirage

Answer:D

Explanation:- A mirage is a naturally occurring optical illusion or phenomenon in which light rays are bent due to refraction in layers of air of varying density. The image usually is upside down, enhancing the illusion that the sky image seen in the distance is really a water or oil puddle acting as a mirror.

31. The base of an electric iron is brightly polished mainly -

A. to make it smooth and frictionless

B. to make it rust-proof

C. to reduce heat loss by radiation

D. to make it more durable

Answer:C

Explanation:- Polished surfaces are poor radiators of heat. So loss of heat on that account is reduced and the electric iron remains hotter than otherwise.

32. If the length of a simple pendulum is halved then its period of oscillation is -

A. doubled

B. halved

C. increased by a factor ? 2

D. decreased by a factor ? 2

Answer:D

33. Lux is the SI unit of -

A. intensity of illumination

B. luminous efficiency

C. luminous flux

D. luminous intensity

Answer:A

Explanation:- The SI unit of intensity of illumination (illuminance) is the lux. An illuminance of 1.0 lux is produced by 1.0 lumen of light shining on an area of 1.0 m2.

34. Eclipses occur due to which optical phenomena?

A. Reflection

B. Refraction

C. Rectilinear propagation

D. Diffraction

Answer:C

Explanation:- An eclipse is an astronomical event that occurs when an astronomical object is temporarily obscured, either by passing into the shadow of another body or by having another body pass between it and the viewer. Rectilinear propagation is a wave property which states that waves propagate (move or spread out) in straight lines.

35. Pure water is bad conductor of electricity because it is –

A. feebly ionized

B. not volatile

C. a very good solvent

D. a non-polar solvent

Answer:A

Explanation:- Pure water is a covalent compound. It exists as simple discrete molecules and have a simple molecular structure. Hence, it does not exist as ions. Therefore, pure water cannot conduct electricity due to the absence of mobile ions and electrons. One instance that water can conduct electricity is when there are dissolved substance in it. Only then will water dissociate into hydrogen ions and hydroxide ions. The presence of mobile ions enables it to conduct electricity.

36. Pycnometer is an instrument used to measure the –

A. Density

B. Intensity of solar radiation

C. Intensity of earthquake

D. High temperatures

Answer:A

Explanation:- A gas pycnometer is a laboratory device used for measuring the density — or more accurately the volume — of solids, be they regularly shaped, porous or non-porous, monolithic, powdered, granular or in some way comminuted, employing some method of has displacement and the volume-pressure relationship known as Boyle's Law.

37. Lamberts law is related to –

A. Reflection

B. Refraction

C. Interference

D. Illumination

Answer:D

Explanation:- Lambert's Law says that the intensity of emitted light from a surface is directly proportional to the cosine of the angle between the line of view and the normal to the surface. A Lambertian surface is a surface that follows this rule exactly. In practice, most surfaces are not perfectly Lambertian. A surface which obeys Lambert's law is said to be Lambertian, and exhibits Lambertian reflectance. Such a surface has the same radiance when viewed from any angle.

38. Rain drops acquire spherical shape due to -

A. viscosity

B. surface tension

C. friction

D. elasticity

Answer:B

Explanation:- The Surface tension pulls the surface of the drop equally at all points thus produces the spherical shape having the minimum surface area.

39. The angular velocity depends upon the rate of change of the _____.

A. Angular Distance

B. Angular acceleration

C. Angular Displacement

D. torque

Answer:C

Explanation:- The angular velocity is defined as the rate of change of angular displacement and is a vector quantity which specifies the angular speed of an object and the axis about which the object is rotating.

40. Coolis tube is used to produce –

A. Radio waves

B. Micro waves

C. X-rays

D. Gama rays

Answer:C

Explanation:- X-rays are part of the electromagnetic spectrum, an ionizing radiation with wavelengths shorter than ultraviolet light. X-ray tubes evolved from experimental Crookes tubes with

which X-rays were first discovered in the late 19th century, and the availability of this controllable source of X-rays created the field of radiography, the imaging of opaque objects with penetrating radiation.

41. Which of the following is used for regulated electric supply?

A. Zener diode

B. Junction diode

C. Gun diode

D. Tunnel diode

Answer:A

Explanation:- The Zener diode is like a generalpurpose signal diode. When based in the forward direction it behaves just like a normal signal diode, but when a reverse voltage is applied to it, the voltage remains constant for a wide range of currents and hence widely used for regulatedelectric supply. The device was named after Clarence Zener, who discovered this electrical property. Many diodes described as "Zener" diodes rely instead on avalanche breakdown as the mechanism.

42. What is found in frequency modulation?

A. Fixed frequency

B. Fixed dimension

C. Change in frequency and dimension

D. Change in dimension only

Answer:A

Explanation:- Frequency modulation (FM) conveys information over a carrier wave by varying its instantaneous frequency. This contrasts with amplitude modulation, in which the amplitude of the carrier is varied while its frequency remains constant. Frequency modulation is also used in telemetry, radar, seismic prospecting and newborn EEG seizure monitoring.

43. When the speed of car is doubled, then what will be the braking force of the car to stop it in the same distance?

A. four times

B. two times

C. half

D. one-fourth

Answer:A

Explanation:- Brake force, also known as Brake Power, is a measure of braking power of a vehicle. Suppose a car whose mass is 'x' and is braked from a speed of y km/hr to come to halt at a uniform retardation in z min. If the speed of the car is doubled in the same distance, then the braking force required to stop the car is four times the original speed i.e. '4v'. Note that all the parameters remain to be same.

44. What is the maximum value of deforming force up to which a material shows elastic property and above which the material loses it?

A. Elasticity

B. Strain

C. Elastic Limit

D. Stress

Answer:D

Explanation:- The Maximum Extent to which a solid may be stretched without permanent alteration of size or shape.

45. The method of protecting iron from rusting, by coating a thin layer of Zinc is called -

A. Galvanizing

B. rancidity

C. Alloy

D. Pulverizing

Answer:A

Explanation:- Galvanisation or galvanization (or galvanizing as it is most commonly called) is the process of applying a protective zinc coating to iron or steel, to prevent rusting.

46. Ultra violet radiations of the Sun do not reach the earth because, earth's atmosphere is surrounded by –

A. Carbon dioxide

B. Ammonia

C. Chlorine

D. Ozone

Answer:D

Explanation:- The ozone layer absorbs 97-99% of the Sun's medium-frequency ultraviolet light (from about 200 nm to 315 nm wavelength), which potentially damages exposed life forms on Earth. Ozone is formed from dioxygen by the action of ultraviolet light and also atmospheric electrical

discharges, and is present in low concentrations throughout the Earth's atmosphere. In total, ozone makes up only 0.6 parts per million of the atmosphere.

47. "Curie" is unit of :

A. Radioactivity

B. Temperature

C. Heat

D. Energy

Answer:A

Explanation:- Curie, in physics, unit of activity of a quantity of a radioactive substance, named in honour of the French physicist Marie Curie. One curie (1 Ci) is equal to 3.7 x 1010 Becquerel (Bq). Radioactivity refers to the particles which are emitted from nuclei as a result of nuclear instability.

48. Speed of sound is the greatest in :

A. Water

B. Air

C. Glass

D. Glycerine

Answer:C

Explanation:- Sound travels faster in liquids and non-porous solids than it does in air. It travels about 4.3 times as fast in water (1,484 m/s), and nearly 15 times as fast in iron (5,120 m/s), than in air at 20 degrees Celsius.

49. Laser is a device to produce -

A. a beam of white light

B. coherent light

C. microwaves

D. X-rays

Answer:B

Explanation:- In physics, two wave sources are perfectly coherent if they have a constant phase difference and the same frequency, and the same waveform. Coherence is an ideal property of waves that enables stationary (i.e. temporally and spatially constant) interference.

50. The hydraulic brakes used in automobiles is a direct application of :

A. Archimedes' principle

B. Toricellian law

C. Bernoulli's theorem

D. Pascal's law

Answer:D

Explanation:- Pascal's principle guarantees that the pressure is transmitted equally to all parts of the enclosed fluid system. This gives straightline braking unless there is a fluid leak or something to cause a significant difference in the friction of the surfaces. The hydraulic brake is an arrangement of braking mechanism which uses brake fluid, typically containing ethylene glycol, to transfer pressure from the controlling unit, which is usually near the operator of the vehicle, to the actual brake mechanism, which is usually at or near the wheel of the vehicle.

51. A kilowatt-hour is unit of –

A. Energy

B. Power

C. Electric charge

D. Electric current

Answer:A

Explanation:- Work is defined as a force acting through a distance (a length of space), energy is always equivalent to the ability to exert pulls or pushes against the basic forces of nature, along a path of a certain length. In the International System of Units (SI), energy is measured in joules, but in many fields other units, such as kilowatt-hours and kilocalories, are customary.

52. Which of the following is used to split white light into different colors?

A. Glass slab

B. Convex lens

C. Concave lens

D. Prism

Answer:D

Explanation:- In optics, a prism is a transparent optical element with flat, polished surfaces that refract light. At least two of the flat surfaces must have an angle between them. The exact angles between the surfaces depend on the application. The traditional geometrical shape is that of a triangular prism with a triangular base and rectangular sides, and in colloquial use "prism" usually refers to this type.

53. Nuclear reactors used to produce electricity are based on –

A. Nuclear fission

B. Nuclear fusion

C. Cold fusion

D. Superconductivity

Answer:A

Explanation:- A nuclear reactor is a device to initiate and control a sustained nuclear chain reaction. Most commonly they are used for generating electricity and for the propulsion of ships. Usually heat from nuclear fission is passed to a working fluid (water or gas), which runs through turbines that power either ship's propellers or generators.

54. Energy that is produced commercially from coal is called –

A. Light energy

B. Kinetic energy

C. Thermal energy

D. Potential energy

Answer:C

Explanation:- Thermal enemy, but in most cases coal is used for electricity. The steel industry uses coal (or coke rather) in blast furnaces. Thermal energy is the part of the total internal energy of a thermodynamic system or sample of matter that results in the system temperature. This quantity may be difficult to determine or even meaningless unless the system has attained its temperature only through heating, and not been subjected to work input or output, or any other energy-changing processes.

55. Which among the following is not a characteristic of transition metals?

A. Tendency to gain electrons

B. Low electro negativity

C. Low ionization energy

D. Malleability

Answer:A

Explanation:- The transition metals have a tendency to lose electrons. Since the electrons in the highest energy level are actually on a lower principal energy number than the ones before them, this makes it relatively easy to lose some or all of their electrons to land in stable state.

56. Which one of the following is not a function of the liver?

A. Regulation of blood sugar

B. Enzyme activation

C. Detoxiation

D. Reproduction

Answer:D

Explanation:- Liver is the body's largest internal organ. It has many functions in the body like it helps in protein synthesis and blood clotting, manufacturing triglycerides and cholesterol, glycogen synthesis, and bile production.

57. The source of the Sun's energy is the process of –

A. Photoelectric emission

B. Nuclear fission

C. Nuclear fusion

D. Thermionic emission

Answer:C

Explanation:- Nuclear fusion is a nuclear reaction in which two or more atomic nuclei join together, or "fuse", to form a single heavier nucleus. During this process, matter is not conserved because some of the mass of the fusing nuclei is converted to energy which is released. Fusion is the process that powers active stars.

58. A boy sitting in a train moving with a uniform velocity drops a coin outside. A man standing outside the train will find the trajectory of the coin to be -

A. a parabola

B. a horizontal straight line

C. a vertical straight line

D. a circle

Answer:A

Explanation:- Parabola, because when the coin is dropped at a particular point, it has the same velocity as the running train. So, by Newton's first law, it continues its motion horizontally with that velocity.

59. Which of the following is a nonrenewable source of energy?

A. Biogas

B. Solar

C. Wind

D. Coal

Answer:D

Explanation:- A non-renewable resource is a natural resource which cannot be reproduced, grown, generated, or used on a scale which can sustain its consumption rate. So, coal is nonrenewable source of energy. Once it is depleted, there is no more available for future needs. Fossil fuels (such as coal, petroleum, and natural gas), nuclear power (uranium) and certain aquifers are examples of non-renewable resources.

60. Solar energy is converted into chemical energy during –

A. Transpiration

B. Photosynthesis

C. Diffusion

D. Osmosis

Answer:B

Explanation:- In photosynthesis, solar energy is converted to chemical energy. The chemical energy is stored in the form of glucose (sugar). Carbon dioxide, water, and sunlight are used to produce glucose, oxygen, and water. Photosynthesis is a process used by plants and other organisms to convert the light energy captured from the sun into chemical energy that can be used to fuel the organism's activities.

61. Decibel is the unit used for –

A. Speed of light

B. Intensity of heat

C. Intensity of sound

D. Radio wave frequency

Answer:C

Explanation:- The decibel (abbreviated dB) is the unit used to measure the intensity of a sound. The decibel scale is a little odd because the human ear is incredibly sensitive. Our ears can hear everything from your fingertip.brushing lightly over your skin to a loud jet engine. The decibel (dB) is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level.

62. The term ‘Isoneph' indicates the lines of equal –

A. cloudiness

B. salinity

C. rainfall

D. pressure

Answer:A

Explanation:- An isoneph is a line indicating equal cloud cover or equal cloudiness. Variations in the degrees of slope, temperature, occurrence of rainfall, may be represented by drawing the lines of equal values on a map. All such maps are termed as Isopleth Map. The word Isopleth is derived from 'Iso' meaning equal and 'pleth' means lines. Thus, an imaginary line, which joins the places of equal values, is referred as Isopleth.

63. Fibre optics work on the principle of –

A. Scattering of light

B. Total internal absorption

C. Total internal reflection

D. Optical rotation

Answer:C

Explanation:- An optical fiber (or optical fibre) is a flexible, transparent fiber made of glass (silica) or plastic, slightly thicker than a human hair. It functions as a waveguide, or "light pipe", to transmit light between the two ends of the fiber. The field of applied science and engineering concerned with the design and application of optical fibers is known as fiber optics.

64. A decibel is –

A. A musical instrument

B. The wavelength of noise

C. A musical note

D. A measure of sound level

Answer:D

Explanation:- The decibel (dB) is a logarithmic unit that indicates the ratio of a physical quantity (usually power or intensity) relative to a specified or implied reference level. A ratio in decibels is ten times the logarithm to base 10 of the ratio of two power quantities.

65. The type of mirrors used in the headlamp of cars is –

A. Parabolic concave

B. Plane

C. Spherical convex

D. Cylindrical concave

Answer:A

Explanation:- Curved mirror that reflects light from its inner surface, the curve being inward. It may be either circular or parabolic in section. A concave mirror converges parallel light rays inward to the point of principal focus. The image formed by a concave mirror is real (reduced and inverted) if the object is not too close to the mirror. A real image is formed at the point of convergence.

66. If lift is going up with acceleration, the apparent weight of a body is -

A. may be more or less than true weight

B. equal to the true weight

C. less than the true weight

D. more than the true weight

Answer:D

Explanation:- If lift is going up with acceleration, the apparent weight of a body is more than the true weight.

67. The rate of transfer of charges through a circuit is called?

A. Potential Difference

B. Resistance

C. Current

D. Energy

Answer:C

Explanation:- The rate of transfer of charges through a circuit is called Current. An electric current is the rate of flow of electric charge past a point or region. An electric current is said to exist when there is a net flow of electric charge through a region.

68. The filament of electric bulb is made up of :

A. Copper

B. Nichrome

C. Lead

D. Tungsten

Answer:D

Explanation:- An incandescent light bulb, incandescent lamp or incandescent light globe is an electric light which produces light with a filament wire heated to a high temperature by an electric current passing through it, until it glows. Tungsten, also known as wolfram, is a chemical element.

69. When a vibrating tuning fork is placed on a table, a loud sound is heard. This is due to –

A. reflection

B. refraction

C. forced vibrations

D. damped vibrations

Answer:C

Explanation:- The tendency of one object to force another adjoining or interconnected object into vibrational motion is referred to as a forced vibration. In the case of the guitar string mounted to the sound box, the fact that the surface area of the sound box is greater than the surface area of the string means that more surrounding air particles will be forced into vibration. This causes an increase in the amplitude and thus loudness of the sound.

70. Mud houses are cooler in summers and wanner in winters as compared to brick houses because

A. mud is a good conductor

B. mud is a bad conductor

C. mud is a poor insulator

D. evaporation of water causes cooling in summers and sunlight coming through holes causes warming in winters

Answer:B

Explanation:- The houses made of mud and thatched roofs are cool in summer and warm in winter as the thatched roof contains large amount of trapped air and also mud is a bad conductor of heat. In summer, the outside heat cannot enter the house and in winter, inside heat cannot flow outside.

71. Electricians use rubber gloves while working because -

A. rubber is an insulator

B. rubber is a good conductor

C. wearing rubber gloves is mandatory

D. rubber makes work easy

Answer:A

72. When a person sitting on a swing stands up on the swing, the frequency of oscillation –

A. decreases

B. increases

C. becomes infinite

D. does not change

Answer:B

Explanation:- In Simple Harmonic Motion, the frequency of the oscillation (1) is the number of oscillations per second which is expressed as f = 1/T where T is the time period (the time for the oscillator to complete one cycle).

73. Night photography and photopraphy in mist and fog are possible using –

A. ultra-violet radiation

B. infra-red radiation

C. microwave radiation

D. gamma radiation

Answer:B

Explanation:- Infrared is used in night vision equipment when there is insufficient visible light to see. Night vision devices operate through a process involving the conversion of ambient light photons into electrons which are then amplified by a chemical and electrical process and then converted back into visible light.

74. An Athlets runs before long jump to get advantage on –

A. Inertia of motion

B. Frictional force

C. Moment of a force

D. Principle of moments

Answer:A

Explanation:- An athlete does so to build up forward momentum so that when he jumps he already has a forward motion that would be greater than that of a jump made from standing in one spot. He needs forward momentum to get a good long jump and the best way is to have a running start. In this way, he gets advantage in terms of inertia of motion which is the tendency of an object to resist a change in motion.

75. In sunlight, a rose appears red. In green light, the same rose appears –

A. red

B. black

C. green

D. yellow

Answer:B

Explanation:- Any object which allows light to pass through it is known as a transparent object. The colour of any transparent object is the colour of the light transmitted by it. A red rose appears red in white light because it absorbs all colours except red. However, when seen in green light, it looks black because the red colour of the rose is absorbed by the green light.

76. The sparkling of a diamond is due to –

A. total internal reflection of light

B. interference of light

C. polarisation of light

D. refraction of light

Answer:A

Explanation:- Diamonds sparkle because of the total internal reflection of light. Diamonds have a very high refractive index, meaning they slow light down much more than glass; and if cut in the right manner, the angles of incidence can be made so that light seems to get 'trapped' within the diamond giving it it's sparkly appearance.

77. Ocean currents are an example of –

A. convection

B. conduction

C. insulation

D. radiation

Answer:A

Explanation:- Heat is transferred by convection in numerous examples of naturally occurring fluid flow, such as: wind, oceanic currents, and movements within the Earth's atmosphere. Winds and ocean currents are examples of convection currents. Convection serves to transfer heat from the surplus to deficit heat zones and set the oceanic circulation in motion.

78. Which of the following is a good conductor of heat but a bad conductor of electricity?

A. Celluloid

B. Rubber

C. Asbestos

D. Mica

Answer:D

Explanation:- Good conductors of heat are good conductors of electricity. Mica is an exception which although being a good conductor of heat and a bad conductor of electricity. It is commonly used in insulation of electricity between high heat generating transistors and their heat sink and or chassis to prevent grounding out of component and to assist in the transfer of the generated heat to the heat sink or chassis for dissipation.

79. A piece of wood is held under water. The up thrust on it will be:

A. equal to the weight of the Wood

B. less than weight of the wood

C. more than weight of the wood

D. Zero

Answer:B

Explanation:- According to the Archimedes' principle, a floating object will experience an upthrust force from water, equal to the weight of water displaced (pushed aside). It will sink into the water until it reaches the point where the weight of the water pushed aside equals its own weight.

80. In MRI machine, which one of the following is used?

A. Sound wave

B. X-ray

C. Ultra-sound wave

D. Magnetic wave

Answer:D

Explanation:- Magnetic resonance imaging (MRI), nuclear magnetic resonance imaging (NMRI), or magnetic resonance tomography (MRT) is a medical imaging technique used in radiology t o visualize internal structures of the body in detail. MRI makes use of the property of nuclear magnetic resonance (NMR) to image nuclei of atoms inside the body.

81. For a person having hypermetropia, the near point is –

A. greater than 25 cm

B. greater than 50 cm

C. less than 25 cm

D. infinity

Answer:A

Explanation:- For a hyper-metropic eye ,the near points shift away from the eye Le. farther away from the normal near point (25cm). In a hypermetropic eye, the light is not bent sufficiently so that it

focuses at a point behind the retina. Here a person sees well for distance but near vision is difficult and causes strain.

82. Amount of water vapour in the atmosphere is measured in terms of –

A. Humidity

B. Droplets

C. Smog

D. All of the above

Answer:A

Explanation:- Humidity is the amount of water vapor in the air. Water vapor is the has phase of water and is invisible. Humidity indicates the likelihood of precipitation, dew, or fog. Higher humidity reduces the effectiveness of sweating in cooling the body by reducing the rate of evaporation of moisture from the skin.

83. Name the process of production of energy in the Sun –

A. Nuclear fission

B. Radioactivity

C. Nuclear fusion

D. Ionization

Answer:C

Explanation:- The source of the sun's fuel is hydrogen and helium gases. Through a special chemical reaction, called nuclear fusion, the hydrogen gas is "burned" releasing an enormous amount of energy in the form of light and heat.

84. The ozone hole that has been detected lies in the atmosphere above –

A. Arctic Ocean

B. Antarctica

C. India

D. Alaska

Answer:B

Explanation:- Ozone layer, that is, the layer of life-protecting ozone found at the top of the stratosphere. Ozone is formed in the earth's stratosphere and is critical to life on earth as we know it. There is compelling scientific evidence that ozone is destroyed in the stratosphere and that some human-released chemicals are speeding up the breakdown of ozone in the atmosphere.

85. The device used to change the speed of an electric fan is –

A. Amplifier

B. Regulator

C. Switch

D. Rectifier

Answer:B

Explanation:- A voltage regulator is designed to automatically maintain a constant voltage level. A voltage regulator maybe a simple "feedforward" design or may include negative feedback control loops. It may use an electromechanical mechanism, or electronic components. Depending on the design, it may be used to regulate one or more AC or DC voltages. Electronic voltage regulators are found in devices such as computer power supplies where they stabilize the DC voltages used by the processor and other elements.

86. Which one of the following wavelengths of light is most effective in photosynthesis?

A. Blue

B. Green

C. Orange

D. Yellow

Answer:A

Explanation:- Photosynthesis, process by which green plants and certain other organisms use the energy of light to convert carbon dioxide and water into the simple sugar glucose. The wavelength most effective in conducting photosynthesis is 420nm. Actually, 420nrn is on the blue side of the spectrum, which makes up between 1 and 10% of the light needed for photosynthesis.

87. Why is it difficult to breathe at higher altitudes?

A. Due to low air pressure

B. Due to low temperature

C. Due to ozone

D. Due to high humidity

Answer:A

Explanation:- Low air pressure is usually the most significant limiting factor in high mountain regions. The percentage of oxygen in the air at 3.2 km is essentially the same as at sea level (21%). However, the air pressure is 30% lower at the higher altitude due to the fact that the atmosphere is less dense—that is the air molecules are farther apart. At high altitudes, the lower air pressure makes it more difficult for oxygen to enter our vascular systems.

88. The reason for a swimming pool to appear less deep than the actual depth is –

A. Refraction

B. Light scattering

C. Reflection

D. Interference

Answer:A

Explanation:- The apparent depth will look less that its real depth due to the refraction of light. Refraction is the bending of a wave when it enters a medium where it's speed is different. The refraction of light when it passes from a fast medium to a slow medium bends the light ray toward the normal to the boundary between the two media. The amount of bending depends on the indices of refraction of the two media and is described quantitatively by Snell's Law.

89. Alternating current is converted into direct current by a –

A. Transformer

B. Dynamo

C. Oscillator

D. Rectifier

Answer:D

Explanation:- A rectifier is an electrical device that converts alternating current (AC), which periodically reverses direction, to direct current (DC), which flows in only one direction. The process is known as rectification.

90. Remote-sensing device has an inbuilt source of –

A. X-ray

B. g-ray

C. Ultraviolet ray

D. Infrared ray

Answer:D

Explanation:- Infrared imaging is used extensively for military and civilian purposes. Military applications include target acquisition, surveillance, night vision, homing and tracking. Non-military uses include thermal efficiency analysis, environmental monitoring, industrial facility inspections, remote temperature sensing, short-ranged wireless communication, spectroscopy, and weather forecasting.

91. The atmosphere is heated mainly by –

A. Insulation

B. Conduction

C. Radiation

D. Convection

Answer:C

Explanation:- Changes in weather involve air movements, formation of clouds, and precipitation. Energy is needed to make all these things happen. That energy comes from the sun. Heat energy enters and moves through the atmosphere in three different ways. One way that heat energy is transferred is radiation. Hot bodies such as the sun radiate their energy mainly in the form of short waves.

92. The atmospheric layer reflecting radio waves is called –

A. Ozonosphere

B. Ionosphere

C. Stratosphere

D. Mesosphere

Answer:B

Explanation:- The ionosphere is a part of the upper atmosphere, from about 85 km to 600 km altitude, comprising portions of the mesosphere, thermosphere and exosphere, distinguished because it is ionized by solar radiation. It plays an important part in atmospheric electricity and forms the inner edge of the magnetosphere. It has practical importance because, among other functions, it influences radio propagation to distant places on the Earth.

93. 'Cryogenics' is a science dealing with –

A. high temperatures

B. low temperatures

C. friction and wear

D. growth of crystals

Answer:B

Explanation:- Cryogenics is the study of how to get to low temperatures and of how materials behave when they get there. Besides the familiar temperature scales of Fahrenheit and Celsius (Centigrade), cryogenicists use other temperature scales, the Kelvin and Rankine temperature scales. One of the more modern processes being used to treat metals (as well as other materials) is cryogenic tempering.

94. Heat from the Sun reaches the Earth by

A. Reflection

B. Conduction

C. Radiation

D. Convection

Answer:C

Explanation:- The radiation (light, heat, etc.) travels through the intervening 150,000,000 kilometers in 8 minutes. Radiation is a process in which energetic particles or energetic waves travel through vacuum, or through mattercontaining media that are not required for their propagation. Waves of a massive medium itself, such as water waves or sound waves, are usually not considered to be forms of "radiation" in this sense.

95. The commonly used thermometric substance is _____.

A. mineral oil

B. Alcohol

C. Mercury

D. Petrol

Answer:C

Explanation:- Thermometric liquids are used in thermometers to measure temperature. Mercury and alcohol are common thermometric liquids.

96. Gamma rays can cause –

A. gene mutation

B. sneezing

C. burning

D. fever

Answer:A

Explanation:- In molecular biology and genetics, mutations are accidental changes in a genomic sequence of DNA: the DNA sequence of a cell's genome or the DNA or RNA sequence in some viruses. These random sequences can be defined as sudden and spontaneous changes in the cell. Mutations are caused by radiation, viruses, transposons and mutagenic chemicals, as well as errors that, occur during meiosis or DNA replication.

97. The dimension of which of the following is the same as that of impulse?

A. Volume

B. Momentum

C. Torque

D. Change in the rate of momentum

Answer:B

Explanation:- The quantity of impulse is force x time interval. In classical mechanics, linear momentum or translational momentum is the product of the mass and velocity of an object. For example, a heavy truck moving fast has a large momentum—it takes a large and prolonged force to get the truck up to this speed, and it takes a large and prolonged force to bring it to a stop afterwards. If the truck were lighter or moving slower, then it would have less momentum.

98. Which among the following is the fundamental quantity?

A. Volume

B. Time

C. Velocity

D. Force

Answer:B

Explanation:- The fundamental qualities of Physics are the seven basic quantities that can be used to express all other physical quantities. These are as follows: Length: Metre, Heat: Kelvin, Time: second, Luminous Intensity: Candela, Mass: Kilogram, Electric Current: Ampere, and Amount of substance: Moles.

99. Global warming is expected to result in

A. Increase in level of sea

B. Change in crop pattern

C. Change in coast line

D. All of the above

Answer:D

Explanation:- Global warming is the rise in the average temperature of Earth's atmosphere and oceans since the late 19th century and its projected continuation. Since the early 20th century, Earth's mean surface temperature has increased by about 0.8 °C (1.4 °F), with about two-thirds of the increase occurring since 1980. The effects of an increase in global temperature include a rise in sea levels and a change in the amount and pattern of precipitation, as well a probable expansion of subtropical deserts.

100. A transformer works on the principle of –

A. Self induction

B. Mutual induction

C. Generator

D. Inverter

Answer:B