PHYSICS
QUESTION : 34

Calculate the energy stored in a stretched spring of spring constant $1.0 \times 10^4 \, Nm^{-1}$ when a force of 200N is applied to its end

A ⚪ 2000.0 J

B ⚪ 200.0 J

C ⚪ 0.2 J

D 🔘 2.0 J

PHYSICS
QUESTION : 35

Which of the following can be used to measure human body temperature?

A ⚪ Constant volume gas thermometer.

B ⚪ Liquid-in-glass thermometer.

C 🔘 Clinical thermometer.

D ⚪ Thermocouple thermometer.

PHYSICS
QUESTION : 36

Which of the following statements is **CORRECT**?

A 🔘 Pressure exerted is higher with a narrow heel shoe than a flat heel shoe.

B ⚪ No pressure is exerted in both narrow and flat heel shoes.

C ⚪ Pressure exerted is lower with a narrow heel shoes than a flat heel shoe.

D ⚪ Pressure exerted is the same in both narrow and flat heel shoes.

PHYSICS
QUESTION : 37

If the speed of light is $3 \times 10^8 ms^{-1}$, calculate the frequency of the light if the wavelength is $7.80 \times 10^{-7} m$

A ⚪ $3.444 \times 10^{14} Hz$

B 🔘 $3.846 \times 10^{14} Hz$

C ⚪ $2.889 \times 10^{14} Hz$

D ⚪ $3.526 \times 10^{14} Hz$

PHYSICS

QUESTION : 38

The quantity of heat that is absorbed or released when any material in a given state changes its state at constant temperature is called

A ⊙ latent heat of fission

B ⊙ latent heat of vaporisation

C ⊙ latent heat of fusion

D ⦿ latent heat

PHYSICS

QUESTION : 39

What law describes the integration between two charges?

A ⊙ Faraday.

B ⦿ Coulomb.

C ⊙ Capacitance.

D ⊙ Maxwell.

PHYSICS

QUESTION : 40

I.   It decreases when contaminant is added to a liquid.

II. It increases when contaminant is added to a liquid.

III. It decreases with increase in temperature.

Which of the above is/are **CORRECT** about surface tension?

A ⊙ I and II

B ⊙ II and III

C ⊙ I only

D ⦿ I and III

PHYSICS

QUESTION : 1

In the earth's gravitational field,

A ⊙ work is done when a force moves its point of application around a closed path

B ⊙ bodies repel themselves when they come close

C ⊙ energy is released when an object is raised above the ground

D ⦿ a body experiences no decrease in its deceleration when it moves freely upwards

PHYSICS

QUESTION : 2

The mass of the substance deposited in electrolysis is given by

A ○ m/t

B ○ mt^2

C ○ ml

D ◉ zIt

PHYSICS

QUESTION : 3

The quantity of heat required to raise the temperature of unit mass of a substance through unit temperature is

A ◉ specific heat capacity

B ○ specific heat of fusion

C ○ specific heat of fission
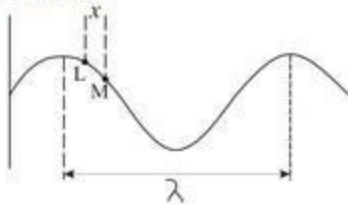
D ○ specific heat of sublimation

PHYSICS

QUESTION : 4

Which of the following **CANNOT** be used as a measure of degree of expansion in solids?

A ○ Linear expansivity.

B ○ Cubic expansivity.

C ○ Area expansivity.

D ◉ Apparent expansivity.

PHYSICS

QUESTION : 5
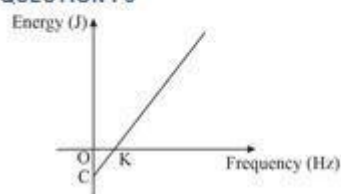

From the diagram above, what is the phase difference between points L and points m which are distance x apart?

A ○ $90\dfrac{x}{\lambda}$

B ◉ $360\dfrac{x}{\lambda}$

C ○ $180\dfrac{x}{\lambda}$

D ○ $360x\lambda$

PHYSICS
QUESTION : 6

From the diagram above, **OC** represents

A ◉ work-function

B ◯ emission velocity

C ◯ Planck constant

D ◯ threshold-frequency

PHYSICS
QUESTION : 7

Mirage is caused by

A ◯ polarization of light

B ◯ diffusion of light

C ◉ total internal reflection

D ◯ reflection of light

PHYSICS
QUESTION : 8

The mean distance travelled by gas molecules between two successive collision is

A ◯ mean constant path

B ◉ mean free path

C ◯ annihilation path

D ◯ elastic path

PHYSICS
QUESTION : 9

Astigmatism is corrected by the use of a

A ◯ diverging lens spectacle

B ◉ cylindrical lens spectacle

C ◯ converging lens spectacle

D ◯ plano glass spectacle

PHYSICS
QUESTION : 10

The optical phenomenon responsible for rainbow is

A ◯ refraction

B ◯ diffusion

C ◯ reflection

D ◉ dispersion

PHYSICS
QUESTION : 11

The vapour pressure of a liquid in equilibrium with its own environment is

A ◯ balanced vapour pressure

B ◯ environmental vapour pressure

C ◯ equilibrium vapour pressure

D ◉ saturated vapour pressure

PHYSICS
QUESTION : 12

When a galvanometer is connected in series with a multiplier, it function as

A ⦿ voltmeter
B ◯ rectifier
C ◯ amplifier
D ◯ ammeter

PHYSICS
QUESTION : 13

Ice wrapped in gauze placed at the bottom of a tube filled with water remains unmelted when heat is applied to the top of the tube. This experiment

A ◯ ice cannot sink in water
B ⦿ water is a bad conductor of heat
C ◯ water is a good medium to show convection
D ◯ ice is a solid that conducts heat

PHYSICS
QUESTION : 14

Convex mirror is used as a driving mirror because it

A ◯ magnify images of objects
B ◯ makes image very closer to view
C ⦿ has wide field of view
D ◯ gives better and sharper images

PHYSICS
QUESTION : 15

Calculate the number of moles of an ideal gas of volume $12.0m^3$ at a pressure of $6 \times 10^3 Nm^{-2}$ and 27^0C
$[R = 8.0 \ Jmol^{-1}k^{-1}]$

A ◯ 3.0
B ◯ 1.5
C ◯ 15.0
D ⦿ 30.0

PHYSICS
QUESTION : 16

Which of the following is a secondary cells?

A ⦿ Lead – acid accumulator.
B ◯ Daniel cell.
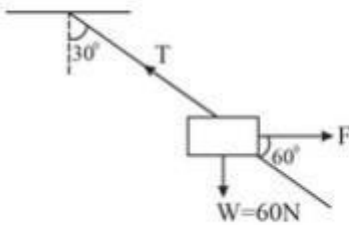C ◯ Zinc – acid accumulator.
D ◯ Leclanche cell.

PHYSICS

QUESTION : 17

A body moving at $20ms^{-1}$ decelerates uniformly at $5ms^{-2}$ till its speed becomes $10ms^{-1}$. The distance covered within this period is

A ⦿ 30 m

B ◯ 20 m

C ◯ 50 m

D ◯ 60 m

PHYSICS

QUESTION : 18

From the diagram above, a weight W = 60N is suspended horizontally by a string attached to a wall. Find the tension T on the string?

A ◯ $60\sqrt{3}$ N

B ◯ $20\sqrt{3}$ N

C ⦿ $40\sqrt{3}$ N

D ◯ 120 N

PHYSICS

QUESTION : 19

Evaluate the frequency of the third harmonics of a closed pipe of length 0.3m.

[speed of sound in air = $340ms^{-1}$]

A ⦿ 1416.7 Hz

B ◯ 850.0 Hz

C ◯ 1511.1 Hz

D ◯ 283.3 Hz

PHYSICS

QUESTION : 20

An electrical appliance is rated 240V and 45W. Calculate the current drawn from the appliance.

A ⦿ 0.19 A

B ◯ 0.30 A

C ◯ 0.12 A

D ◯ 0.45 A

PHYSICS

QUESTION : 21

I.   Engine oil

II. Water

III. Glycerin

In which of the following fluids will a ball experience the greatest speed?

A ○ I only

B ○ I and II

C ◉ II only

D ○ II and III

PHYSICS

QUESTION : 22

In extrinsic semiconductors, dopants are

A ○ host atoms

B ○ elements

C ◉ impurity atoms

D ○ hole

PHYSICS

QUESTION : 23

I.   Gas supply to thermal stations.

II. Water level in dams.

III. Vandalization of electric cables.

Which of these can affect electricity supply in Nigerian homes and industries?

A ◉ 1, II and III.

B ○ I and II only.

C ○ I and III only.

D ○ II and III only.

PHYSICS

QUESTION : 24

Which of the following is TRUE about a machine?

A ○ Efficiency is zero

B ○ Efficiency is greater than 100%

C ◉ Efficiency is less than 100%

D ○ Efficiency is 100%

PHYSICS

QUESTION : 25

In changing a d.c. motor to a.c. motor, what adjustment will be done?

A ○ The position of the coil will be changed.

B ○ The cross sectional area of the coil is increased.

C ◉ The split rings are replaced with slip rings.

D ○ Carbon brushes are replaced with slip rings.

PHYSICS

QUESTION : 26

The dielectric of a capacitor is use to

A ◯ balance up the energy

B ◯ regulate the current flow

C ◯ boost the voltage between the plates

D ◉ increase the energy stored

PHYSICS

QUESTION : 27

The speed of sound in air is independent of

A ◉ elasticity

B ◯ density

C ◯ pressure

D ◯ temperature

PHYSICS

QUESTION : 28

The dimensions of power are

A ◉ ML^2T^{-3}

B ◯ ML^4T^{-1}
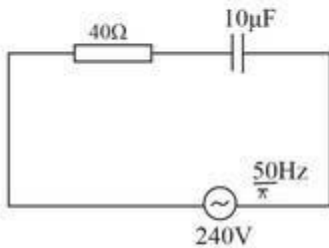
C ◯ MLT^{-2}

D ◯ MLT^{-3}

PHYSICS

QUESTION : 29

A man moves 20m North, then 12m East and finally 15m south. His displacement from the starting point is now

A ◉ 13 m

B ◯ 27 m

C ◯ 47 m

D ◯ 23 m

PHYSICS
QUESTION : 30

In the a.c circuit above, what is the capacitive reactance?

A ○ 2000 Ω

B ○ 500 Ω

C ○ 200 Ω

D ◉ 1000 Ω

PHYSICS
QUESTION : 31

The angle between the geographic north and the magnetic north is angle of

A ○ zenith

B ○ magnetic meridian

C ○ dip

D ◉ declination

PHYSICS
QUESTION : 32

In photoelectric effect, the kinetic energy of photoelectrons depends on

A ⚪ phase angle of incident radiation

B ⚪ velocity of incident radiation

C 🔘 frequency of incident radiation

D ⚪ intensity of incident radiation

PHYSICS
QUESTION : 33

The resistance of a wire 20m long is 0.5Ω. If the cross sectional area is $1.2 \times 10^{-4}m^2$, determine the resistivity of the material.

A ⚪ $1.2 \times 10^{-6}\ \Omega m$

B ⚪ $4.2 \times 10^{-6}\ \Omega m$

C ⚪ $2.0 \times 10^{-6}\ \Omega m$

D 🔘 $3.0 \times 10^{-6}\ \Omega m$