

TEST NO. 1**CH -1****PHYSICS****Time Allowed: 15 Minutes****CLASS 9TH - 019****Paper: (Objective Type)****Maximum Marks: 12**

Note : You have four choices for each objective type question as A , B, C and D. The choice which you think is Correct, fill that circles in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question

Q.1	QUESTIONS	(A)	(B)	(C)	(D)
1.	The number of significant figures in 210. 0 g are	One	Two	Three	Four
2.	Which one of the following is the smallest quantity?	0.01 g	2mg	100 μ g	5000 mg
3.	The unit of electric charge is	Coulomb	Ampere	Volt	Joule
4.	The unit of force is	Newton	m^3	ms^{-2}	ms^{-1}
5.	The unit of electric current is	Candela	Metre	Second	Ampere
6.	The eleventh general conference was held in Paris	1959	1961	1660	1960
7.	The no of base units in SI are	3	6	7	9
8.	The study of the structure and properties of atom is called.	Electricity	Nuclear physics	Geo physics	Atomic physics
9.	The least count of vernier calipers is	01 mm	0.1 mm	001 mm	01m
10.	In 0.036, the number of significant figures is.	1	2	3	4
11.	A measuring cylinder is used to measure.	Mass	Area	Volume	Level of liquid
12.	What is measured by physical balance?	Weight	Mass	Length	Time

A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
1	(A)	(B)	(C)	(D)	4	(A)	(B)	(C)	(D)	7	(A)	(B)	(C)	(D)	10	(A)	(B)	(C)	(D)
2	(A)	(B)	(C)	(D)	5	(A)	(B)	(C)	(D)	8	(A)	(B)	(C)	(D)	11	(A)	(B)	(C)	(D)
3	(A)	(B)	(C)	(D)	6	(A)	(B)	(C)	(D)	9	(A)	(B)	(C)	(D)	12	(A)	(B)	(C)	(D)

نوٹ: ہر معروضی سوال نامے کو توجہ سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو بچن کی سیائی یا مار کر اس طرح پُر کریں کہ سیائی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائرے کو پُر کرنے یا کاٹ کر پُر کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

TEST NO. 1**CH - 1****PHYSICS**

Time Allowed: 1:45 hours

CLASS 9TH – 019

Paper : (Essay Type)

Maximum Marks: 48

(PART – I)**2. Write short answers to any Five (5) questions:**

10

- (i) What role SI units have played in the development of science.
- (ii) Define Physics.
- (iii) Define Mechanics.
- (iv) Define geophysics
- (v) Define physical quantities.
- (vi) Define base quantities and unit.
- (vii) Define derived quantities.
- (viii) What is international system of units?

3. Write short answers to any FIVE (5) questions:

10

- (i) Why is the use of zero error necessary in a measuring instrument.
- (ii) Write the importance of physics in our daily life.
- (iii) Define prefixes and give examples?
- (iv) What is significant figure?
- (v) What is meant by stopwatch?
- (vi) What you mean zero Error and Zero correction.
- (vii) What is meant by Vernier constant?
- (viii) What is measuring cylinder?

4. Write short answers to any FIVE (5) questions:

10

- (i) Define Screw gauge.
- (ii) What is measuring instruments?
- (iii) What do you know about physical balance.
- (iv) Describe scientific notation? Give an example
- (v) Define plasma physics.
- (vi) Differentiate between Lever balance and Electronic balance.
- (vii) Estimate you age in second.
- (viii) How can we measure the volume of an irregular shaped solid object?

(PART – II)**Note:- Attempt any TWO questions.**

- | | | | |
|----|-----|---|---|
| 5. | (a) | Define Physics and explain its branches. | 4 |
| | (b) | A chocolate wrapper is 6.7 cm long and 5.4 cm wide. Calculate its area up to reasonable number of significant figures. | 5 |
| 6. | (a) | Define Physical quantities .Also write its types. | 4 |
| | (b) | What are the significant figures in the following measurements?
a) 1.66×10^{-27} kg b) 2001 s c) 1.009m | 5 |
| 7. | (a) | What is meant by Vernier calipers? Write its construction | 4 |
| | (b) | Your hair grows at the rate of 1mm per day. Find their growth rate in nm s^{-1} . | 5 |

PHYSICS

(PART - I)

Question : 2

Write short answers to any five questions:

(i) What role SI units have played in the development of science?

With the developments in field of science and technology, the need for a commonly acceptable system of units was seriously felt all over the world particularly to exchange scientific and technical information. This need was fulfilled by SI units.

(ii) Define Physics.

Physics :-

In physics, we study matter, energy and their interaction. The laws and principles of Physics help us to understand nature.

(iii) Define Mechanics.

Mechanics :-

It is the study of motion of objects, its causes and effects.

(iv) Define geophysics.

Geophysics :-

It is the study of the internal structure of the Earth.

(v) Define physical quantities.

Physical Quantities :-

All measurable quantities are called physical quantities such as length, mass, time and temperature.

(vi) Define base quantities.

Base Quantities :-

Seven physical quantities which form the foundation for other physical quantities are called base quantities.

(vii) Define derived quantities.

Derived Quantities :-

The quantities that are

expressed in terms of base quantities are called derived quantities. For example speed, area etc.

(viii) What is international system of units?

International System of Units :-

A world-wide system of measurements is known as international system of units (SI).

In SI, the units of seven base quantities are metre, kilogramme, second, ampere, kelvin, candela and mole.

Question : 3

Write short answers to any five questions :

(i) Why is the use of zero error necessary in a measuring instrument?

Zero error is necessary in a measuring instrument because it helps us to check the instrument we are using whether correct or wrong.

(ii) Write the importance of physics in our daily life

Physics plays an important role in our daily life. For example, office equipments, electricity is widely used everywhere, domestic appliances, machines used in industry etc. work on the basic law and principles of Physics.

(iii) Define prefixes and give examples.
Prefixes :-

The words or letters added before a unit and stand for the multiples or sub-multiples of that unit are known as prefixes. For example kilo, mega, milli, micro, etc.

(iv) What is significant figure?

Significant Figure :-

All the accurately known digits and the first doubtful digit in an expression are called significant figures.

(v) What is meant by stopwatch?

Stopwatch :-

A stopwatch is used to measure the time interval of an event. Mechanical stopwatches have least count upto 0.1 seconds and digital stop watch of least count 0.01 second are common.

(Vi) What do you mean by : zero error and zero correction?

Zero Error :-

If the zero line of vernier scale is not coinciding with main scale the zero error exists.

Zero Correction :-

Knowing the zero error necessary correction can be made to find correct measurement. such a correction is called zero correction.

(Vii) What is meant by Vernier constant?

Vernier Constant :-

The minimum reading which can be taken by a vernier caliper correctly is called vernier constants. Its value is 0.1mm or 0.01cm.

Viii, What is measuring cylinder?

Measuring Cylinder:-

A measuring cylinder is a glass or transparent plastic cylinder. Measuring cylinders have different capacities from 100ml to 2500ml.

Question : 4.

Write short answers to any five questions:

(i) Define Screw gauge.

Screw Gauge:-

Screw gauge is an instrument used to measure small lengths with accuracy greater than a vernier callipers. It is also called micrometer screw gauge.

(ii) What is measuring instruments?

Measuring Instruments:-

Measuring instruments are used to measure various physical quantities such as length, mass, time, volume, etc.

(iii) What do you know about physical balance?

Physical Balance :-

Physical balance is a modified type of beam balance used to measure small masses by comparison with greater accuracy.

(iv) Describe scientific notation? Give an example.

Scientific Notation :-

In scientific notation a number is expressed as some power of ten multiplied by a number between 1 and 10. For example, a number 62750 can be expressed as 6.2750×10^4 .

(v) Define plasma physics.

Plasma Physics :-

It is the study of production, properties of the ionic state of matter - the fourth state of matter.

(vi) Differentiate between lever

balance and electronic balance.

Lever Balance :-

A lever balance consists of a system of levers. When lever is lifted placing the object in one pan and standard masses on the other pan, the pointer of the lever system moves.

Electronic Balance :-

Electronic balance is used to quickly and accurately measure the mass of a substance to a level of accuracy.

(Vii) Estimate your age in seconds.

$$\text{Age in years} = 15$$

$$\begin{aligned}\text{Age in seconds} &= 15 \times 365 \times 24 \times 60 \times 60 \\ &= 473040000 \text{ seconds}\end{aligned}$$

(Viii) How can we measure the volume of an irregular shaped solid object? Measuring cylinder can be used to find the volume of a small irregular shaped solid that sinks in water. Volume of the solid will be $V_f - V_i$.

(PART- II)

Attempt any two questions.

Question : 5(a)

Define Physics and explain its branches.

Physics :-

Physics is a branch of science that deals with matter, energy and their relationship.

Branches of Physics :-

Following are branches of physics:

1. Mechanics:

It is the study of motion of objects, its causes and effects.

2. Heat:

It deals with the nature of heat, modes of transfer and effects of heat.

3. Sound:

It deals with the physical aspects of sound waves, their production, properties and applications.

4- Light :

It is the study of physical aspects of light, its properties, working and use of optical instruments.

5- Electricity and Magnetism:

It is the study of: their charges at rest and in motion, their effects and their relationship with magnetism.

6- Atomic Physics:

It is the study of the structure and properties of atom.

7- Nuclear Physics:

It deals with the properties and behaviour of nuclei and the particles within the nuclei.

8- Plasma Physics:

It is the study of production, properties of the ionic state of matter.

9- Geophysics:

It is the study of the internal structure of the Earth.

Question : 5(b)

A chocolate wrapper is 6.7cm long and 5.4cm wide. Calculate its area upto reasonable number of significant figures.

Given Data :

Length = 6.7cm

Width = 5.4cm

Area = ?

Solution :

Area = Length $\times$ Width

putting the values

$$= 6.7 \times 5.4$$

$$= 36.18 \text{ cm}^2$$

$$= 36.2 \text{ cm}^2$$

Ans

Question : 6(a)

Define Physical quantities.
Also write its types.

Physical Quantities :-

All measurable quantities are called physical quantities such as length, mass, time and temperature.

A physical quantity possesses at least two characteristics in common. One is its numerical magnitude and the other is the unit in which it is measured.

Example :

If the length of a student is 104 cm then 104 is its numerical magnitude and centimetre is the unit of measurement.

Types of Physical Quantities :-

Physical quantities are divided into base quantities and derived quantities.

1. Base Quantities :-

There are seven physical quantities which form the foundation for other physical quantities. These physical quantities are called the base quantities. These are length, mass, time, electric current, temperature, intensity of light and the amount of a substance.

2. Derived Quantities :-

Those physical quantities which are expressed in terms of

Question : 6(b)

(i) $1.66 \times 10^{-27} \text{ kg}$

$$= \frac{1.66}{10^{27}} \text{ kg}$$

$$= \frac{1066}{10000000000000000000000} \text{ kg}$$

[illegible]

Significant figures = 3

(ii) 2001s

Significant figures = 4

iii, 1.009m

Significant figures = 4

Question : 7(a)

What is meant by Vernier

callipers ? Write its construction.

Vernier Callipers :-

A vernier callipers consists of two jaws. One is a fixed jaw with main scale attached to it. Main scale has centimetre and millimetre markings on it. The other jaw is a moveable jaw. It has vernier scale having 10 divisions over it such that each of its division is 0.9 mm. The difference between one small division on main scale division and one vernier scale division is 0.1 mm. It is called least count of the vernier callipers.

Least count of Vernier Callipers = $\frac{\text{Smallest reading on main scale}}{\text{no. of division on vernier scale}}$

$$LC = \frac{1 \text{ mm}}{10 \text{ divisions}} = 0.1 \text{ mm} = 0.001 \text{ m}$$

$$LC = 0.1 \text{ mm} = 0.01 \text{ cm}$$

Zero Error and Zero Correction :-

First of all find the zero error. To find the zero error close the jaws of vernier callipers gently. Zero error will exist if zero line of the vernier scale is not coinciding

with the zero of main scale.

Knowing the zero error, necessary correction can be made to find the correct measurement. This is called zero correction.

Taking a Reading on Vernier Callipers :-

Find the diameter of a solid cylinder using vernier callipers. Place the solid cylinder between jaws of the vernier callipers. Close the jaws till they press the opposite sides of the object gently.

Note the complete divisions of main scale past the vernier scale zero in a tabular form. Next find the vernier scale division that is coinciding with any division on the main scale. Multiply it by least count of Vernier Callipers and add it in the main scale reading. This is equal to the diameter of the solid cylinder. Add zero correction (Z.C) to get correct measurement. Repeat the above procedure and record at least three observations with

The solid cylinder is displaced or rotated each time.

Question : 7(b)

Your hair grows at the rate of 1mm per day. Find their growth rate in nm s^{-1} .

Solution :

$$\begin{aligned}\text{Rate of growth} &= 1\text{mm per day} \\ &= \frac{1\text{mm}}{\text{day}}\end{aligned}$$

$$= \frac{1 \times 10^{-3} \text{ m}}{24 \times 60 \times 60 \text{ s}}$$

$$= 0.00000001157 \text{ ms}^{-1}$$

$$= 11.57 \times 10^{-9} \text{ ms}^{-1}$$

$$= 11.57 \text{ nm s}^{-1}$$

Ans