

Science: Physics

- 1) If the window pane of the airplane flying at a very high altitude is broken suddenly, then _____.
 - a) Inner objects will get ejected out of the broken window
 - b) Outer air will rush in
 - c) Inner air pressure will increase
 - d) None of these will happen

- 2) Plastic bags can be recycled but the handles of pressure cooker cannot be reused because _____.
 - a) Handles are black in colour
 - b) They break frequently
 - c) These are bad conductors of heat
 - d) Handles cannot melt

- 3) A closed conductor having steam was observed to develop droplets of water on the outer surface on cooling. In this process the total _____.
 - a) Mass has increased
 - b) Size has increased
 - c) Mass has decreased
 - d) Mass remains unchanged

- 4) In which of the following would the work done is maximum if the same body is moved through a distance of 5 m?
 - a) When pushed along a incline of a plane
 - b) When lifted vertically upward
 - c) When pushed over smooth rollers
 - d) When pushed along a horizontal surface

- 5) Melting point of ice _____.
 - a) Increases with increasing pressure
 - b) Decreases with increasing pressure
 - c) Is exponential to the pressure
 - d) Is independent of pressure

- 6) Copper is generally used in calorimeters because _____.
 - a) Is cheap and easily available
 - b) Does not get rusted
 - c) Is easy to mould it in the required shape
 - d) Quickly attains the temperature of the liquid contained in it

7) If the different particles of the body travel _____ then the body has translational motion.

- a) Perpendicular to each other
- b) Parallel to each other
- c) Making constant particular angle with one another
- d) All the above alternatives are true

8) Two tourists who are at distance 40 km from their hotels want to reach the hotel in the shortest possible time. They have a bicycle which they decide to use turn by turn. They agree to leave the bicycle at intermediate points between which, one walks and other rides the bicycle. Both can walk with the speed of 5 km/hour and ride the bicycle with 15 km/hour.

What will be the mean speed of the tourists?

- a) 10 km/hour
- b) 7.5 km/hour
- c) 5 km/hour
- d) None of the above

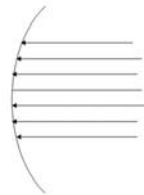
9) How much time the bicycle will remain unused?

- a) 2 hours
- b) 1 hour
- c) 2 hours 40 minutes
- d) It will never remain unused

10) Substance A conducts electricity in molten state. Hence A is _____.

- a) Urea
- b) Aluminum sulphate
- c) Sugar
- d) Polyester

11) If the sound waves, parallel to the axis were incident on concave mirror as shown in figure below then after reflection they will _____.



- a) Meet at the center of the curvature
- b) Meet at the principal focus
- c) Go in reverse direction
- d) Go in different direction

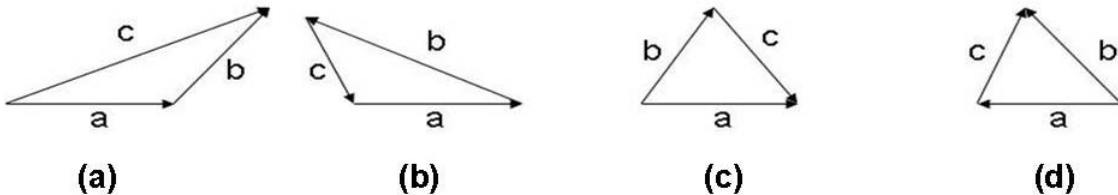
12) The angle between the line joining geomagnetic north and south poles and the line joining the geophysical north and south is _____.

- a) 17°
- b) $11\frac{1}{2}^{\circ}$
- c) Changes with time
- d) None of the above

13) Fuse boxes are made up of china clay as it is_____.

- a) Good conductor of heat
- b) Good conductor of electricity
- c) Bad conductor of heat
- d) Bad conductor of electricity

14) Which is the correct diagram representing $a + b + c = 0$



15) Which of the following properties is different for solids, liquids and gases?

- a) Movements of molecules
- b) Particle size of a substance
- c) Mass of the substance
- d) Energy exchanges

16) If pressure is applied on a substance its boiling point_____.

- a) Decreases
- b) Increases
- c) Remains same
- d) Some times increases, some times decreases

17) Which of the following is a renewable energy source?

- a) Bitumen
- b) Solar Energy
- c) Coal
- d) Natural Gas

18) The objective of energy management is _____.

- a) To minimize energy costs
- b) To minimize environmental effects
- c) Both a) and b)
- d) None of the above

19) Energy available in fuels is stored as _____.

- a) Heat Energy
- b) Chemical Energy
- c) Atomic Energy
- d) Explosive Energy

20) Which of the following are pollutant gases?

- a) Carbon monoxide
- b) Sulphur dioxide
- c) Both a) and b)
- d) None of the above

21) Which of the following are renewable sources?

- a) Ground water
- b) Forests
- c) Both a) and b)
- d) Soil

22) Which of the following are non - renewable sources?

- a) Fossil fuels
- b) Mineral ores
- c) Both a) and b)
- d) None of the above

23) What happens when two forces act in the same direction?

- a) They cancel each other
- b) The stronger one prevails
- c) They add together
- d) Their sum divided by two is the total force

24) Force equals mass times _____.

- a) Speed
- b) Motion
- c) Acceleration
- d) Inertia

25) The force of gravity on a person or object at the surface of a planet is known as _____.

- a) Mass
- b) Inertia
- c) Air resistance
- d) Weight

26) Primarily air pressure decreases as _____.

- a) Velocity increases
- b) Elevation increases
- c) Acceleration decreases
- d) Gravity increases

27) If the density of an object is equal to the density of the fluid in which it is immersed, _____.

- a) The object sinks
- b) The object rises
- c) The object will sink, then rise, then keep repeating this cycle
- d) The object neither rises nor sinks but instead floats at a constant level

28) Which of the following devices produces electric current?

- a) Generator
- b) Stereo speaker
- c) Galvanometer
- d) Electric motor

29) _____ flows in only one direction through a wire.

- a) Alternating current
- b) Direct current
- c) Voltage
- d) Electric current

30) In general _____ of A. C. changes

- a) Strength
- b) Amount
- c) Voltage
- d) Direction

31) Why do power plants commonly produce alternating current?

- a) Voltage of alternating current can be increased or decreased with transformers.
- b) It is more economical to produce.
- c) It does not lose energy as heat when transmitted over long distances
- d) Less resistance is created in the wire

32) You can see yourself in a mirror because of _____ light.

- a) Absorption
- b) Reflection
- c) Diffraction
- d) Refraction

33) The mass of a proton is _____ times the mass of an electron.

- a) 1857
- b) 1836
- c) 1900
- d) 1863

34) Neutrons are _____.

- a) Negatively charged particles outside the nucleus
- b) Positively charged particles inside the nucleus
- c) Neutral particles
- d) None of the above

35) These materials conduct electricity under normal circumstances.

- a) Insulators
- b) Conductors
- c) Semiconductors
- d) None of the above

36) Nucleons correspond to the number of _____.

- a) Electrons
- b) Protons
- c) Neutrons
- d) Neutrons and Protons

37) A steam engine converts thermal energy into _____.

- a) Electrical energy
- b) Magnetic energy
- c) Mechanical energy
- d) Chemical energy

38) The steam engine was invented by _____.

- a) James Watt
- b) Joule
- c) Newcommen
- d) Einstein

- 39) A solar cooker is painted black from inside because _____.
- a) It looks good
 - b) The black colour absorbs the maximum energy from the sun enhancing the efficiency of the solar cooker
 - c) The black colour has a property of reflecting the infrared radiations which are not required for cooking
 - d) None of the above
- 40) Between which two planets are asteroids located _____.
- a) Mars and Jupiter
 - b) Pluto and Jupiter
 - c) Earth and Mars
 - d) Mercury and Jupiter
- 41) The nearest planet to the sun is _____.
- a) Venus
 - b) Mercury
 - c) Earth
 - d) Mars
- 42) Light from the sun reaches the earth in about
- a) 450 s
 - b) 475 s
 - c) 520 s
 - d) 500 s
- 43) The molten material just below the outermost layer of the earth is _____.
- a) Core
 - b) Magma
 - c) Lava
 - d) Crust
- 44) Ozone layer absorbs _____.
- a) Infrared radiation
 - b) Electromagnetic radiation
 - c) Ultraviolet radiation
 - d) All of the above
- 45) Mankind made their mark in space first by the satellite
- a) Aryabhata
 - b) Apollo C.
 - c) Sputnik-I
 - d) Apollo 11

46) Satellite does not normally mean _____.

- a) Meteor
- b) Man made objects revolving around an earth
- c) Celestial bodies revolving around a planet
- d) None of the above

47) Materials that allow light to pass but through which objects cannot be clearly seen are said to be

- a) Opaque
- b) Transparent
- c) Translucent
- d) None of the above

48) The partly lighted area of a shadow on the periphery of the totally shaded portion is called the _____.

- a) Eclipse
- b) Penumbra
- c) Umbra
- d) Anything

49) In a given (homogeneous) medium light always travels in straight lines.

- a) False
- b) True
- c) Some time true some times false
- d) None of the above

50) Materials through which light cannot pass are said to be _____.

- a) Opaque
- b) Transparent
- c) Translucent
- d) None of the above

51) Bodies that radiate light are called _____.

- a) Opaque
- b) Luminous
- c) Non-luminous
- d) Transparent

52) Non-luminous bodies become visible when they _____ light into our eyes.

- a) Refract
- b) Radiate
- c) Reflect
- d) Transmit

53) Which of the following statements is false?

- a) There is one Neutron in Hydrogen atom**
- b) There is one Proton in Hydrogen atom**
- c) Hydrogen atom is electrically neutral**
- d) There is one electron in Hydrogen atom**

54) Real image is always _____.

- a) Inverted and Magnified**
- b) Inverted**
- c) Erect and Diminished**
- d) Erect and Magnified**

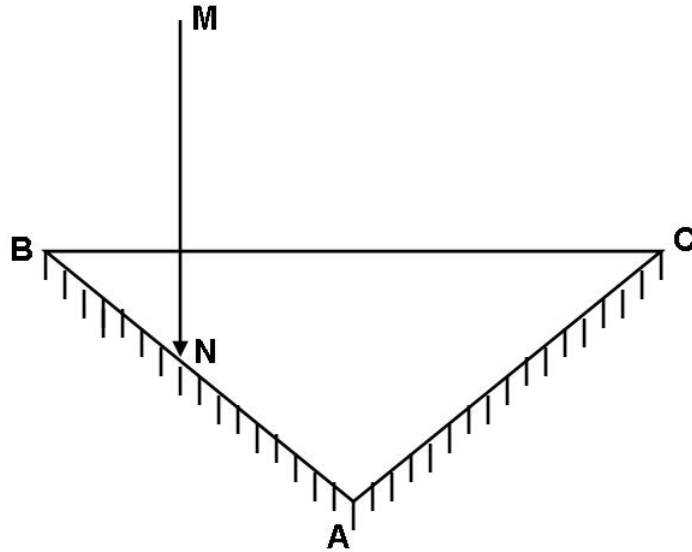
55) A boy decorates a Christmas tree kept in the corner of the room using stars, balls, bells, rings, all made from shining material. In which of the objects he can see the full image of the room?

- a) Ball**
- b) Star**
- c) Pipe**
- d) Bell**

56) In a single touch method of magnetization, opposite pole is developed where the rubbing action stops, because _____.

- a) There is attraction between unlike poles**
- b) The particles of magnetic material get oriented in a particular direction**
- c) Each particle of magnetic material is a magnet**
- d) All the above alternatives are true**

57) Two plane mirrors AB and AC of equal lengths are placed as shown in the figure making an angle of 90° with each other. BC is horizontal. A ray MN is incident on the mirror AB and is perpendicular to BC. What will be the direction of emergent ray?



- a) It will be parallel to BC
- b) It will be parallel to AB
- c) It will be parallel to MN
- d) It will be parallel to AC

58) Following Planetary sequence, away from the Sun is _____.

- a) Mercury, Venus, Mars, Earth
- b) Mercury, Mars, Venus, Earth
- c) Mercury, Venus, Earth, Mars
- d) Mars, Mercury, Venus, Earth

59) Stars are _____.

- a) Illuminated by the Sun, hot and bright
- b) Self luminous but bright
- c) Self luminous and hot
- d) None of the above

60) Original hot liquid substance in the interior of Earth may have cooled down by _____ process.

- a) Conduction
- b) Radiation
- c) Convection
- d) All above

61) In the lower part of the Crust called 'Sima' proportion of _____ and _____ is higher.

- a) Silica, Aluminum
- b) Silica, Copper
- c) Bauxite, Silica
- d) Silica, Magnesium

62) In _____ seismic wave the movement of the particles is perpendicular to the direction of the waves.

- a) Primary
- b) Secondary
- c) Tertiary
- d) All

63) When two bodies A and B are immersed in the water, it is found that loss of weight of each body is same. It can be therefore inferred that_____.

- a) They have same weight in air
- b) They have same densities
- c) They have same weight in water
- d) They have the same volume

64) The discovery of the efficacy of steam power led to the invention of the locomotive. Who was its inventor?

- a) Henry Cart
- b) James Watt
- c) George Stephenson
- d) John McAdam

65) Unit of weight is_____.

- a) Kg
- b) Kgm / sec
- c) Kgm /sec²
- d) oule

66) Pressure is _____ .

- a) Force acting on unit area of surface
- b) Force acting on a unit area in a direction perpendicular to the surface
- c) Unit force acting on unit area in a direction perpendicular to the surface
- d) Product of perpendicular force and area

67) Air pressure exists near latitudes 30⁰ N and 30⁰ S is _____ .

- a) Low
- b) High
- c) Moderate
- d) Changes uniformly

68) The image of an object placed between F and 2F in front of a convex mirror is always _____

- a) Real and Magnified
- b) Real and Diminished
- c) Virtual and Magnified
- d) Virtual and Diminished

69) If opaque object is placed in beam of light from point source then shadow of object is_____.

- a) On same side as that of object
- b) Diminished
- c) Magnified
- d) a) and c)

70) A ray of light is incident on a plane mirror at an angle of 30° . The ray after reflection is deviated through _____

- a) 90°
- b) 60°
- c) 30°
- d) 120°

71) Sure test of Magnetism is_____.

- a) Repulsion
- b) Attraction
- c) Both a) and b)
- d) Neither a) nor b)

72) In an Electric motor conversion of_____.

- a) Chemical energy into electrical energy
- b) Electrical energy into mechanical energy
- c) Electrical energy into Light
- d) Electrical energy into Chemical energy

73) In what time will a train 100 m long with a speed of 50 km/hour cross a pillar?

- a) 7.0 seconds
- b) 72 seconds
- c) 7.2 seconds
- d) 70 seconds

74) The two plane mirrors are set at right angle and a flower is placed between the mirrors. The number of images of the flower which will be seen are_____.

- a) 1
- b) 2
- c) 3
- d) 4

75) Light year is unit of

- a) Time
- b) Distance
- c) Velocity
- d) Acceleration

76) Ozone layer protects us by absorbing _____ from incoming radiation.

- a) X-rays
- b) Alfa rays
- c) UV rays
- d) Sun

77) The dynamo acts as a _____.

- a) Converter of energy
- b) Source of electric charge
- c) Source of magnetic charge
- d) Source of energy

78) When the real image, in a concave mirror of a focal length 'f', of an object at a position A, is formed at A itself, then the distance between mirror and object is:

- a) f
- b) Greater than 2f
- c) 2f
- d) Less than 2f

79) Microphone is used to convert _____.

- a) Electrical energy into sound energy
- b) Sound energy into electrical energy
- c) Sound energy into mechanical energy
- d) Sound energy into chemical energy

80) Greased paper is _____.

- a) Transparent body
- b) Translucent body
- c) An opaque body
- d) Sometimes transparent and sometimes translucent

81) In a search light source is placed at _____.

- a) Pole of the concave mirror
- b) Focus of the concave mirror
- c) Radius of curvature of the mirror
- d) Any where

82) Pointed earthed conductors are mounted on buildings to_____.

- a) Repel charged clouds
- b) Remove charges induced by clouds
- c) Collect charges from the clouds and pass them to the earth
- d) Serve as antenna for radio sets

83) Transformers are used to _____.

- a) Convert AC to DC
- b) Convert DC to AC
- c) Step up DC voltage
- d) Step up or step down AC voltage

84) 120 m long train is moving towards West at speed 10 m/s. A small bird flying toward East with a speed 5 m/s crosses the train. The time taken by the bird to cross the train would be_____.

- a) 24 sec
- b) 16 sec
- c) 12 sec
- d) 8 sec

85) An egg sinks into the water but starts floating if common salt is added to the water. It happens because _____.

- a) The density of egg decreases and becomes lighter
- b) The density of water increases and the egg becomes lighter
- c) The density of the solution increases and the egg is pushed enough up due to the thrust
- d) The density of water as well as egg decreases

86) Challenger is the name of _____.

- a) Space lab
- b) Space shuttle
- c) Satellite
- d) Rocket

87) If you float on your back on the surface of water, your weight is_____.

- a) Equal to your normal weight
- b) Half of your normal weight
- c) Zero
- d) Greater than the weight of the water displaced by you

88) A beaker containing water weighs 100 gm. It is placed in a pan of a balance and a piece of metal weighing 70 gm and having a volume of 10 cc is hanged to sink inside the water in a beaker. The weight of the beaker and the metal would be _____.

- a) 170 gm
- b) 110 gm
- c) 100 gm
- d) 30 gm

89) A hydrogen filled balloon expands as it rises and may even burst after rising very high in the atmosphere. This happens because _____.

- a) The temperature increases with height
- b) The temperature decreases with height
- c) Atmospheric pressure increases with height
- d) Atmospheric pressure decreases with height

90) The attraction of similar molecules for each other is known as _____.

- a) Electromagnetic
- b) Adhesion
- c) Cohesion
- d) Gravitation

91) The ultimate source of heat on the surface of the Earth is _____.

- a) Solar energy
- b) Radiation energy
- c) Nuclear energy
- d) Inner temperature of Earth's crust

92) The radius of curvature of plane mirror is _____.

- a) Zero
- b) Infinite
- c) Negative
- d) Finite

93) The positive charge on proton is _____.

- a) Double the negative charge on electron
- b) Half the negative charge on electron
- c) Equal to the negative charge on electron
- d) Has no relation to the charge on electron

94) When a glass rod is rubbed against the silk _____.

- a) Negative charge produced on silk but no charge on glass rod
- b) Equal but opposite charges are produced on both
- c) Equal and similar charges are produced on both
- d) Positive charge is produced on glass but no charge is produced on silk

95) Electric charge given to the hollow conductor resides _____.

- a) On the outer surface
- b) At the center
- c) On the inner surface
- d) Uniformly on outer as well as inner surface

96) Gold leaf electroscope is used _____.

- a) To measure the electric charge
- b) To detect and test small electric charges
- c) To produce electric current
- d) To produce electric charges

97) Mass of electron is _____.

- a) $\frac{1}{1850}$ gm
- b) 0.1 gm
- c) 9.1×10^{-31} kg
- d) None of the above

98) Which of the following is magnetic substance?

- a) Mercury
- b) Iron
- c) Gold
- d) Silver

99) A magnet can be demagnetized by _____.

- a) Hammering the magnet
- b) Putting it in water
- c) Cooling it
- d) Putting it in contact with iron

100) By removing the inducing magnet, the induced magnetism is _____.

- a) Finished after some time
- b) Finished just after
- c) Not finished for long time
- d) Not changed

101) A bar of soft iron is placed on flat table. A bar magnet is taken and its south pole is placed on one end of the bar of soft iron. The magnet is held almost vertically. The bar is stroked from one end to the other with magnet. On the other end of the bar, magnet is lifted and again placed on the first end and the bar is again stroked. The end of the bar where the magnet is lifted will be _____.

- a) South Pole
- b) No pole
- c) South and North pole both types
- d) North pole

102) Sudden fall of a barometer reading indicates_____.

- a) Storm
- b) Dry Weather
- c) Fine weather
- d) Cold Weather

103) If a ball and a rectangular block completely immersed in a liquid, have the same loss of weight, then _____.

- a) Ball and rectangular block have same density
- b) Ball and rectangular block have same weight in air
- c) Ball and rectangular block have same volume
- d) Ball and rectangular block have immersed in liquid to the same depth

104) A sharp knife is much better than a blunt one because_____.

- a) Area of sharp edge of knife is much less than the area of blunt one
- b) Sharp knife is brighter
- c) Sharp knife is colder
- d) Sharp knife is costly

105) In a shadow of an object, produced by an extended source of light, umbra is not observed when_____.

- a) Source is bigger than the object and the screen is far away from it
- b) Source is bigger than the object and screen is very close to it
- c) Source is smaller than the object and screen is far away from it
- d) Source is smaller than the object and screen is very close to it

106) A block of wood sinks $\frac{1}{6}$ th of its volume in liquid A and $\frac{1}{5}$ th of its volume in liquid B , then the ratios of densities of the two liquids must be_____.

- a) 6: 5
- b) 11: 5
- c) 5: 6
- d) 1: 5

107) A boy will have maximum weight in _____

- a) Kerosene
- b) Air
- c) Vacuum
- d) Water

108) We can see all objects in our room at day time because_____.

- a) Windows are open
- b) The objects give out light
- c) Objects are white in colour
- d) Light scatters in all directions

109) In an electric current, electrons flow from _____ end to the _____ end of the cell.

- a) Positive, negative**
- b) Negative, positive**
- c) Lower, upper**
- d) Upper, lower**

110) At high altitudes, mountaineers may suffer from bleeding through nose or ears because at such places_____.

- a) The difference in atmospheric pressure and blood pressure is very large**
- b) The density of blood is higher**
- c) The blood pressure is high**
- d) The body does not get enough oxygen**

111) _____ is used to make solar cell.

- a) Mica**
- b) Lead plates**
- c) Silicon**
- d) Lead oxide plates**

112) _____ power station is set up at Koradi.

- a) Hydroelectric**
- b) Atomic**
- c) Solar**
- d) Thermal**

113) Wooden block when floats in kerosene sinks more in kerosene than it sinks in water because_____.

- a) Density of wood is less than water**
- b) Floating body displaces water equal to mass of immersed part**
- c) Density of kerosene is less than the density of water**
- d) Floating body displaces its own weight**

114) _____ of sunlight makes our surrounding visible.

- a) Reflection**
- b) Diffraction**
- c) Refraction**
- d) Irregular reflection**

115) There are two women of same weight. One is wearing shoes with pointed heels, while other is wearing shoes flat heels. Both are standing on a soft wooden floor. The shoes with pointed heels makes deeper dent than the shoes with flat heels. Which physical quantity is involved in above observation?

- a) Force
- b) Momentum
- c) Pressure
- d) Work

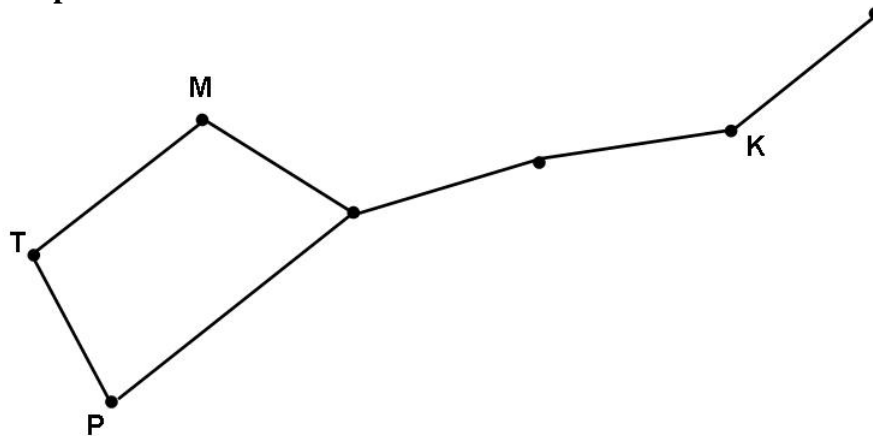
116) How many different rays can strike the plane mirror at the same point, with the same angle of incidence?

- a) One
- b) Zero
- c) Infinity
- d) Two

117) What is the maximum voltage in our domestic electric supply?

- a) 200 V DC
- b) 230 V AC
- c) 230 V DC
- d) 200 V AC

118) Which alphabet indicates South direction?



- a) MT
- b) KP
- c) PT
- d) TP

119) The total lunar eclipse is visible at the most for _____

- a) 105 minutes
- b) 75 minutes
- c) 125 minutes
- d) 150 minutes

120) In a simple barometer, height of mercury column is measured _____.

- a) From the Bottom of the bowl
- b) From the mercury level in bowl
- c) From the lower end of the long glass tube
- d) Any other

121) Ship floats on water because _____.

- a) Density of ship is less than the water
- b) Weight of displaced water is greater than the weight of the ship
- c) Weight of the immersed part of the ship is equal to the weight of the displaced water
- d) Weight of displaced water is equal to the weight of whole ship

122) A _____ beam is one whose rays remain the same distance apart.

- a) Convergent
- b) Divergent
- c) Parallel
- d) Intersecting

123) A bullet is fired from a Gun, the momentum of a bullet is:

- a) More than the Gun
- b) Less than the Gun
- c) Same as that of the Gun
- d) Cannot be compared

124) A body is dropped from the tower of height S_1 , it reaches the ground after t_1 seconds. If the height of tower is increased four times, the time required by the stone to reach the ground is t_2 , then

- a) $t_2 = t_1$
- b) $t_2 = 4t_1$
- c) $t_2^2 = 4t_1^2$
- d) $t_2^2 = \sqrt{2} t_1^2$

125) Which of the following unit is different from others?

- a) Micron
- b) Light year
- c) Mole
- d) Angstrom