

## Physics - FSC Part 1 Physics Chapter 1 Short Questions Preparation

Q1. Discuss the assessment of uncertainty in the final result?

**Ans 1:**

Q2. What rules are of rounded off the significant figure?

**Ans 1:**

1. If the first digit dropped is less than 5, the last digit retained should remain unchanged.
2. If the first digit dropped is more than 5, the digit to be retained is increased by one.
3. If the first digit to be dropped is 5 the previous digit which is to be retained is increased by one if it is odd and retained as such if it is even.

Q3. Define Base, Derived, supplementary, Units ?

**Ans 1: Base Units:** The units of base quantities are known as base unit.

**Base quantity: Symbol**

Length l

Mass M

Time t

Electric current I

Temperature T

**Derived Quantity:** The unit of derived quantities are known as derived units. The derived units can be derived from base unit and supplementary units

**Supplementary Units:** The general conference on weight and measures has not yet classified certain units of the SI under either base units or derived units such SI Units are called supplementary units. This class contains only two units of purely geometrical quantities which are place angle and the said angle.

1. **Radian** : It is the unit of plane angle. One radian represents a plane angle subtended at the center of a circle by an arc of length equal to radius of the circle.
2. **Steradian**: Steradian is the unit for a solid angle in a three dimensional space. Steradian is defined as "the solid angle subtended at the center of a sphere by an area of its surface equal to the square of the radius of that sphere"

Q4. What is physics ? Discuss the importance of physics ?

**Ans 1: Physics:**

The branch of science which deals with the properties of matter energy and their mutual relationship is known as physics.

**Physics has played on importance role in our daily life.**

1. The electronic media like T.V, radio, Loudspeaker, Telephone, cell phone, Photo phone for machine etc are the important source of communication which works on the principles of physics.
2. Information technology is based on the principle of physics which is the scientific method of storing, protecting, processing, Transmitting, receiving and retrieving information
3. The whole world has become a global village due to use of computer net works which works on the principles of physics.
4. Atomic bomb is the invention of physics which can be used for the production of huge amount of energy. It can be also used for defence purposes.
5. X-rays, Y-rays, Laser rays etc. are the inventions of physics which can be used in industry, health and agriculture department for

various purposes.

6. Cathode ray oscilloscope (C.R.O) is the invention of physics which can be used as graph plotting device to see the wave form of a repetitive electronic signals the C.R.O can be also used in T.V circuits in computers system and as A.C circuits or D.C circuits circuits.
7. All means of transport, like aeroplane buses, motor cycles, railways etc work on the principles of physics
8. Electricity is the invention of physics without which we can not imagine any machine in working conditions
9. Rockets and satellites are the invention of physics with the help of which we can get information about the upper atmosphere.
10. The simple machine like pulley, wedge, like leaver screw-jack etc are the invention of physics which can be used for various purposes invention of physics which can be used for various purpose in daily life.
11. Physics explain the natural phenomena in term of fundamental principles and basics and basic Laws
12. Electron microscope is the invention of physics which is used to see distant objects clearly.
13. Microphone is the invention of physics which can be used to study microorganisms clearly and easily
14. Telescope is the invention of physics which is used to see distance objects clearly.
15. Physics employs the essential steps of scientific method observation recording analysis prediction and verification.

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Q5. Discuss the various branches of physics?

**Ans 1:** The various branches of physics are given below.

1. **Mechanics:** It is the branch of physics which deals with the study of motion of material objects under the action of forces
2. **Heat:** It is the branch of physics which deals with the study of nature, properties and uses of heat energy.
3. **Light:** It is the branch of physics which deals with the study of nature, properties and use of light energy
4. **Electricity and Magnetism:** It is the branch of physics which deals with the properties of charge at the rest as well as in motion.
5. **Atomic Physics:** It is the branch of physics which deals with the structures and properties of individual atoms.
6. **Nuclear Physics:** It is the branch of physics which deals with the properties of nucleus.
7. **Solid State Physics:** The branch of physics which deals with the physical properties of solids is known as solid state physics.
8. **Elementary particle physics:** It is the branch of physics which deals with deals with the study of sub-atomic particles.
9. **Plasma Physics:** It is the branch of physics which deals with the study of properties of ionized gases
10. **Astrophysics:** It is the branch of physics which deals with the study of biology based on the principle of physics.
11. **Geo - physics:** It is the branch of physics which deals with the study of earth and its atmosphere.
12. **Health Physics:** It is the branch of physics which deals with the study of diseases and their treatment.

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Q6. Define base units. Give one example.

**Ans 1:** Base Units: The units that describe base quantities are called base units.

**Ans 2:** Example: Kilogram (kg) base unit of mass (base quantity)

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Q7. Define light year. How many meters are there in one light year?

[ Speed of light =  $3 \times 10^8 \text{ ms}^{-1}$  ]

**Ans 1:** A light year is the distance light travels in one year.

Since

$$S = vt$$

or  $S = vt$

$$S = (3 \times 10^8 \text{ ms}^{-1})(365 \times 24 \times 60 \times 60 \text{ s})$$

$$S = 9.46 \times 10^{15} \text{ m}$$

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Q8. Discuss the conventions for using SI units?

**Ans 1:** The various conventions for using SI are given below.

1. Full name of the unit does not begin with a capital letter even if named after a scientist.
2. symbol of unit name after scientist has initial capital latter for for example N for newton Pa for pascal H3 for hertz etc
3. The prefixes is written before an adjacent to the unit
4. The combination of units is written each with one space a part For example , Torque =55 N m
5. Double, triple etc prefixes are not allowed
6. When a multiple of base unit is raised to a power. The power applies to the whole multiple and not just the base unit
7. Before substituting values in the formula to calculate the final result make sure that all the included physical quantities are expressed in their SI units.

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Q9. How many meters are there in one light year?

**Ans 1:** Since  $S = vt$

$$S = ct$$

$$S = (3 \times 10^8 \text{ ms}^{-1})(365 \times 24 \times 60 \times 60 \text{ s})$$

$$S = 9.46 \times 10^{15} \text{ m}$$

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Q10. what is time period?

**Ans 1:** The time taken by vibrating body to complete its one vibration is called time period.

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