



SMART TEST SERIES

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Name:		Subject:	Physics-11
Roll # :		Unit(s):	2,
Class:	Inter Part-I	Test:	Type 3 - MCQs + SQs Test - Marks=30
Date:		Time:	

Q.1 Four possible answers A, B, C & D to each question are given. Circle the correct one. (10x1=10)

- The magnitude of \hat{A} will be:
(A) 0 (B) A^2 (C) 1 (D) A
- A vector which has magnitude one is called:
(A) Resultant vector (B) unit vector (C) null vector (D) position vector
- Which of the following is vector quantity:
(A) length (B) volume (C) mass (D) velocity
- Two unit vectors are inclined at 90° then magnitude of resultant is:
(A) 2 (B) $\sqrt{2}$ (C) $2\sqrt{2}$ (D) $\sqrt{3}$
- If a vector of magnitude 10 N is along y-axis, then its component along x-axis is:
(A) 0 N (B) 5 N (C) 8.66 N (D) 10 N
- The magnitude of $\hat{i} \cdot (\hat{j} \times \hat{k})$ is equal to:
(A) 0 (B) 1 (C) -1 (D) \hat{i}
- 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) $A \cdot B = \pm AB$ (D) $A \cdot B = |A|B \cos \theta$
- If $\vec{F} = (2\hat{i} + 4\hat{j})$; $\vec{d} = 5\hat{i} + 2\hat{j}$ work done is:
(A) 15 J (B) 18 J (C) Zero J (D) -18 J
- Conventionally anti-clockwise torque is taken as:
(A) zero (B) negative (C) positive (D) neither positive nor negative
- Torque has zero value if angle between r and F is:
(A) 0° (B) 30° (C) 60° (D) 90°

Q.2 Write short answers of the following questions.

(10x2=20)

- Two vectors have unequal magnitude. Can their sum be zero? Explain.
- Under what circumstances would a vector have components that are equal in magnitude?
- 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.
- Explain cartesian coordinate system.
- Is it possible to add 5 in $2\hat{i}$? Explain.
- Find unit vectors in the direction of vector \vec{A} . $\vec{A} = 8\hat{i} + 4\hat{j}$.
- For what orientation of a vector its components have opposite signs, if vector lies in xy plane?
- Show that: $\hat{i} \cdot \hat{j} = \hat{j} \cdot \hat{k} = \hat{k} \cdot \hat{i} = 0$.
- Mention the criterion for positive and negative torque.
- 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.