SMART TEST SERIES

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Name:		Subject:	Physics-11
Roll # :		Unit(s):	2,
Class:	Inter Part-I	Test:	Type 2 - SQs Test - Marks=40
Date:		Time:	

SHORT QUESTIONS TEST

1- Write short answers to any 7 questions: (7x2=14)

(i) Can a vector have a component greater than the vector's magnitude? Explain.
(ii) How a vector is subtracted from another vector? Explain using digram.
(iii) Is it possible to add 5 in $2\hat{i}$? Explain.
(iv) Under what circumstances would a vector have components that are equal in magnitude?
(v) 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.
(vi) Under what circumstances would a vector have components that are equal in magnitude?
(vii) Suppose the sides of a closed polygon represent vectors arranged head to tail. What is the sum of these vectors?
(viii) You are falling off the edge. What should you do to avoid falling?
(ix) Prove that dot product is commutative.
(x) What is the moment of a force about the point lying on the axis of rotation?

2- Write short answers to any 7 questions: (7x2=14)

(i) Two vectors have unequal magnitude. Can their sum be zero? Explain.
(ii) Why do you keep your legs far apart when you have to stand in the aisle of a bumpy riding bus?
(iii) Define unit vector and position vector.
(iv) How a vector can be determined from its rectangular components?
(v) If two perpendicular vectors have same magnitude, find the angle between their sum and difference?
(vi) Write down the steps for addition of vectors by rectangular component method.
(vii) Suppose the sides of a closed polygon represent vectors arranged head to tail. What is the sum of these vectors?
(viii) Determine the direction of $\rightarrow_A = -3\hat{i} - 8\hat{j}$ with positive x-axis.
(ix) Can the magnitude of a vector ever be zero? Explain.
(x) Define torque. Write its units and dimensions.

3- Write short answers to any 6 questions: (6x2=12)

(i) Why a null vector can not be added to zero? Explain.
(ii) Explain certesian coordinate system.
(iii) Find unit vector in the direction of the vector $\vec{A} = 12\hat{i} - 5\hat{j}$.
(iv) What is the orientation of three vectors to get their vector sum equal to zero magnitude?
(v) Find the angle between $\rightarrow_A = 2\hat{i} - 2\hat{j}$ and $\rightarrow_B = 2\hat{i} - 2\hat{j}$.
(vi) Define torque and moment arm.
(vii) Mention the criterion for positive and negative torque.
(viii) Give two factors on which turning effect depends.
(ix) State first and second conditions of equilibrium in terms of linear and angular acceleration.