



## ST. JOSEPH'S COLLEGE, PRAYAGRAJ

FIRST UNIT TEST- MAY 2024

CLASS – IX

SUBJECT- PHYSICS

Max. Marks: 30

Time: 1½ Hrs

### SECTION-A

[1×6]

1. What is the unit of frequency.
  - i.  $s^{-2}$
  - ii.  $s^1$
  - iii.  $s^{-1}$
  - iv. None of these.
2. Light-second is the unit of
  - i. Time
  - ii. Length
  - iii. Mass
  - iv. None of these.
3. The time period of seconds' pendulum clock is.
  - i. 1 s
  - ii. 2 s
  - iii. 1 min
  - iv. None of these.
4. Which of the following is the correct ascending order of accuracy?
  - i. Metre rule, vernier calipers, screw gauge.
  - ii. Vernier calipers, metre rule, screw gauge.
  - iii. Screw gauge, vernier calipers, metre rule
  - iv. None of these
5. 1 a.m.u =..... g
  - i.  $1.66 \times 10^{-27}$
  - ii.  $1.66 \times 10^{27}$
  - iii.  $1.66 \times 10^{-24}$
  - iv. None of these
6. Which of the following is the smallest unit?
  - i. Micrometre
  - ii. Angstrom
  - iii. Fermi
  - iv. Nanometre



## SECTION-B [2×6]

7. What do you understand by least count of vernier calliper?
8. Two simple pendulums A and B have equal lengths, but their bobs weigh 50 gf and 100 gf respectively. What would be the ratio of their time periods? Give reason also.
9. It takes 0.2 s for a pendulum bob to move from mean position to one end. What is the time period of pendulum? Also calculate its frequency.
10. Draw the graph showing the variation of square of time period ( $T^2$ ) with the length ( $l$ ) of a pendulum.
11. The distance of a star from the earth is 8.33 light minutes. What do you mean by this statement? Express the distance in metre.
12. If number of divisions on circular scale of screw gauge are increased then what will be the effect on least count. Explain.

## SECTION-C [3×4]

13. What is backlash error? Why is it caused? How is it avoided?
14. i. Compare the time periods of two simple pendulums of length 1m and 25m at a place.  
ii. Define derived units.
15. Explain the terms
  - i. Amplitude of simple pendulum
  - ii. Pitch of screw gauge
  - iii. Frequency
16. i. Complete the following
  - a. 1 light year = ..... m
  - b. A micron = ..... Angstrom  
ii. Define 1 Parsec. Express it in metre.

\*\*\*\*\* ALL THE BEST \*\*\*\*\*