



PHYSICS

BOOKS - FULL MARKS PHYSICS (TAMIL ENGLISH)

MEASUREMENT

Exercise I Choose The Correct Answer

1. Choose the correct one

A. $mm < cm < m < km$

B. $mm > cm > m > km$

C. $km < m < cm < mm$

D. $mm > m > cm > km$

Answer: A::C



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2. Rulers, measuring tapes and metre scales are used to measure

A. Mass

B. Weight

C. Time

D. Length

Answer: D



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3. 1 metric ton is equal to

A. 100 quintals

B. 10 quintals

C. $\frac{1}{10}$ quintals

D. $\frac{1}{100}$ quintals

Answer: A::B



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4. Which among the following is not a device to measure mass ?

A. Spring balance

B. Beam balance

C. Physical balance

D. Digital balance

Answer: A::B::C



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Exercise II Fill In The Blanks

1. Metre is the unit of



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2. 1 kg of rice is weighed by



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3. The thickness of a cricked ball is measured
by.



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4. The radius of a thin wire is measured by

.



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5. A physical balance measures small differences in mass up to



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Exercise Iii True Of False

1. The SI unit of electric current is kilogram .



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2. Kilometre is one of the SI units of measurement .



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3. In everyday life, we use the term weight instead of mass .





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4. A physical balance is more sensitive than a beam balance .



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5. One Celsius degree is an interval of 1 K and zero degree Celsius is 273.15 K.



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6. With the help of vernier caliper we can have an accuracy of 0.1 mm and with screw gauge we can have an accuracy of 0.01 mm .



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Exercise Iv Match The Following

Column - I

Column - II

(a) Length

(i) Kelvin

1. (b) Mass

(ii) metre

(c) Time

(iii) kilogram

(d) Temperature

(iv) second



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Column - I

Column - II

- | | |
|------------------------|----------------------|
| (a) Screw gauge | (i) Vegetables |
| 2. (b) Vernier Caliper | (ii) Coins |
| (c) Beam balance | (iii) Gold ornaments |
| (d) Digital balance | (iv) Cricket ball |



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Exercise V Assertion And Reason Type

1. Assertion (A) : The scientifically correct expression is "The mass of the bag is 10 kg"

Reason (R) : In everyday life , we use the term weight instead of mass.



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2. Assertion (A) : $0.^\circ C = 273.16 K$. For our convenience we take it as $273 K$ after rounding off the decimal .

Reason (R) : To convert a temperature on the Celsius scale we have to add 273 to the given temperature.



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3. Assertion (A) : The distance between two celestial bodies is measured by the unit of light year. **Reason (R) :** The distance travelled by the light in one year in vacuum is called one light year.



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Exercise Vi Very Short Answer Type

1. Define measurement.



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2. Define standard unit.



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3. What is the full form of SI system?



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4. Define least count of any device .



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5. What do you know about pitch of screw gauge ?



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6. Can you find the diameter of a thin wire of length 2 m using the ruler from your instrument box ?



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Exercise Vii Short Answer Type

1. Write the rules that are followed in writing the symbols of units in SI system .



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2. Write the need of a standard unit.



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3. Differentiate mass and weight.



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4. How will you measure the least count of Varnier Caliper ?



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Exercise Viii Long Answer Type

1. Explain a method to find the thickness of a hollow tea cup .



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2. How will you find the thickness of a one rupee coin ?



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Exercise IX Numerical Problem

1. Inian and Ezhilan argue about the light year. Inian tells that it is 9.46×10^{15} m and Ezhilan argues that it is 0.46×10^{12} km . Who is right ? Justify your answer .



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2. The main scale reading while measuring the thickness of a rubber ball using Vernier Caliper is 7 cm and the Vernier scale coincidences is 6 . Find the radius of the ball .



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3. Find the thickness of a five rupee coin with the screw gauge. If the pitch scale reading is 1 mm and its head scale coincidence is 68 .



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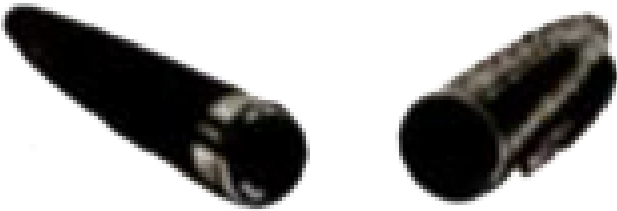
4. Find the mass of an object weighing 98 N.



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Activity

1. Using Vernier caliper find the outer diameter of your pen cap .



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2. Determine the thickness of a single sheet of your science textbook with the help of a Screw

gauge .



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3. With the resources such as paper plates, tea cups, thread and sticks available at home make a model of an ordinary balance . Using standard masses find the mass of some objects .



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