

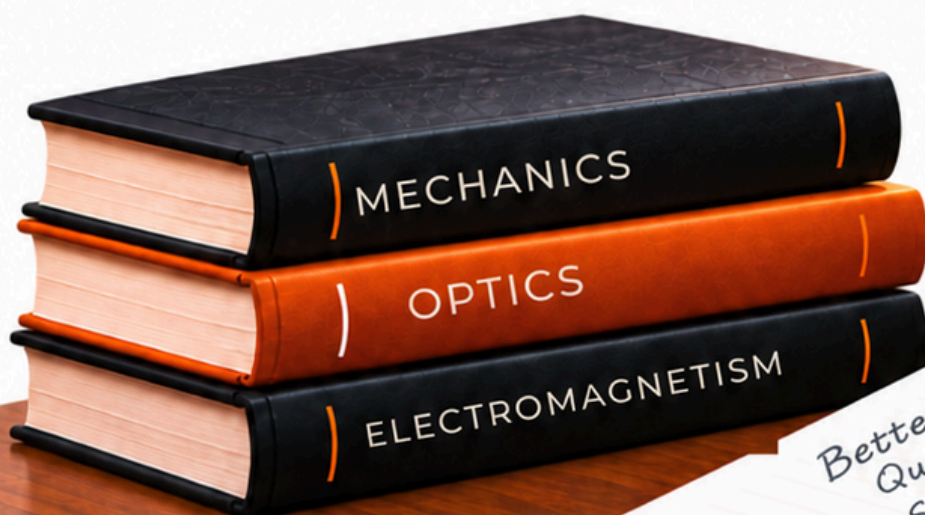
JEE Main Physics

Units of measurements, system of units and SI units PYQ

$$F = ma$$



$$v = u + at$$



Better
Questions
Stronger
Concepts
Brighter Future

Subject: Physics

Years: 2026-2013

Total Questions: 7

About this PYQ collection

What is inside

A complete topic-wise set of **7 previous year questions** on **Units of measurements, system of units and SI units** from **JEE Main (2026-2013)**, across **7 exam years**. **5 questions** are from 2019 onwards, so most of the set reflects the recent NTA pattern.

Questions are arranged to reduce unused page space, with newest-first priority and continuous numbering from 1. Each carries an exam date and shift tag to trace the original paper.

Topic-wise questions

TOPIC	QS	%
Units and SI system	7	100%

Question types

TYPE	QS	%
Single-correct MCQ	7	100%

This collection contains multiple-choice questions.

How these questions help you

- **Know where the marks are:** units and si system make up **7 of 7 questions (about 100%)**.
- **Build speed and accuracy:** short, formula-driven questions ideal for quick practice.
- **Learn the patterns:** the same question styles return year after year.
- **Strengthen other chapters:** dimensions and error estimation are used across Physics.

Questions – Units of measurements, system of units and SI units

1. A new unit (α) of length is chosen such that it is equal to the speed of light in vacuum. What is the distance between Venus and Earth in terms of α units if light takes 6 min. 40 s to cover this distance? (8 Apr 2026 | Shift 2)
- (A) 200α (B) 400α
(C) 300α (D) 500α
-
2. In an expression $a \times 10^b$: (8 Apr 2024 | Shift 1)
- (A) a is order of magnitude for $b \leq 5$ (B) b is order of magnitude for $a \leq 5$
(C) b is order of magnitude for $a \geq 5$ (D) b is order of magnitude for $5 < a \leq 10$
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3. Given below are two statements :
Statements I : Astronomical unit (Au), Parsec (Pc) and Light year (ly) are units for measuring astronomical distances.
Statements II : $\text{Au} < \text{Parsec(Pc)} < \text{ly}$
In the light of the above statements, choose the most appropriate answer from the options given below: (11 Apr 2023 | Shift 1)
- (A) Both Statements I and Statements II are incorrect. (B) Both Statements I and Statements II are correct,
(C) Statements I is incorrect but Statements II is correct. (D) Statements I is correct but Statements II is incorrect.
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4. Velocity (v) and acceleration (a) in two systems of units 1 and 2 are related as $v_2 = \frac{n}{m^2}v_1$ and $a_2 = \frac{a_1}{mn}$ respectively. Here m and n are constants. The relations for distance and time in two systems respectively are : (28 Jun 2022 | Shift 2)
- (A) $\frac{n^3}{m^3}L_1 = L_2$ and $\frac{n^2}{m}T_1 = T_2$ (B) $L_1 = \frac{n^4}{m^2}L_2$ and $T_1 = \frac{n^2}{m}T_2$
(C) $L_1 = \frac{n^2}{m}L_2$ and $T_1 = \frac{n^4}{m^2}T_2$ (D) $\frac{n^2}{m}L_1 = L_2$ and $\frac{n^4}{m^2}T_1 = T_2$

5. The density of a material in SI units is 128 kg m^{-3} . In certain units in which the unit of length is 25 cm and the unit of mass is 50 g, the numerical value of density of the material is -

(10 Jan 2019 | Shift 1)

- (A) 40 (B) 640
(C) 16 (D) 410
-

6. Match List-I (Event) with List- II (Order of the time interval for the happening of the event) and select the correct option from the options given below the lists. List-IList-II
(a)The rotation period of earth(i)105 s (b)Revolution period of earth (ii)107 s (c)Period of a light wave (iii)10 – 15 s (d)Period of a sound wave (iv)10 – 3 s

(19 Apr 2014 | Single slot)

- (A) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv) (B) (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)
(C) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii) (D) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)
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7. From the following, the quantity (constructed from the basic constants of nature), that has the dimensions, as well as correct order of magnitude, vis-a-vis typical atomic size, is

(9 Apr 2013 | Single slot)

- (A) $(e^2)/(4\pi\epsilon_0 mc^2)$ (B) $(4\pi\epsilon_0 e^2)/(me^2)$
(C) $(me^2)/(4\pi\epsilon_0 b^2)$ (D) $(4\pi\epsilon_0 mc^2)/(e^2)$
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