## Chapter 1: MEASUREMENT

1-1 $\mathbf{~ m i}$ is equivalent to 1609 m so $55 \mathrm{mi} / \mathrm{h}$ is:
a) $15 \mathrm{~m} / \mathrm{s}$
b) $25 \mathrm{~m} / \mathrm{s}$
c) $66 \mathrm{~m} / \mathrm{s}$
d) $88 \mathrm{~m} / \mathrm{s}$

2- A cubic box with an edge of exactly 1 cm has a volume of:
a) $10^{-9} \mathrm{~m}^{3}$
b) $10^{-6} \mathrm{~m}^{3}$
c) $10^{-3} \mathrm{~m}^{3}$
d) $10^{6} \mathrm{~m}^{3}$

3 -The SI base unit for mass is:
a) gram
b) pound
c) kilogram
d) kilopound

4 - A nanosecond is:
a) $10^{9} \mathrm{~s}$
b) $10^{-9} \mathrm{~s}$
c) $10^{-10} \mathrm{~s}$
d) c) $10^{10} \mathrm{~s}$

5-A gram is:
a). $10^{-6} \mathrm{~kg}$
b) $10^{-3} \mathrm{~kg}$
c) 1 kg
d) $10^{3} \mathrm{~kg}$

6- We can write the speed of light ( $\mathbf{c}=\mathbf{2 9 9}, 000,000 \mathrm{~m} / \mathrm{s}$ ) using the scientific notation as:
a) $2.99 \times 10^{8}$
b) $29.9 \times 10^{8}$
c) $0.299 \times 10^{8}$
d) $299 \times 10^{8}$

Problems: 1 ( a , b) and 25 (a).

## Chapter 2: MOTION ALONG A STRAIGHT LINE

1- Complete the following statement: Displacement is
a) a scalar that indicates the distance between two points.
b) a vector indicating the distance and direction from one point to another.
c) a measure of volume.
d) the same as the distance traveled between two points.

2- A particle moves along the $x$ axis from $x_{i}$ to $x_{f}$. which results in the displacement with the largest magnitude?
a). $x_{i}=4 m, x_{f}=6 m$
b). $x_{i}=-4 m, x_{f}=-8 m$
c). $x_{i}=-4 m, x_{f}=2 m$
d). $x_{i}=-4 m, x_{f}=4 m$
3. Suppose the motion of a particle is described by the equation:
$X=20+4 t^{2}$. Find the average velocity of the particle in the time interval $t_{1}=2 s$ to $t_{2}=5 s$ ?
a) $29 \mathrm{~m} / \mathrm{s}$
b) $28 \mathrm{~m} / \mathrm{s}$
c) $84 \mathrm{~m} / \mathrm{s}$
d) $10 \mathrm{~m} / \mathrm{s}$
4. The following are equations of the position of a particle, in which situation the velocity of the particle is constant ?
a) $x=4 t^{2}-2$
b) $x=-2 t^{3}$
c) $x=-3 t-2$
d) $x=4 t^{-2}$
5. The coordinate of a particle in meters is given by $x(t)=16 t-3 t^{3}$, where the time $t$ is in seconds. The particle is momentarily at rest at $t=$
a) 0.75 s
b) 1.3 s
c) 5.3 s
d) 7.3 s

Check point : 1, $2,3,4,5$

## Problems 27, 47

## Chapter 3: VECTORS

1- $A$ vector has two components ( $A x=3 \mathrm{~cm}$ and $A y=-4 \mathrm{~cm}$ ). What is the magnitude of $\mathbf{A}$ ?
a) 4 cm
b) 5 cm
c) 1 cm
d) 7 cm

2-Let $A=(2 m) i+(6 m) j+(3 m) k$ and $B=(4 m) i+(2 m) j-(1 m) k$. the vector sum $\quad S=A+B$ is:
a). $(6 \mathrm{~m}) \mathrm{i}+(8 \mathrm{~m}) \mathrm{j}+(2 \mathrm{~m}) \mathrm{k}$
b). $(-2 m) i+(4 m) j+(4 m) k$
c). $(2 m) i+(4 m) j+(4 m) k$
d). $(8 m) i+(12 m) j+(3 m) k$

3- The value of $k \cdot(k \times i)$ is
a) zero
b) +1
c) -1
d) 3

Check point : 1, $2,3,4,5$

Problems 1, 3,13

## Chapter ( 4 ) MOTION IN TWO AND THREE DIMENSIONS

- A projectile is fired from the ground level over level ground with an initial velocity that has a vertical component of $20 \mathrm{~m} / \mathrm{s}$ and a horizontal component of $30 \mathrm{~m} / \mathrm{s}$.

1- The distance from launching to landing points is:
(a). 40 m
(b) 60 m
(c) 20.4 m
(d) 122 m

2-The maximum height the projectile reached is :
(a). 40 m
(b) 60 m
(c) 20.4 m
(d) 122 m

3-The time the projectile takes to reach its maximum height is:
(a). 4.1 s
(b) 2.05 s
(c) 1.05 s
(d) 0.5 s

## Checkpoint : 2-4-5

## Problem : 1 and 15

## Chapter ( 5 )FORCE AND MOTION --I

## Checkpoint : 1-2-3-4

Problem :1-2(a,b)-6-51

## Chapter ( 6 )FORCE AND MOTION --II

Checkpoint : 1

Problem: 3-42

## Chapter ( 7 )Kinetic Energy and Work

Checkpoint : 1-2

Problem : 13-43

# Chapter ( 9 )Center of Mass and Linear Momentum 

## Problem : 1-18

