



SMART TEST SERIES

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Name:		Subject:	Physics-11
Roll # :		Unit(s):	2,
Class:	Inter Part-I	Test:	Type 8 - Short Test (No Choice) - Marks=30
Date:		Time:	

Q.1 Circle the Correct Answers.

(5x1=5)

- A force of 100 N makes an angle of 60° with Y-axis, its horizontal component is:
(A) 50 N (B) 60 N (C) 70.7 N (D) 86.6 N
- A scalar is a physical quantity which is completely specified by:
(A) a number (B) a direction only (C) a number with proper units
(D) a number with direction
- For vector V:
(A) $V \cdot V = 0$ (B) $V \times V = V^2$ (C) $V \times V = V$ (D) $V \cdot V = V^2$
- In rotational motion, the analogue of force is:
(A) moment of inertia (B) moment of force (C) torque (D) rotational inertia
- A body will be in rotational equilibrium if:
(A) $\sum F = 0$ (B) $\sum T = 0$ (C) $\sum P = 0$ (D) $\sum L = 0$

Q.2 Write short answers of the following questions.

(8x2=16)

- Define position vector and explain it briefly.
- If a vector lies in x – y plane. Is it possible, one of its rectangular components is zero? Explain.
- Find unit vectors in the direction of vector \vec{A} . $\vec{A} = 8\hat{i} + 4\hat{j}$.
- Vector **A** lies in xy plane. For what orientations will both of its rectangular components be negative and for what orientations, its rectangular components be positive.
- Write down the steps for addition of vectors by rectangular component method.
- Write two examples of vector product.
- What is the moment of a force about the point lying on the axis of rotation?
- Give two factors on which turning effect depends.

NOTE: Attempt the long question.

(5+4=9)

- Explain the vector addition by rectangular components.
- The line of action of a force **F** passes through a point **P** of a body whose position vector in metre is $\hat{i} - 2\hat{j} + \hat{k}$. If $F = 2\hat{i} - 3\hat{j} + 4\hat{k}$ (in newton), determine the torque about the point 'A' whose position vector (in metre) is $2\hat{i} + \hat{j} + \hat{k}$.