PART 1 - PHYSICS

Topic : Units and measurements

SECTION–1 : (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, −.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 mth 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]

Scan or tap for the full solution

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]

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Space for Rough Work

JEE ADVANCED UNITS AND MEASUREMENTS — COMBINATION OF ERRORS — PYQS

Test Pattern : **JEE (Advanced)**

ANSWER KEY

SECTION–1																
Ques.	1	2														
Ans.	**75 to 79**	**3**														