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	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

11th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
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9th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
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	Term 1	Term 2	Term 3	Periodical Test	SLAS	

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Unit 1 - Physics (தமிழ்மொழி)

①

Percentage Error (தகவல்பெறுதல் மூலம்)

- ① ஒரு பொருளின் அளவு $x = \frac{a^2 b^3}{c \sqrt{d}}$
 அளவீடு எடுத்துக்கொள்ளப்படுகிறது. $c, \sqrt{d}$
 அளவீடு a, b, c, d மதிப்புகள் d இன் அளவீடுகள்
 மூலம் தகவல்பெறுதல் மூலம்
 தகவல் 4%, 2%, 3%, 1% மதிப்புகள்
 1%. இவ்வுகூறுதல் மூலம்
 தகவல்.

$$x = \frac{a^2 b^3}{c \sqrt{d}} \quad \begin{array}{l} a = 4\% \\ b = 2\% \\ c = 3\% \\ d = 1\% \end{array}$$

percentage error (தகவல்பெறுதல் மூலம்)

$$\left[\frac{\Delta x}{x} \times 100\% \right]$$

$$\frac{\Delta x}{x} \times 100\% = \left(a \frac{\Delta a}{a} \times 100\% \right) + \left(b \frac{\Delta b}{b} \times 100\% \right) + \left(c \frac{\Delta c}{c} \times 100\% \right) + \left(d \frac{\Delta d}{d} \times 100\% \right)$$

$$\frac{\Delta x}{x} \times 100\% = (2 \times 4\%) + (3 \times 2\%) + (1 \times 3\%) + (1/2 \times 1\%)$$

$$\frac{\Delta x}{x} \times 100\% = (20 + 10 + 15 + 2)\%$$

$$= (30 + 15 + 2)\%$$

$$\boxed{\frac{\Delta x}{x} \times 100\% = 47\%}$$

③

$$x = \frac{a^2 b^2}{c^2} \quad \begin{array}{l} a = 2\% \\ b = 1\% \\ c = 5\% \end{array}$$

Percentage Error (approximate)

$$\frac{\Delta x}{x} \times 100\% = \left(a \frac{\Delta a}{a} \times 100\% \right) +$$

$$\left(b \frac{\Delta b}{b} \times 100\% \right) +$$

$$\left(c \frac{\Delta c}{c} \times 100\% \right)$$

$$\frac{\Delta x}{x} \times 100\% = (2 \times 2\%) + (2 \times 1\%) +$$

$$(2 \times 5\%)$$

$$= (4\%) + (2\%) + (10\%)$$

$$= (4 + 2 + 10)\%$$

$$= 16\%$$

$$\boxed{\frac{\Delta x}{x} \times 100\% = 16\%}$$

(4)

$$Q = x^2 y^3$$

$$x = 2\%$$

$$y = 3\%$$

$$z = 1\%$$

(5)

Percentage Error

(Error in Q) / Q

$$\left[\frac{\Delta Q}{Q} \times 100\% \right]$$

$$\frac{\Delta Q}{Q} = \left(x \frac{\Delta x}{x} \times 100\% \right) +$$

$$\left(y \frac{\Delta y}{y} \times 100\% \right) +$$

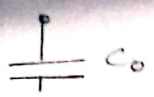
$$\left(z \frac{\Delta z}{z} \times 100\% \right)$$

$$\frac{\Delta Q}{Q} = (2 \times 2\%) + (3 \times 3\%) + (1 \times 1\%)$$

$$= (4\%) + (9\%) + (1\%)$$

$$= (4 + 9 + 1)\%$$

$$\frac{\Delta Q}{Q} = 14\%$$



for home heating

⑤

$$\textcircled{5} \quad x = \frac{a^2 b^3}{\sqrt{d}} \quad \begin{array}{l} a = 2\% \\ b = 3\% \\ d = 2\% \end{array}$$

Percentage Error
(2% error only)

$$\boxed{\frac{\Delta x}{x} \times 100\%}$$

$$\frac{\Delta x}{x} \times 100\% = \left(a \frac{\Delta a}{a} \times 100\% \right) + \left(b \frac{\Delta b}{b} \times 100\% \right) + \left(d \frac{\Delta d}{d} \times 100\% \right)$$

$$= (2 \times 2\%) + (3 \times 3\%) + (1 \times 1\%)$$

$$= (4\%) + (9\%) + (1\%)$$

$$\boxed{\frac{\Delta x}{x} \times 100 = 14\%}$$

⑥

$$x = \frac{a^5 b^5}{c^5 d^5} \quad \begin{array}{l} a = 1\% \\ b = 1\% \\ c = 1\% \\ d = 1\% \end{array}$$

Percentage Error
(2% error only)

$$\boxed{\frac{\Delta x}{x} \times 100 \%}$$

$$x = \frac{a5b5}{c5d5}$$

$$\begin{aligned} \frac{\Delta x}{x} \times 100 \% = & \left(a \frac{\Delta a}{a} \times 100 \% \right) + \\ & \left(b \frac{\Delta b}{b} \times 100 \% \right) + \\ & \left(c \frac{\Delta c}{c} \times 100 \% \right) + \\ & \left(d \frac{\Delta d}{d} \times 100 \% \right) \end{aligned}$$

$$\begin{aligned} \frac{\Delta x}{x} \times 100 \% = & (5 \times 1 \%) + (5 \times 1 \%) + \\ & (5 \times 1 \%) + (5 \times 1 \%) \end{aligned}$$

$$\begin{aligned} \frac{\Delta x}{x} \times 100 \% = & (5 \%) + (5 \%) + \\ & (5 \%) + (5 \%) \end{aligned}$$

$$= (5 + 5 + 5 + 5) \%$$

$$\boxed{\frac{\Delta x}{x} \times 100 \% = 20 \%}$$

⑦

$$x = \frac{a^2 b^{25}}{c^{50}}$$

$$a = 5\%$$

$$b = 1\%$$

$$c = 1\%$$

Percentage Error
(multiplication only)

$$\left[\frac{\Delta x}{x} \times 100\% \right]$$

$$\frac{\Delta x}{x} \times 100\% = \left(a \frac{\Delta a}{a} \times 100\% \right) +$$

$$+ \left(b \frac{\Delta b}{b} \times 100\% \right) +$$

$$+ \left(c \frac{\Delta c}{c} \times 100\% \right)$$

$$\frac{\Delta x}{x} \times 100\% = \left(2 \times 5\% \right) + \left(25 \times 1\% \right) +$$

$$\left(50 \times 1\% \right)$$

$$\frac{\Delta x}{x} \times 100\% = \left(10\% \right) + \left(25\% \right) +$$

$$\left(50\% \right)$$

$$= \left(10 + 25 + 50 \right)\%$$

$$= \left(10 + 75 \right)\%$$

$$= 85\%$$

$$\left[\frac{\Delta x}{x} \times 100\% = 85\% \right]$$

⑧

$$Q = \frac{x^5 y^5}{z^2}$$

$$x = 2\%$$

$$y = 2\%$$

$$z = 5\%$$

Percentage Error
 சதவீதக் குறைபாடு மதிப்பு

$$\left[\frac{\Delta x}{x} \times 100\% \right]$$

$$\frac{\Delta Q}{Q} \times 100\% = \left(x \frac{\Delta x}{x} \times 100\% \right) +$$

$$\left(y \frac{\Delta y}{y} \times 100\% \right) +$$

$$\left(z \frac{\Delta z}{z} \times 100\% \right)$$

$$\frac{\Delta Q}{Q} \times 100\% = \left(5 \times 2\% \right) +$$

$$\left(5 \times 2\% \right) +$$

$$\left(2 \times 5\% \right)$$

$$\frac{\Delta Q}{Q} \times 100\% = (10\%) + (10\%) + (10\%)$$

$$= (10 + 10 + 10)\%$$

$$= 30\%$$

$$\boxed{\frac{\Delta Q}{Q} \times 100\% = 30\%}$$

⑨

$$Q = \frac{15}{215} \quad x = 2\% \quad y = 1\% \quad z = 2\%$$

⑨

(percentage error
(தகவல் தவறு))

$$\frac{\Delta Q}{Q} \times 100\%$$

$$\frac{\Delta Q}{Q} \times 100\% = \left(x \frac{\Delta x}{x} \times 100\% \right) +$$

$$\left(y \frac{\Delta y}{y} \times 100\% \right) +$$

$$\left(z \frac{\Delta z}{z} \times 100\% \right)$$

$$\frac{\Delta Q}{Q} \times 100\% = (15 \times 2\%) + (15 \times 1\%) + (15 \times 2\%)$$

$$\frac{\Delta Q}{Q} \times 100\% = (30\%) + (15\%) + (30\%)$$

$$\frac{\Delta Q}{Q} \times 100\% = (30 + 15 + 30)\%$$

$$\frac{\Delta Q}{Q} \times 100\% = (30 + 30 + 15)\%$$

$$= (60 + 15)\%$$

$$= 75\%$$

$$\frac{\Delta Q}{Q} \times 100\% = 75\%$$

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