GEN DAVID TUTORIAL {UPDATED QUESTIONS ON PHY102}

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1. A telescope that uses two converging lenses is called (a). Refraction (b). Compound (c). Simple (d). Reflection

Answer:

2. Which of the following cannot travel through a vacuum (a). Sound (b). Visible (c). Gamma (d). Radio

Answer:

3. The following are properties of waves except (a), Reflection (b). Transverse (c). Diffraction (d). Refraction

Answer:

4. When friction reduces, natural energy of system as time passes motion is said to be (a). Random (b). Damped (c). Linear (d). Simple

Answer:

5. Natural frequency of a given string can be changed by changing its (a). Stiffness (b). Diameter (c). Length

Answer:

6. Heat can be transferred by these process except (a). Radiation (b). Convection (c). Conduction (d). Evaporation

Answer:

7. _____ generate illuminous source of light

Answer:

8. What happened at the rays in a parallel beam of light

Answer:

9. The wave found under the water is

Answer: Intensity

10. The lens thinner at the middle but thicker at the edge is (a). Diverging (b). Converging

Answer:

11. A resistor used as ammeter is called (a).

Answer:

12. A resistor used as voltmeter is called (a).

Answer:

13. Virtual image can be photographed only with the help of ____

Answer:

14. A copper wire has a resistance of 10Ω at 20˚C. What will be the resistance at 80˚C

Answer:

15. A galvanometer measuring current from 0 to 1ma has resistance of 40 ohms. What value of resistor in parallel the galvanometer will use to measure current from 0 to 1A (a). 0.04∩ (b). 2.53η (c). 0.24η (d). 1.42η

16. If 100wave pass through a medium 20s and there wavelength is 6cm its velocity? (a). 0.3m/s (b). 0.5m/s (c). 1m/s (d). 25m/s

17. Determine the up thrust on the iron cube of V=400cm if it totally immersed in oil of density 0.8gcm (a). 4.0N (b). 8.3N (c). 2.4N (d). 3.2N

18. A telescope that uses 2 converging lenses is called (a). Refractive (b). Compound (c). Simple (d). Reflection

19. Water wave is _____? (a). Longitudinal (b). Electromagnetic (c). Chemical

20. Which waves are used for underwater communication (a). Radio wave (b). Infrasonic

21. A positive charge 3 micro coulomb is surrounded by a sphere with a radius of 0.20m centered on ice charge in the electric flux in the sphere?

22. Artificial damped oscillation?

23. The variation of focal length from a sharp image on retina is (a). Retina center (b). Shutter (c). Apartive (d). Accommodation

24. When light enters glass from air (a). Its wave length increases and velocity increases (b). Its frequency increases and velocity increases (c). Its frequency decreases and velocity decreases (d). Its wavelength and velocity decreases

25. The eclipse of the moon occurs when? (a). When the earth is between the sun and moon (b). Moon is between the sun and earth (c). Earth is between the sun and moon

26. A 4mf capacitor is used in a radio circuit through which a 5mf alternating current of 60HZ flows. The reactance of the capacitor is (a). 6.635 (b). 66.35 (c). 63.6 (d). 663.15

27. The series resonance circuit is used for (a). Resonance wave tube experiment (b). Oscillating radio wave (c). Tuning radio receiver (d). Minimizing circuit heat

28. A spherical mirror whose inner surface is silvered is ___ (a). Concave mirror (b). Convex mirror (c). Plane mirror (d). Curved mirror

29. Which waves are used for underwater communication (a). Ultrasonic (b). Radio wave (c). Infrasonic (d). Microwaves

30. A mirror whose size of the image is smaller than the object ____ (a). Concave mirror (b). Convex mirror (c). Plane mirror (d). Spherical mirror

31. The distance between optical center and focal length (a). Radius (b). Half length (c). Focal length (d). Principal axis

32. If the acceleration of a body to its distance is directly proportional to its distance from a fixed point and is always directed towards the fixed point. The motion is__? (a). Translational (b). Random

33. A copper wire has a resistance of 10.0ohms at 20˚c what will be the resistance at 80˚c (a). 1.2η (b). 2.4η (c). 5.5Ω (d). 4.6Ω

34. The coefficient of friction between perfect smooth body and a very rough body is (a). 2.0 (b). Zero (c). 0.5 (d). 1.0

35. When brick is taken from the earth surface to the moon, it mass becomes (a). Increases (b). Remain constant (c). Reduces (d). Become zero

36. Calculate the increases in length when 1000cm of steel wire of linear expensivity 1.2×10^5 per degree is heated from 0 to 50 degree Celsius (a). 1.2×10^{-2}cm (b). 6.0×10^{-4} (c). 1006.0 (d). 6.0^{-3}

37. The following are the properties of simple microscope except (a). Virtual (b). Small magnification (c). Less distorted (d). Object placed between principal focus and the pole of lens

38. The size of the image depend on the position of the object in (a). Convex mirror (b). Silver mirror (c). Plane mirror (d). Concave mirror

39. Which of the following is correct for an object placed in the center of curvature (a). Virtual, Erect, Magnified (b). Real, Inverted, Magnified (c). Virtual, Erect, Diminished (d). Real, Inverted, Magnified

40. Find the electric field intensity of an object whose potential is 3.6V and distance of 30m (a). 12.0V/M (b). 8V/M (c). 24V/M (d). 18V/M

41. A 200KW experience voltage of 40.0v, find its current (a). 0.5A (b). 0.05A (c). 50.00A (d). 5.00A

42. The oscillation of system in the presence of some resistive force are (a). Random oscillation (b). Damped oscillation (c). Simple harmonic oscillation (d). Linear oscillation

43. Example of repetitive to and fro motion about a mean position (a). Piston in gasoline engine (b). Mass hanging from a coiled spring (c). Balance wheel of a watch (d). A car going to Kaduna

44. The three capacitor of
0.3
$\mu f, 0.2\mu f, the\ joint\ capacitance\ when\ arrange\ to\ give\ minimum\ capacitance\ is\ (a).1.0\ (b).0.2\ (c).0.1\ (d).0.3$

45. Two 240Ω light bulbs are connected in series with a 120V power source, calculate the current of each bulbs. (a). 0.25A (b). 0.20A (c). 0.22A

46. A light spiral spring is loaded with mass 200g and it extends by 5cm. what is the period <take g=10m/> (a). 0.63s (b). 1.65s (c). 0.44s

47. A point charge of 2.0×10^{-7}C experienced force of 0.02N in uniform electric field. Calculate the magnitude of strength of the field (a).$4\times10^{-9}N/C$ (b). $1\times10^{-5}N/C$ (c). $1\times10^{-19}N/C$ (D). $1\times10^{5}N/C$

48. _____ mirror curves inwardly (a). Concave mirror (b). Convex mirror (c). Reflection mirror (d). Plane mirror

49. Which of the following is not a ferromagnetic material (a). Iron (b). Steel (c). Cobalt (d). Copper

50. An eye defect by which an image appears at a different plane is called (a). Myopia (b). Hyper myopia (c). Astigmatism

51. Which of the following cannot receive ultrasonic (a). Bat (b). Dolphin (c). Human being (d). Cat

52. A light spiral spring is loaded with mass of 250g and it extends by 10cm. What is frequency of small vertical oscillation (g=10m/s) (a). 1.30HZ (b). 2.20HZ (c). 1.63HZ (d). 1.59HZ

53. The belief that light consists of tiny particles can be attributed to (a). Early Greek (b). James Maxwell (c). Isaac Newton (d). Michael faraday

54. Artificial damped oscillations are (a). Heavy critical and solid (b). Critical, heavy and light (c). Solid, critical and light (d). Solid, light and heavy

55. An electric current has the following except (a). Heating effect (b). Tuning effect (c). Magnetic effect (d). Chemical effect

56. A light spiral spring loaded with mass 50g and it extends by 30g.what is the frequency of small vertical oscillation g=10m/s (a). 0.45Hz (b). 0.23HZ (c). 1.59HZ (d). 0.92HZ

57. Water wave are (a). Mechanical (b). Electromagnetic (c). Chemical (d). Longitudinal

58. The following are the defects of lenses except (a). Distortion (b). Accommodation (c). Chromatic aberration (d). Coma

59. Three capacitors of value 8 $\mu f, 16\mu f \; and \; 32\mu f \; are \; connected \; in \; series \; , the \; total \; capacitance \; will \; be \; (a). 7.32\mu f \; (b). 56\mu f \; (c). 32\mu f \; (d). \frac{32}{7}\mu f$

60. A bulb 60w, find the current passing through it, when it is connected in series with a supply

61. Which of the following instutient will accurately measure the EMF of a cell

62. Who stated this law that the direction of an induced EMF is always such as to oppose the change producing it.

63. Alternating current is preferable than DC for the transmission of power because

64. When a current flow in opposite direction through two conductor placed parallel and close to each other, what is produced between them is known as _____

65. A copper wire has the resistance of 10.0ohms at 20℃ what will be the resistance of 80˚c (a). 1.2ohms (b). 2.4ohms (c). 5.5ohms (d). 4.6ohms

66. Much are obtain when cells are joint in series: (a). Current (b). Potential Difference (c). Friction (d). Resistance

67. The change of direction of wave front? Due to change in velocity? (a). Refraction (b). Reflection (c). Polarization (d). Difference

68. A device used in increasing visual angle to the eye by an object being observed is (a). All of the below (b). Optical instrument (c). Mirror (d).Lens

69. Three capacitor of capacitance 2μf,4μf,8μf are connected in parallel and a P.D of 6V is maintained across each capacitor, the total energy is? (a). $6.90\times10^{-6}J \; (b). 2.52 \times 10^{-4}J \; (c). 6.90 \times 10^{-4}J \; (d). 2.52 \times 10^{-6}J$

70. The variation in image magnification is called (a). Chromatographic (b). Distortion (c). Coma (d). Acceleration

71. Any systems which obeys____can exhibit simple harmonic motion (a). Hooke`s law (b). Theo renin theorem (c). Teirch off law (d). Superposition theorem

72. Velocity of simple harmonic motion is always _____ (a). Minimum (b). Zero (c). Maximum (d). Negative

73. Natural frequency of a suiter, can be changed by changing (a). Diameter (b). Stiffness (c). Area (d). Length

74. The quality which does not change during refraction is__ (a). Speed (b). Wavelength (c). Frequency (d). Direction

75. Determine the up thrust on the iron cube of volume $400cm^3 \; of \; its \; totally \; immeresed \; in \; oil \; of \; density \; 0.8gcm^{-3}$

(a). 3.2N (b). 8.3N (C). 4.0N (d). 2.4N

76. Calculate the increases in length when 10000cm of steel wire of linear expansivity 1.2×10^5 degree Celsius is heated from 0 to 50˚c (a). 1006.0cm (b). $6.0\times10^{-3}cm$ (C). $1.2\times 10^{-2}\,cm$ (D). $6.0\times 10^{-4}cm$

77. Power is the rate of which _____is done (a). Work (b). Energy (c). Force (d). TIME

78. _____ IS used in measuring the fluid density in a car (a). Hydrometer (b). Hygrometer (C). Barometer (d). Manometer

79. Which of the following wave is used in determining the ocean depth (a). Refraction (b). Reflection (c). Refraction (d). Diffraction

80. Which of the following is not a property of light (a). Reflection (b). Refraction (c). Photoelectric effect (d). Diffraction

81. Separation of white light into its component color is _____ (a). Dispersal (b). Spectral emission (c). Spectrum

1. If the spring is stiff, then the value of k is _____
a) Approximately zero
b) Moderate
c) Large
d) Small
2. Which of the following wave is not electromagnetic
a) Radiowave
b) Sound wave
c) X –ray
d) Infra-red ray
3. The following are examples of repetitive to and fro motion about a mean position
a) A piston in a gasoline engine
b) A mass hanging from a coiled spring
c) Balance wheel of a watch
d) A car going to kaduna
4. Heat can be transferred by these process except
a) Radiation
b) Conduction
c) Evaporation
d) Convection
5. Determine the upthrust on a iron cube of volume $40cm^3$ of totally immersed in oil of density $0.8gcm^3$
a) 8.3N b. 2.4N c. 4.0N d. 3.2N
6. Which of the following is not a wave length
a) Radiaton b. conduction c. convection d. evaporation
7. Power is the rate of a. Energy b. Kinetic c. Work d. Mechanical Energy
8. The following are properties of wave except
a) Transverse b. diffraction c. refraction d. reflection
9. _____ lens curves inwardly
a) Reflection b. concave mirror c. convex mirror d. plane mirror
10. The unit of electric field intensity is
a) Newton per second b. Newton per couloumb
11. Metal cable are used as telephone wire because
a) They are cheap b. the speed of sound

12. The light spiral spring is loaded with the mass of 100g and it extends by 25cm , what is the frequency of small vertical oscillation

a) 0.45hz b. 1.5hz c. 0.637hz d. 2.257hz

13. Water waves are _____

a) Mechanical b. longitudinal c. chemical d. electromagnetic

14. The minimum deviation when ray of light passes _____ through the prism

a) Asymetrically b. symmetrically c. longitudinal d. all of the above

15. E.m.f can be defined as the force of_____

a) That flow through the circuit

b) Which is used in discharging the electric circuit in a resistor

16. A cell whose internal resistance is 0.5 ohms delivers a current of 4A to an external resistor . The lost voltage of the cell is _____ a. 1.250v b. 0.125v c. 8.000v d. 2.000v

17. The belief of light that consists of tiny particles can be attributed to

a) Michael Faraday b. James Maxwell c. Early Greece d. Isaac Newton

18. Which of these can be used at underwater communication

a) Micro wave b. ultrasonic c. infrasonic d. radiowave

19. Current of 2A flows in a coil of e.m.f 12v for 0.4s aback emf of 3v was induced durig this period . The store in the loop that can be utilized is a. 12j b. 24j c. 9.6j d. 7.2j

20. Platinum wave of 80cm long is to have a resistance of 0.1ohms. What should its diameter be.
Resistivity in platinum is 1.1×10^{-7} ohms a. 3.20 b. 1.06 c. 2.87 d. 7.2

21. 1hp is _____

a) 741w b. 746w c. 766w

22. Unit of magnetic induction is _____

a) Tesla b. ampere c. couloumb d. farad

23. A bint of charge of 2×10^{-7}c experience force of 0..02N in the electric field . Calculate the magnitude strength of the field

a) 4×10^{9}N/C b. 1×10^{-5}N/C c. 1×10^{-9} d. 1×10^{4} N/C

24. The unit of power is _____ a. joules b. ms^{-1} c. watts d. candela

25. Which of the following is a property of compound microscope

a) Less distortion b. smaller magnification c. single converging lens d. none of the above

26. 1amu = _____ a. 931mev b. 1×10^{-19} mev c. 421 mev

27. Three capacitors of capacitance 2uf, 4uf, and a p.d of 6v is maintained across each capacitor the total energy stored is a. 2.91×10^{-4}

b. 2.91×10^{4}

c. 6.90×10^{-6}

d. 6.90×10^{-6}

28. Mirror that is thinner in the middle and thicker at the end is _____

a) Convex mirror

b) Concave mirror

c) Converging lens

d) Diverging lens

29. Which of the following will not receive the ultrasonic

a) Light b. cat c. human being d. bat

30. Which of the following is a property of compound microscope a. less distortion b. smaller magnification c. single converging lens d. none of the above

31. Power is the rate of change of _____

32. How much ice at 0^0C should be added to 100g of water at 20^0C so yhat final temperature will be 5^0C

33. How many lens does compound microscope have a. 1 b. 2 c. 3 d. 4

34. Relative vapour density is measured by _____

a) Hydrometer b. hygrometer c. spectrometer d. manometer

35. _____ is used to measure the refractive index of a glass a. Optical instrument b. photometer c. spectrometer d. kaleidoscope

36. The S.I unit of magnetic induction is _____

a) Tesla b. coulomb c. ampere d. farad

37. Quantity of charge (Q) is equal to _____

a) IR b. IV c. QV d. VT

38. Ohm's law is a. V=RR b. V=R/I c. V=I/R d. V=IR

39. The position and mature of an object placed 10cm in front of a concave mirror with radius of curvature 12cm is a. 5.5cm real b. 15cm real c. 5.5cm virtual d. 15cm virtual

40. Which of the following is not a semi-conductor a. H b.Cu c. Gas d. H_2O

41. The following are illuminous except a. candle b. touch c. Sun d. Ray of light

42. The path followed by flow of electric current is _____

a) Ampere b. Voltage c. Circuit d. Conduction

43. Which is a means of generating luminous source of light

a) All of the above b. thermal conduction of molecules c. Vibration of molecules d. Harmonic motion of molecules

44. In which of the following material medium will sound travel faster a. Oil b. Water c. Metal d. Gas

45. Oscillation are damped due to process, that when a particle executing S.H.M process through the mean passes through the mean position it has a. Maximum K.E and maximum P.E

b. Minimum K.E and minimum P.E

c. Maximum K.E and minimum P.E

d. Maximum K.E and maximum K.E

46. A galvanometer measuring current 0 to 1 mf, has a resistance of 40 ohms. What is the value of resistor in parallel the galvanometer will use to measure current 0 to 1 amps a. 2.5 ohms b. 0.24 ohms c. 0.04 ohms d. 1.42 ohms

47. A radio is operated by eight cell each of e.m.f 20v connected in series of the cell are wrongly connected the next e.m.f of the radio is a. 16v b. 10v c. 12v d. 8v

48. An electric generator with a power of 30kw with a voltage of 1.5 iev distribute power 100l cable , total resistance 20.0 has the power loss is the cable a. 4.00 b. 0.1 c. 10.0 d. 80.0

49. Any system which obeys _____ can exhibit s.h.m

a) Kirchoff's law

b) Hooke's law

c) Thevenin's law

50. Examples of optical instrument except

a) Telescope b. scanner c. camera d. projector

a. In moving one coulomb of electricity

b. Is rate of applying force

c. In overcoming internal resistance

51. The instrument used for securing a large number of similar charges by induction is called

a) Electrophorus b. electroscope c. proofplane d capacitor

52. The velocity of S.H.M at mean position is

a) Negative b. zero c. maximum d. minimum

53. Which of the following is a secondary colour

a) Blue b. orange c. green d. red

54. The resultant force of a couple is a. 0.5 b. infinity c. 1.0 d. zero

55. The frequency and wavelength of a light travelling from one medim to another medium is

a) Unchanged, unchanged b. changed, unchanged c. changed, changed d. unchanged, changed

56. The angle of deviation of light of various colour through glass prism decrease in order of a. blue,orange,red b. red, orange, blue c. blue, red ,orange d. red, blue, orange

57. Virtual image can be photographed only with the help of a _____ optical system.

58. Calculate the increase in length when 1000cm of steel wire of linear expansivuty 1.2×10^{5} per degree celcius is heated from 0 to $50^{0}C$

a) 1006.0cm b. 6×10^{-3}cm c. 6×10^{-4}cm d. 1.2×10^{-2} cm

59. Charge of magnitude 2×10^{-4}C experiences a force of 100N in an electric field. Find the electric field Intensity. a. 5×10^{5} N/C b. 4×10^{5} N/C c. 2.4×10^{5} N/C d. 3.4×10^{5} N/C

60. Potential and kinetic energy are collectively called a. renewable energy b. gravitational energy c. mechanical energy d. elastic energy

61. A light spiral spring is loaded with mass 100g and it extends by 15cm. Calculate the frequency of amall vertical oscillation (take g = 10m/s) a. 2.25hz b. 1.30hz c. 0.23hz d.1.59hz

62. Electrical appliances at home are usually earthed so that

a) The AC and DC sources can be used

b) The appliances are maintained at higher p.d than the earth

c) The appliances are maintained at lower p.d than the earth

d) A person touching the appliances is safe from the electric shock

63. The velocity of a transverse wave along the string that is stretched by tension(T) and linear mass density K is given by a. T^{2}/K b.$(T/K)^{2}$ c. T/K d. $(T/K)^{2}$

64. Which of the following is not a magnetic material a. iron b. steel c. cobalt d. copper

65. Which of the following instrument does not have high resistance a. galvanometer b. ammeter c. voltmeter d. millimeter

66. An ideal gas performs 800j of work with 500j of heat energy. What is the value of its internal energy a. -1300j b. -300j c. 300j d. 1300j

67. A dipole with charges 6×10^{-19} is placed in an electric field of magnitude 5×10^{5} N/C. find the net force exerted by the field on the dipole a. 0N b. 11×10^{-19} N c. 30×10^{-14}N d. 0.12N

68. A light source emits visible light _____ by different medium within the source

a) Totally b. independently c. collectively d. dependently

69. How much ice at $0^{0}C$ should be added to 100g of water at $20^{0}C$ so that its final temperature will be $5^{0}C$ a. 20.4g b. 27.6g c. 15.7g d. 5.23g

70. The current in 240 ohms light bulbs connected in series with a 120v power source is a. 1.45A b. 0.25A c. 0.86A d. 0.32A

71. Which of the following is an example of opticals a. telescope b. camera c. projector d. scanner

72. If a = -kx and the motion is SHM. What will the motion be if the –ve changed to =ve a. SHM

b. translational c. random d. oscillatory

73. An instrument used in measuring the refractive index of glass is

a) Refractometer b. spectrometer c. collimator b. photometer \

74. An instrument used to measure the relative density of an acid in a car engine is a. hygrometer b. hydrometer c. manometer d. barometer

75. Which of the following devices is total internal reflection not applicable to a. kaleidoscope b. prism binocular c. periscope d. none of the above

76. A platinum wire of 80cm long is to have a reistance of 0.1ohms. what should be its diameter (resistivity of platinum is 1.1×10^{-7} ohm metre) a. 1.06mm b. 3.20mm c. 2.87mm d. 2.00mm

77. A material object such as clothing is visible to human eye only because it reflects in a _____ manner away from its surface

a) Absorbed b. specular c. diffuse d. all of the above

78. Power is the rate of _____ a. displacement b. force c. work d. energy

79. Which of the following is correct of an object placed beyond centre of curvature of a convex mirror a. Virtual,erect, magnified b. virtual, erect , diminished c. real, infra red ,magnified d. real, erect, diminished

80. Density is the property of matter, defined as the ratio of an object to its a. extensive volume matter b. extensive volume mass c. extensive mass volume d. extensive matter volume

81. A light spiral spring is loaded with mass of 250g and extends by 20cm. what is the frequency (g=10m/s) a. 1.30 b. 1.13 c. 1.59 d. 2.20

82. The ball in a bowl exhibit what type of motion a. SHM b. damped motion c. Rational motion d. oscillatory motion

83. The unit of oscillation is _____ a. candela b. lux c. lux per squqre meter d. lumen

84. The change of direction of wave front due to a change in its velocity is called a. diffraction b. reflection c. refraction d. interference

85. An electric current has the following except a. magnetic b. chemical c. heating d. turning

86. A bulb 60w, find the current passing through it when it is connected in series with a 240v supply

87. Series resonance circuit is used for a. resonance break b.oscilatory radiowave c. turning radio wave d. minimizing circuit heat

88. When friction reduces mechanical energy of system as time passes, motion is said to be

a. Linear b. random c. damped d. simple

89. Which of the following instrument will accurately measure the emf of a cell a. voltmeter b. galvanometer c. ammeter d. potentiometer

90. The capacitance of a parallel plate capacitor is 20uf in air and 60uf in vacuum and presence of dielectric constant a. 2.0 b. 6.0 c. 0.3 d. 3.0

91. The following are the defects of lenses except a. coma b. accommodation c. distortion d. chromatic abbreviation

92. The path followed by flow of electric current is called a. ampere b. conduction c. circuit d. voltage

93. Which waves are used for underwater communication a. radiowave b. microwave c. infrasonic wave d. ultrasonic

94. In cars spring are damped by a. shock absorbers b. brake pedals c. tyres d. engines

95. The opposition of material medium to current flow is called a. conductor b. resistor c. resistance d. current

96. All the following are effect of dielectric material on capacitor except

a. Keep the plate apart
b. raise the capacitor relative to air
c. relocate the electrons between the plates
d. reduce the chance of electric breakdown

97. it is required to transport 200kw of electrical energy of 40v. calculate the current that should flow in the conductor

a. 50A b. 5A c. 0.5A d. 0.05A

98. A conductor of length 2m carries a current of 0.8A while kept in a magnetic field of magnetic flux of density of 0.5T. The maximum force acting on it is a. 8.0N b. 3.2n c. 0.2N d. 0.8N

99. A galvanometer measuring current from 0 to 1 ma, has a resistance of 40 ohms. What value of resistor in parallel will the galvanometer use to measure current from 0 to 1 ma a. 2.53ohms b. 0.04onms c. 1.42 ohms d. 0.24ohms

100. A convex mrror of focal length 20m and image distance 15cm, find the object distance

a. 40cm b. 30cm c. 60cm d. 70cm

101. Resultant force of a couple is a. 1.0 b. Infinity c. zero d. 0.5

102. The coefficient of friction between a perfectly rough body

a. 1.0 b. 2.0 c.0.5 d. 0

103. Two resistors of 3 ohms and 5.0 ohms are connected in parallel

a. 5×10^5 N/C b. 3.4×10^5N/C c. 4.0×10^5 N/C d. 2.4×10^5N/C

104. The following are the properties of simple microscope except

a. Virtual b. small magnification c. less distorted d. object placed between principal focus and the lens

105. Artificial damped oscillations are

a. Solid, critical, light b. light , solid, heavy c. heavy, light d. heavy, solid

106. Critical angle of glass is a. 30^0 b. 45^0 c. 50^0 d.42^0

107. The following are the gravity of repetitive to & fro motion about a mean position

a. A car going to kano
b. Mass hanging from a coil spring
c. The balance wheel of a watch
d. The pistol ring of gasoline engine

108. An a.c circuit of emf 12v has a resistor of resistant 8 ohms connected in series to an inductive reactance 16 ohms and a capacitor of capacitance 10 ohms a. 12 b. 14 c.1.4 d. 1.2

109. The belief that light consist of tiny particles can be attributed to

a. Early greeks b. Isaac Newton c.Michael Faraday d. Maxwell

110. Free oscillations are such oscillations with constant amplitude & periods with

a. Small influence b. every influence c. external influence d. no influence

111. The resistor used as an ammeter is called

a. Potentiometer b.Shunt resistor c. multiplier d. Wheatstone

112. A spherical mirror whose inner curve surface is

a. Concave b. convex c. plane mirror d. silver

113. If an object moves forward and backward repeatedly, it's

a. Revolving b. rotating c. motion d. oscillating

114. The lens with a long focal length

a. Thin b. large c. thick d. small

115. When a brick is moving toward the moon its mass

a. Reduce b. increase c. zero d. none of the above

116. The illuminance E for a light source incident perpendicular on a flat surface can be expressed as a. $\cos/R_2$ b. $R_2\cos$ c. I/R_2 d. $(I\cos)R_2$

117. _____ is the type of surface that can reflect a beam of light in one direction rralinstead of either scattering it widely absorbing it a. Mirror b. prism c. glass d. none of the above

118. Natural damped oscillations are due to _____ in a spring and fluids exerting a viscous drag a. gravitational force b. internal forces c. external forces d. resulting forces

119. The relation between the object and image distance from the lens in terms of focal length of the lens is called a. ohm's Law c. Lens formula c. Optical law d. fibre option

120. An electric generation with a power output of 3.0kw at a voltage of 1.5kv distributes power along cables of total resistance 20.0 ohms, the power loss in the cable is a. 80.0kw b. 0.1w b.10.0w d. 40.0w

121. Smooth is _____ a. irregular plane b. regular plane c. irregular lens d. regular lens

122. Watt is equivalent to _____ a. Nm/s b. Ns c. kgm^2s^2 d.js

123. Water wave is an _____ a. electromagnetic wave b. mechanical wave c. longitudinal wave d. transverse wave

124. A platinum wire 80cm long is to have a resistance of 0.1 ohms . what should its diameter be.(the resistivity of platinum is 1.1×10^{-7} ohmmetre)

125. When a friction reduces mechanical energy of a system as time passess/ motion is said to be a. linear b. random c. damped d. simple

126. The tendency of a body to remain at rest or to continue its state of uniform motion is called a. resistance b. tension c. friction d .inertia

127. A radio is operated by 8cell each of emf 2.0v connected in series if two of the cell are wrongly connected . the net emf of the radio is a. 12v b. 10v c. 16v d. 8v

128. The purpose of a dieletric material in a parallel plate capacitor is to

a. Decrease its capacitance
b. Increase the magnetic field between the plate
c. Insulate the plate from the resultant force of a couple
d. None of the above

129. Velocity of surface if M that means position is always

a. Negative b. zero c. minimum d. maximum

130. When a brick is taken from the earth's surface to the moon, its means

a. Reduce b. becomes zero c. increases d. remains constant

131. Which of the following has the highest resistance a. millimeter b. voltmeter c. potentiometer d. galvanometer

132. Density of a property of matter, defines as the ratio of an object to its.

a. Intensive, mass volume
b. Extensive, volume , mass
c. Intensive, matter , volume
d. Extensive , volume , matter

133. A cell whose internal resistance is 0.5ohms delivers a current of 4A to an external resistor. The lost voltage of the cell is a. 1.25v b. 0.125v c. 8.00v d. 2.00v

134. A copper wire has a resistance of 10.0 ohms at 20^0C .what will be the resistance at 80^0C a. 1.2v b.2.4v c. 5.5v d. 4.6v

135. A device used in decreasing the visual angle to the eye by an object being observed is _____ a. all of the above b. mirror c. lens d. optical instrument

136. In concave mirror, the size of the image depends on _____

a. Position of the object
b. Shape of the object
c. Size of the object
d. Area covered by the object

137. The following are examples of couple except

a. Forces in the drivers hand applied to a steering wheel
b. Forces in the hand of someone turning the tap

c. The forces experience by two sides of a suspended rectangular cat carrying a current in magnetic field
d. In a simple pendulum

138. All the following are the effects of dielectric materials on capacitors except
a. Keep the plates apart
b. Raise the capacitor of capacitance relative to air
c. Reduce the chance of electric breakdown
d. Relocate the electrons between the plates

139. Which of the following is correct in terms of decreasing wavelength
a. Yellow, orange , red
b. Violet , indigo , blue
c. Yellow , green ,red
d. Blue, indigo, violet

140. Much _____ are obtained when cells are joined in series
a. Resistance b. current c. friction d. potential difference

141. A moving coil galvanometer measures dc and not ac unless it is used with a
a. Ammeter b. hair spring c. rectifier d. wire

142. Free oscillations are s. h. m with simple constant amplitude are paired with a.every influence b. small influence c. external influence d. no external influence

143. The eye defect in which forms infinity to the eye converged from the retina can be corrected by a. diverging lens b. converging mirror c. concave mirror d. converging lens

144. Which of the following is not an S.I unit
a. Kg b. m c. l d. secs

145. A simple microscope forms an image twice the size of the object if the focal length of the microscope is 10, how far is the object a. 5 b. 10 c. 15 d. 12

146. The reflection by rough surface is called a. irregular refraction b. regular diffraction c. irregular reflection d. regular reflection

147. Concave lens are known as a. diverging lens b. converging lens

148. A galvanometer measuring current from 0 to 1 amps has a resistance of 40ohms. What value of the resistor In parallel to the galvanometer will be used to measure current from 0 to 1 amps a. 0.04 Ω b. 1.42Ω c. 2.53 Ω d. 0.24Ω

149. The coefficient of friction between a perfectly smooth body and a very rough body is a. 1 b. 0.5 c. 2 d. 0

150. Calculate the electric dipole length of the charge 6×10^{-9}C are separated by 0.125N/m
a. 2×10^{-29} b. 2.19×10^{-29} c. 2.2×10^{-9}

151. 1ev is equivalent to _____ a. 764hp b. 732hp c. 746hp d. 744hp

152. A force produced with a resistive force is called a. damped b. random c. translational

153. Speed (v) of wave is = product of frequency and
a. Vibration b. wave length c. amplitude d. time period

154. A steady current of 2A flows in a coil of emf 12v from 0.4 secs. A back emf of 30v was induced durig this period. The stored energy in the loop that can be utilized is a. 2.4 b. 12.0 c. 9.6 d. 0.2

155. A point charge of 2.07×10^{-7} experiences a force of 0.2N in a uniform ekectric field, compute the magnitude of the strength of the field
a. 1×10^{4} n/s b. 4×10^{-5}n/s c. 1×10^{-5}n/s d. 1×10^{-9}n/s

156. the following are the advantages of potentiometer except
a. connecting wires may be thin
b. slow to use

c. no current is drawn from the circuit under test
d. Scale can be varied and made long

157. Which of the following can not travel in a vacuum
a. Sound b. visible c. gamma d. radio

158. The change of direction of wave front due to a change in velocity is called a. diffraction b. refraction c. reflection d. interference

159. The lens with a long focal length is
a. Not strongly curve b. both b and c c. thick d. thin

160. A charge of magnitude $2 \times 10^{-4}C$ experiences a force of loss in electric field. Find the electric field intensity a. $5 \times 10^{5}N/C$ b. 3.4×10^{5} N/C c. $2.4 \times 10^{5}N/C$ d. $4 \times 10^{-5}N/C$

161. A light of spiral spring is loaded with mass 150g and it extends by 20cm (g=10m/s). Calculate the frequency a. 1.13 hz b. 2.56hz c. 0.16hz

162. Convex mirror is used as drawing mirrors because
a. Erect and virtual images b. wide field of views c. it produces upright and diminished images

163. _____ is used to measure the acid of a car battery
a. Barometer b. hydrometer c. hygrometer d. manometer

164. The emission and absorption of light can be nest explained using
a. Reflection model b. wave model c. refraction model d. particle model

165. Which of the following is correct
a. Unlike charge repel like charge attracts
b. Repulsion is equal to attraction

166. A wire of length 90.0 cm and diameter of 0.3mm has resistivity of 11×10^{-8} ohms, calculate the resistance. a. 12.0 ohms b. 14.00ohms c. 13.00ohms d. 10.0 ohms

167. An object is placed 30.0cm from a converging lens. If the real image formed is 90.0 cm from the object, what is the focal length a. 20.0 cm b. 50.0cm c. 22.5cm d. 60.0cm

168. A sufficiently high temperature, all matters emits invisible light to be
a. Reflective b. self luminous

169. What is the angle of refraction for a light ray of wave length 589mm travelling from air to crownglass at 30^0 normal to the surface is a. 41.1^0 b. 60^0 c. 90.2^0 d. 30^0

170. When a stone is taken from earth to the moon. The mass of the stone will
a. Increase b. decrease c. remain constant d. none of the above

171. In an inductive circuit ,
a. Current lacks voltage by 90^0
b. Voltage leaves current by 90^0
c. Current leaves voltage by 90^0
d. Current lacks voltage by 90^0

172. A point on the principal axis at the centre of the ray is what
a. Principal axis
b. Optical centre
c. Focal length length
d. Principal focus

173. The inability of eye to see the objects clearly is called
a. Clarity of images
b. Blurr images

c. Defects of vision
d. Small images

174. What is the speed of light on a fluid when light travels from the fluid of refractive index 1.34, a. 0.74m/s b. 3 x 10^8 m/s c. 2.25 x 10^8m/s d. 4.47 x 10^{-9}m/s

175. A copper wire has a resistance of 10.0ohms at 20^0C. what will be the resistance of 80^0C
a. 1.20 ohms b. 5.5ohms c. 2.4ohms d. 4.6ohms

176. Calculate the electrostatic force between two electrons separated by distance of 10^{-10}m. electronic charge = 1.6 x 10^{-19}C(k=9 x 10-^{9})Nm^2/C^2

177. The nature of light is wave as well as particle of its nature is a. triple b. single c. dual d. negative

178. For a diverging lens, the focal length is _____ a. negative b. zero c. positive d. constant

179. Electric current has the following effects except a. heating effect b. chemical effect c. turning effect d. magnetic effect

180. The close surface in gauss law is called
a. Gauss keyboard
b. Gauss sphere
c. Gauss surface
d. None of the above

181. _____ is a type of surface that can reflect a seam of light in one direction instead of scattering. A. all of the above b. mirror c. prism d. lens

182. A telescope using a converging lens is
a. Simple telescope
b. Compound microscope
c. Refracting lens
d. Reflecting lens

183. The following are uses of static electricity
a. Polythene fabrication
b. Electrostatic paintspray
c. Electrostatic dust collector
d. Galden spray

184. The distance between optic center and principal focus is
a. Focal length
b. Lens length
c. Radius
d. Focel length

185. Which of the following does not change during refraction
a. Wave length b. direction c. frequency d. speed

186. The current passing through a semi – conductor is directly proportional to its Potential difference indicates

a. Couloumb's law b. Ohm's law c. Faraday's law d. Lenz law

187. A p.d of 3.6v is maintained between a plate which are 30cm apart. Calculate the intensity a. 4 v/m b. 1.8 v/m c. 18 v/m d. 12 v/m

188. A cell whose internal resistance is 0.50 ohms delivers a current of 4A to all external resistors. The lost voltage of the cell is a. 2.00v b. 0.125v c. 8.00v d. 1.250v

189. A mirror curves inwardly

a. Concave mirror b. convex mirror c. reflection mirror d. plain mirror

190. If 100 waves pass thrugh a medium in 20s and their wavelength is 6cm. then velocity is

a. 2.5m/s b. 0.5m/s c. 0.31m/s d. 1m/s

191. The earth is 4 times the size of the moon and the acceleration due to gravity on the earth is 80 times than the size of the moon. The ratio of the mass of the moon to the earth is _____ a.1:320 b. 1:80 c. 1:1280 d. 1:4

192. The lens with the long focal length is _____

a. Both b and c
b. Thin
c. Thick
d. Not strongly curved

193. A positive charge 3mc is surrounded by a sphere with a radius of 0.02cm centered on the charge , find the electric flux through the sphere due to this charge a. 6.15 x 10^5N/C b. 6.56 x 10^5N/C c. 6 x 10^5N/C d. 6.75 x 10^5N/C

275. Artificial damped oscillation is (a). Critical, heavy, light (b). Heavy, critical, light (c). Solid, critical, light (d). Solid, light, heavy

276. Much ____ are obtained when cells are joined in series resistance (a). Resistance (b). Potential difference (c). Friction (d). Current

277. If it is required to transport 200kw of electrical energy at 40.00v. Calculate the current that should flow in the conductor (a). 40A (b). 20A (c). 60A (d). 50A

278. Measurement of ocean is by _____ (a). Diffraction (b). Polarization (c). Refraction (d). Reflection

279. Oscillations are damped due to presence of (a). Friction (b). Mechanical (c). Restoring (d). Linear

280. Natural frequency of a guitar string can be changed by changing its (a). Diameter (b). Stiffness (c). Length (d). Area

Answer: Length