

PHY 1:30

1 :- what is the focus length of a mirror whose object and image distance from the mirror is 3cm and 15cm respectively?

CORRECT ANSWER =

10cm

2 :- it is not advisable to rub a tent made of canvas in wet weather because it affects its

CORRECT ANSWER =

surface tension

3 :- a coil of inductance 2H is connected to a 50Hz a.c supply, the reactance of the inductor is

CORRECT ANSWER =

628 Ω

4 :- if 4×10^{16} J of energy is released in a nuclear reaction. Calculate the mass defect ($c = 3.0 \times 10^8$ ms⁻¹)

CORRECT ANSWER =

0.44kg

5 :- when three equal forces inclined at 120° on the same plane act on the same object, the object

CORRECT ANSWER =

remains stationary

6 :- the acceleration due to gravity on two bodies 50N and 80N on the earth's surface will be

CORRECT ANSWER =

greater on the 80N

7 :- an equiangular prism is made of flint glass refractive index of 1.414. the angle of minimum deviation for a ray through the glass is ($\sin^{-1} 0.070 = 45^\circ$)

CORRECT ANSWER =

45°

8 :- calculate the number of moles of an ideal gas of volume 8.3m³ of pressure of 3×10^5 Nm⁻² and temperature 27°C ($R = 8.3$ Jmol⁻¹ K⁻¹)

CORRECT ANSWER =

10

9 :- the following are laws of solid friction except

CORRECT ANSWER =

friction and normal reaction

10 :-

CORRECT ANSWER =

purple

11 :- which of the following statements about a magnet is correct?

CORRECT ANSWER =

unlike poles attract each other

12 :- according to the kinetic theory, which of the following is NOT true of an increase in the temperature of a gas at constant volume?

CORRECT ANSWER =

a decrease in pressure

13 :- calculate the energy for two capacitors 3F and 4F when connected in parallel across a potential difference of 100V

CORRECT ANSWER =

3.5×10^{-2} J

14 :- the force required to move a 6kg object along a horizontal surface where the coefficient of friction is 0.25 is ($g = 10$ ms⁻²)

CORRECT ANSWER =

15.0N

15 :- if the turns ratio of a transformer is 2.5 and the voltage across the primary is 10kV, the voltage across the secondary is

CORRECT ANSWER =

4kV

16 :- the factor that does NOT increase the rate of evaporation of water in a pond is

CORRECT ANSWER =

the pressure of the atmosphere

17 :- an echo sounder on a sea receives the echo 3s later. How far is the bed of the sea from the surface?

CORRECT ANSWER =

516.0m

18 :- the colour of sodium vapour used in fluorescent tubes is

CORRECT ANSWER =

orange - red

19 :- the force between two charges 5C and 5C is 50N. Calculate the force between two charges 10C placed at the same medium and same distance apart

CORRECT ANSWER =

200 N

20 :- which of the following statement is NOT correct for a R.I.C series circuit with a.c source and variable frequency at resonance ?

CORRECT ANSWER =

impedance is maximum

21 :- leaves generally appear green in the day light because they

CORRECT ANSWER =

reflect green colour of white light

22 :-

CORRECT ANSWER =

circle the wire

23 :- what is the quantity of heat generated when flows through a 7 resistor connected to a potential difference of 7V for 5mins?

CORRECT ANSWER =

2100j

24 :- a body is pulled along a horizontal plane by a constant force of 15N applied parallel to the plane. Calculate the work done in moving the body to a distance of 10m

CORRECT ANSWER =

150J

25 :- calculate the apparent expansivity of a liquid whose increase in volume is 0.06 m^3 and volume is 10 m^3 if its raised through a temperature of $100 \text{ }^\circ\text{C}$

CORRECT ANSWER =

$5 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$

26 :- which of the following is NOT a derived quantity?

CORRECT ANSWER =

temperature

27 :- hardness of X-rays implies

CORRECT ANSWER =

penetrating ability

28 :- which of the following is NOT a trivalent impurity atom?

CORRECT ANSWER =

arsenic

29 :- which of the following functions is performed by manganese (IV) oxide in the Leclanche cell?

CORRECT ANSWER =

depolarization of the cell

30 :- which of the following is both a mechanical and longitudinal wave?

CORRECT ANSWER =

sound

31 :- what is the quantity of heat required to raise the temperature of 20kg of aluminium through $10 \text{ }^\circ\text{C}$ (S.H.C = $900 \text{ J kg}^{-1} \text{ K}^{-1}$)

CORRECT ANSWER =

$18 \times 10^4 \text{ J}$

33 :- determine the focal length of a lens with power + 0.1 dioptres

CORRECT ANSWER =

10cm

34 :-

CORRECT ANSWER =

second class level

35 :- young's modulus can be expressed as

CORRECT ANSWER =

ration of tensile stress to strain

36 :- the sensitivity of a thermometer can be increased by

CORRECT ANSWER =

reducing the size of the bulb

37 :- a pipe closed at one end resonates to its fundamental of 300Hz. The frequency can also resonate at

CORRECT ANSWER =

900Hz

38 :- when heated, the density of oil of volume 0.8m³ is 700kgm⁻³. the density when cooled to a volume of 0.5m³ is

CORRECT ANSWER =

1120.0kg/m³

39 :- which of the following surface is the best absorber of radiant energy

CORRECT ANSWER =

black

40 :- calculate the internal resistance of two cells connected in series each of e.m.f 1.5V connected to a n external resistance of 12 and producing a current of 0.2A

CORRECT ANSWER =

3n