



# 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)

- Name a quantity which is vector  
(A) work (B) speed (C) acceleration (D) mass
- The cross product  $\hat{k} \times \hat{j}$  is equal to:  
(A)  $-\hat{i}$  (B)  $-\hat{j}$  (C)  $-\hat{k}$  (D)  $\hat{i}$
- The magnitude of Cross Product and Dot product of two vectors are equal. The angle between the vectors is:  
(A)  $0^\circ$  (B)  $90^\circ$  (C)  $180^\circ$  (D)  $45^\circ$
- If the vectors A and B are parallel or anti-parallel to each other, then:  
(A)  $A \cdot B = 0$  (B)  $A \cdot B = 1$  (C)  $A \cdot B = +AB$  (D)  $A \cdot B = |A|B \cos \theta$
- The direction of torque is:  
(A) Along the position vector  $\vec{r}$  (B) Perpendicular to both  $\vec{r}$  and  $\vec{F}$   
(C) Along the direction of force  $\vec{F}$  (D) Opposite to the direction of  $\vec{r}$

## Q.2 Write short answers of the following questions.

(8x2=16)

- Why a null vector can not be added to zero? Explain.
- How does the direction of a vector specified in three dimensions? Explain with diagram.
- Explain cartesian coordinate system.
- 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.
- Determine the direction of  $\vec{A} = -3\hat{i} - 8\hat{j}$  with positive x-axis.
- Give two factors on which turning effect depends.
- A picture is suspended from a wall by two strings. Show by diagram the configuration of the strings for which the tension in strings will be minimum.
- Can a body rotate about its centre of gravity under the action of its weight?

### NOTE: Attempt the long question.

(5+4=9)

- State and explain two conditions of equilibrium.
- What is unit vector in the direction of vector  $\vec{A} = 4\hat{i} + 3\hat{j}$ ?