

SUCCESS KEY TEST SERIES

WORKSHEET

Std: 11th Science

Subject: Physics

Time: 1Hrs

Date :

1. Unit and Measurements.

Max Marks: 35

Q.1 Select and write the most appropriate answers from given alternatives: **5**

- 1) The dimensional formula for pressure is _____.
(a) $[L^{-1}M^1T^0]$. (b) $[L^{-1}M^1 T^{-2}]$.
(c) $[L^1M^1T^2]$. (d) $[L^2M^1T^2]$.
- 2) The star, closest to earth after sun is at a distance of _____ light years.
(a) 4.26. (b) 4.27. (c) 4.28. (d) 4.29.
- 3) Distance to Andromeda Galaxy from earth is _____.
(a) $2 \times 10^{22}m$. (b) $2 \times 10^{23}m$. (c) $2 \times 10^{32}m$. (d) $2 \times 10^{12}m$.
- 4) When two quantities are added or subtracted, the absolute error in the final result is the _____ of the absolute errors in the individual quantities.
(a) Dividend. (b) Sum. (c) Average. (d) Mean.
- 5) The ratio of mean absolute error to it _____ is called relative error.
(a) Arithmetic mean value.
(b) Arithmetic median value.
(c) Arithmetic mode value.
(d) Arithmetic average value.

Q.2 Answer the following very short questions: **5**

- 1) Mention any one reason for possible uncertainties in an observation
- 2) How can systematic errors be minimized?
- 3) What is dimensional formula?
- 4) Why was cesium atomic clock used to measure time?
- 5) What is called atomic mass unit?

Q.3 Answer the following: **10**

- 1) What is systematic error? State its classifications into different categories.
- 2) Star A is farther than star B, Which star will have a large parallax angle?
- 3) What is parallax angle?
- 4) If ten students are asked to measure the length of a piece of cloth up to a mm, using a meter scale, do you think their answers will be identical? Give reasons.
- 5) What is the measurement? How is the measured quantity expressed?

Q.4 Answer the following: **15**

- 1) Write down the number of significant figure in the following : $0.003 m^2$, $0.1250 gm cm^{-2}$, $6.4 \times 10^6 m$, $1.6 \times 10^{-19} C$, $9.1 \times 10^{-31} kg$.
- 2) Explain with examples the dimensions and dimensional formula of physical quantities.

- 3) If the measured values of two quantities are $A \pm \Delta A$ and $B \pm \Delta B$, ΔA and ΔB being the mean absolute errors. What is the maximum possible error in $A \pm B$?

Show that if $Z = \frac{A}{B}$

$$\frac{\Delta Z}{Z} = \frac{\Delta A}{A} + \frac{\Delta B}{B}$$

- 4) What are derived quantities and derived units? State two examples. State the corresponding S.I. and C.G.S. units of the examples.
- 5) The distance travelled by an object in time (100 ± 1) s is (5.2 ± 0.1) m. What is the speed and its error?

----- All the Best -----