1 kcet 1-7-2024 physics

# Question 1

The magnitude of the difference between the individual measurement and true value of the quantity is called:

1. Absolute error
2. Relative error
3. Percentage error
4. None of these

# Question 2

The velocity of a freely falling body depends on , where is acceleration due to gravity and is the height. The values of and are:

1. 1,1

# Question 3

Which of the following pairs has the same dimensions?

1. Specific heat and latent heat
2. Impulse and momentum
3. Surface tension and force
4. Moment of Inertia and torque

# Question 4

Which of the following physical quantity is dimensionless?

1. Angle
2. Strain
3. Specific gravity
4. All of these

# Question 5

Find the dimensional formula for magnetic field from the given formula .

# Question 6

A physical quantity Q is found to depend on observables and , obeying relation The percentage error in the measurements of and are and respectively. What is percentage error in the quantity Q will be:

1. 9
2. 10
3. 11
4. 12

# Question 7

Random error can be eliminated by:

1. Careful observation
2. Eliminating the cause
3. Measuring the quantity with more than one instrument
4. Taking large number of observations and then their mean

# Question 8

If the fundamental quantities are energy , velocity and force , then what will the dimensions of mass?

# Question 9

The dimensional formula of Planck’s constant is:

# Question 10

An Odometer is an instrument used to measure \_\_\_\_\_\_\_\_ in automobiles.

1. speed
2. odour
3. direction
4. distance

# Question 11

In SI system the fundamental units are:

1. meter, kilogram, second, ampere, Kelvin, mole and candela
2. meter, kilogram, second, coulomb, Kelvin, mole and candela
3. meter, Newton, second, ampere, Kelvin, mole and candela
4. meter, kilogram, second, ampere, Kelvin, mole and lux

# Question 12

If denotes angular momentum and denotes linear momentum, the dimensions of is:

# Question 13

The unit of momentum is:

# Question 14

What is the dimensional formula of strain?

1. None of the above

# Question 15

Which of following is the dimensional formula of Density?

# Question 16

Which of the physics quantity has the same unit in both C.G.S and M.K.S system?

1. Velocity
2. Distance
3. Time
4. Mass

# Question 17

Which one of the following is not a derived unit?

1. Joule
2. Watt
3. Newton
4. Kilogram

# Question 18

A meter reads and the true value of the voltage is . Find the absolute error of the instrument.

# Question 19

A wattmeter reads . The absolute error in measurement is . What is the true value of power:

# Question 20

Which of the following quantity has dimensional formula as that of is:

1. Force
2. Power
3. Pressure
4. Acceleration

# Question 21

The dimensions of ’resistance’ are same as those of \_\_\_\_\_\_\_\_\_\_ where is the Planck’s constant.

# Question 22

If the unit of length, time and mass are increased by 10 times, then the numerical value of "g" (acceleration due to gravity) will:

1. Decreased by 10 times
2. Increased by 10 times
3. Increased by 20 times
4. Remains the same

# Question 23

The magnitude of any physical quantity:

1. Depends on the method of measurement
2. Does not depend on the method of measurement
3. Is more in SI system than in CGS system
4. Directly proportional to the fundamental units of mass, length and time

# Question 24

If the unit of length and force be increased four times, then the unit of energy is:

1. Increased 4 times
2. Increased 8 times
3. Increased 16 times
4. Decreased 16 times

# Question 25

The dimensional formula for impulse is same as the dimensional formula for:

1. Momentum
2. Force
3. Rate of change of momentum
4. Torque

# Question 26

Planck’s constant has the dimensions (unit) of:

1. Energy
2. Linear momentum
3. Work
4. Angular momentum

# Question 27

Which one of the following quantities has dimensions different from the remaining three?

1. Energy per unit volume
2. Force per unit area
3. Product of voltage and charge per unit volume
4. Angular momentum per unit mass

# Question 28

Which of the following quantities does not have Nm as the unit?

1. Pressure
2. Stress
3. Strain
4. Young’s modulus

# Question 29

\_\_\_\_\_\_\_\_ is the international unit of measuring Energy.

1. Calorie
2. Joule
3. Watt
4. Kilowatt

# Question 30

Lux is unit of which physical quantity?

1. Luminance
2. Luminous intensity
3. Illumination
4. None of these

# Question 31

The unit Joule/coulomb is the same as:

1. 1 ampere
2. 1 kWh
3. 1 KW
4. 1 Volt

# Question 32

The unit of surface tension may be expressed as:

1. Joule metre
2. Newton metre
3. Joule metre
4. Newton metre

# Question 33

The dimension of is the same as of (here is Planck’s constant and is electronic charges):

1. Voltage
2. Magnetic flux
3. Current
4. Angular

# Question 34

If energy of photon is . Here, plank’s constant, speed of light, wavelength of photon. Then the values of and are:

1. None of these

# Question 35

Which of the following pairs does not have similar dimensions?

1. Tension and surface tension
2. Stress and pressure
3. Angle and strain
4. Planck’s constant and angular momentum

# Question 36

What is an international (SI) unit of electric current?

1. Ohm
2. Volt
3. Ohm-meter
4. Ampere

# Question 37

Dimensional analysis can be applied to:

1. To change units from one system to another
2. To check the consistency of a dimensional equation
3. To derive the relation between physical quantities in physical phenomena
4. All of the above

# Question 38

In SI unit system, pascal is the unit of:

1. Pressure
2. Work
3. Energy
4. Power

# Question 39

Which of the following is not a physical quantity?

1. Length
2. Time
3. Electric current
4. Kilogram (kg)

# Question 40

A force is given by , where is time. What are the dimensions of and ?

1. and
2. and
3. and
4. and

# Question 41

Which one of the following cannot be the unit of ’Pressure’?

1. -
2. Pascal

# Question 42

Light year is a unit of:

1. Time
2. Mass
3. Distance
4. Energy

# Question 43

Which of the following has the unit Candela?

1. Electric intensity
2. Luminous intensity
3. Sound intensity
4. None of these

# Question 44

Which of the following pair has same dimensions?

1. Pressure and stress
2. Stress and strain
3. Pressure and force
4. Power and force

# Question 45

The dimensional formula for the modulus of rigidity is:

# Question 46

The unit of surface tension may be expressed as:

# Question 47

If denotes the potential difference across the plates of a capacitor of capacitance , the dimensions of are:

1. Not expressible in [MLT]

# Question 48

A system of units uses force (F), acceleration (A) and time (T) as their fundamental physical quantities. The dimension of length in the system is:

# Question 49

The pair having the same dimensions is:

1. Angular momentum, work
2. Work, torque
3. Potential energy, linear momentum
4. Kinetic energy, velocity

# Question 50

Dimensions of the following three quantities are the same:

1. Work, energy, force
2. Velocity, momentum, impulse
3. Potential energy, kinetic energy, momentum
4. Pressure, stress, coefficient of elasticity

# Question 51

The fundamental physical quantities that have same dimensions in the dimensional formulae of torque and angular momentum are:

1. Mass, time
2. Time, length
3. Mass, length
4. Time, mole

# Question 52

If pressure , velocity and time are taken as fundamental physical quantities, the dimensional formula of force is:

# Question 53

The dimensions of  (where is magnetic field, is length and is capacitance) is same as that of:

1. Mass
2. Length
3. Time
4. Force

# Question 54

The dimensional formula for strain is same as that for:

1. Stress
2. Modulus of elasticity
3. Thrust
4. Angle

# Question 55

Dimensions of velocity gradient are same as that of:

1. Time period
2. Frequency
3. Angular acceleration
4. Acceleration

# Question 56

Temperature can be expressed as derived quantity in terms of:

1. Mass and time
2. Length and mass
3. Length, mass and time
4. None of these

# Question 57

Which of the following is a dimensionless quantity?

# Question 58

Which of the following is a dimensional constant?

1. Gravitational constant
2. Dielectric constant
3. Refractive index
4. Relative density

# Question 59

Given below are two statements: Statement I : Astronomical unit , Parsec and Light year are units for measuring astronomical distances. Statement II : Parsec In the light of the above statements, choose the most appropriate answer from the options given below:

1. Both Statements I and Statements II are incorrect
2. Statements I is correct but Statements II is incorrect
3. Both Statements I and Statements II are correct
4. Statements I is incorrect but Statements II is correct

# Question 60

Identify the pair of physical quantities which have different dimensions:

1. Wave number and Rydberg’s constant
2. Stress and Coefficient of elasticity
3. Coercivity and Magnetisation
4. Specific heat capacity and Latent heat