

PART 1 - PHYSICS

Topic : Units and measurements

SECTION-B : (Maximum Marks : 8)

- This section contains **TWO** questions.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value of the answer (in decimal notation, truncated / rounded-off to the **SECOND DECIMAL PLACE**; e.g. 6.25, 7.00, -0.33, -0.30, 30.27, -127.30) in the place designated to enter the answer.
- Answer to each question will be evaluated according to the following marking scheme :
 Full Marks : +4 If ONLY the correct answer is entered;
 Zero Marks : 0 In all other cases.

1. A single slit diffraction experiment is performed to determine the slit width using the equation, $\frac{bd}{D} = m\lambda$, where b is the slit width, D the shortest distance between the slit and the screen, d the distance between the m^{th} diffraction maximum and the central maximum, and λ is the wavelength. D and d are measured with scales of least count of 1 cm and 1 mm, respectively. The values of λ and m are known precisely to be 600 nm and 3, respectively. The absolute error (in μm) in the value of b estimated using the diffraction maximum that occurs for $m = 3$ with $d = 5$ mm and $D = 1$ m is ____ [JEE Advanced 2025 Paper 1]
2. The dimensions of a cone are measured using a scale with a least count of 2 mm. The diameter of the base and the height are both measured to be 20.0 cm. The maximum percentage error in the determination of the volume is _____. [JEE Advanced 2024 Paper 2]

Scan or tap for the full solution



Scan or tap for the full solution



Space for Rough Work

**JEE ADVANCED UNITS AND MEASUREMENTS —
COMBINATION OF ERRORS — PYQS**

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-B

Ques.	1	2														
Ans.	75 to 79	3														