



PHYSICS

BOOKS - CHETANA PHYSICS (MARATHI ENGLISH)

Unit Test 1

Exercise

1. The dimension for Torque is

A. $M^2L^1T^3$

B. $M^1L^2T^{-2}$

C. $M^2L^1T - 2$

D. $M^{-1}L^3T^{-2}$

Answer:



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2. $\bar{A} = 2\hat{i} + 3\hat{j}$ and $\bar{b} = 3\hat{i} + 5\hat{j}$ Then $\bar{a} \times \bar{b}$

is

A. $1\hat{k}$

B. $2\hat{k}$

C. $3\hat{k}$

D. $4\hat{k}$

Answer:



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3. The equation of time of light is

A. $\frac{u \sin \theta}{g}$

B. $\frac{2u \sin \theta}{g}$

C. $\frac{u^2 \sin 2\theta}{g}$

D. $\frac{u^2 \sin^2 \theta}{g}$

Answer:



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4. State the work energy theorem.



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5. At what angle will the horizontal range be maximum?



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6. Find a vector, which is parallel to $\vec{v} = \vec{i} - 2\vec{j}$ and has a magnitude 10.



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7. Show that $1J = 10^7$ erges.



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8. If a force of $2\vec{i} - 5\vec{j} + \vec{k}$ (N) acts on a body and displaces it to a distance of $4\vec{i} - 3\vec{j} - 2\vec{k}$ metres. Calculate the work done.



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9. In a case of a projectile, derive an expression for time of ascent.



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10. Differentiate between real and pseudo force.



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11. State two characteristics of dot product.



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12. $v = u + at$. Show that it is dimensionally correct.



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13. The time period ,for the oscillation , of a simple pendulum were recorded, 5 readings were taken they were 2.00 sec., 2.02 sec., 1.96 sec., 2.03 sec, 1.99 sec

Find the Most Probable value



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14. The time period ,for the oscillation , of a simple pendulum were recorded, 5 readings

were taken they were 2.00 sec., 2.02 sec., 1.96 sec., 2.03 sec, 1.100 sec

Find the Final absolute error



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15. The time period ,for the oscillation , of a simple pendulum were recorded, 5 readings were taken they were 2.00 sec., 2.02 sec., 1.96 sec., 2.03 sec, 1.101 sec

Find the Percentage error.



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16. Show that the trajectory of a projectile is a parabola, which can be expressed as

$$y = bx - cx^2$$



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17. Show that $P = \frac{1}{3}\rho c^2$ is dimensionally correct where $P =$ Pressure, $C =$ speed, $\rho =$ density.



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18. What is a conical pendulum? Derive an expression for a time period of a conical pendulum.



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