Kingdom of Saudi Arabia

Ministry of higher Education

Al-Imam Mohammed Bin Saud Islamic University

College: Science

Department: Physics

بسم الله الرحمن الرحيم

المملكة العربية السعودية

وزارة التعليم العالي

جامعة الإمام محمد بن سعود الإسلامية

Course Name: General Physics

Course Code: 101
Semester/Year: mid (1)
Duration: 45 second

اسم الطالبة	الرقم الجامعي	الشعبة

question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
answer															

A- Choose the correct answer and write the litter on it in the table : 15points

1 - The vector $\vec{A}$ are given as 13.6 m and the x- components of vector $\vec{A}$ are given as $\overrightarrow{A_x}$ is equal 10.7 m , What is the magnitude of Y- components ?

A. 7.8 m
B. 9.5 m
C. 14.2 m
D. 8.3 m

2- For following condition, will the cross product of two vectors be zero:

A. If the angle between them is 90°.
B. If the angle between them is 0°.
C. If the angle between them is 270 °

3 - The components of vector $\vec{A}$ are given as follows: $\overrightarrow{A_x}$ = 5.6 m and $\overrightarrow{A_y}$ = -4.7 m .The magnitude and angle direction of vector $\vec{A}$ is :

A. $|\vec{A}|$ = 7.3 m and θ = 320˚
B. $|\vec{A}|$ = 7.3 m and θ = - 40˚
C. $|\vec{A}|$ = 7.3 m and θ = 35.9˚
D. $|\vec{A}|$ = 52.3 m and θ = 320˚

4 - If vector $\vec{A}$ = (3i + 2j –k) and $\vec{B}$ = (-4i + 7j + 2k), are two vectors in 3-space, then find the vector $3\vec{A} - \vec{B}$=

A. $3\vec{A} - \vec{B}$ = (13i -1j -5k)
B. $3\vec{A} - \vec{B}$ = (5i 13j - 5k)
C. $3\vec{A} - \vec{B}$ = (13i -1j -1k)
D. $3\vec{A} - \vec{B}$ = (-1i 13j -1k)

5 - Express the Cartesian vector q = (3, 4) in polar form.

A. q = (7, 53°)
B. q = (5, 53°)
C. q = (7, 37°)
D. q = (5, 37°)

6 - The value of $\hat{j} \cdot (\hat{k} \times \hat{i})$ is:

A. zero
B. -1
C. +1

7 - The value of subtracting a vector $\vec{A}$ with its negative is:

A. zero
B. $+\vec{A}$
C. $-\vec{A}$
D. $2\vec{A}$

8 - The coordinate of a particle in meters is given by $x(t) = -5t + 2.0t^3$, where the time t is in seconds. The particle velocity in (t = 0 to t = 1) s is :

A. +3 m/s
B. -3 m/s
C. +7 m/s
D. -7 m/s

9 - The coordinate of a particle in meters is given by $x(t) = 3t + 2t^2$, where the time t is in seconds. The particle acceleration in (t = 2) s is :

A. $4 m/s^2$
B. $11 m/s^2$
C. $8 m/s^2$
D. $12 m/s^2$

10 - An object is thrown straight up from ground level with a speed of v m/s. If its distance above ground level y m after t s . its acceleration is :

A. $9.8 m/s^2$
B. $8.9 m/s^2$
C. $7.9 m/s^2$
D. $5.5 m/s^2$

11-A ball is allowed to drop maximum height . After 2 second its velocity will be:

A. - 19.6m/s
B. + 19.6m/s
C. + 9.8 m/s
D. - 9.8 m/s

12 –The displacement is always positive :

A. True
B. False

13 - An object dropped from the window of a tall building hits the ground in 12.0 s, the height of the window above the ground is:

A. – 353m
B. + 705.6 m
C. - 705.6 m
D. + 353 m

14 - The coordinate of a particle in meters is given by $x(t) = 16t - 3.0t^3$, 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

15 - If an object thrown up to reach the maximum height 10 m , so its displacement to return to the same point :

A. 10 m
B. -10 m
C. Zero m
D. 20 m

B- Answer the following equations : 5 points

1- An Object moving with uniform (constant) acceleration has a velocity of 12 m/s in the positive x direction when its x coordinate is 3.0 m. If its x coordinate 2.0 s later is - 5 m, what is the acceleration ?

2- A man walks 5 Km in South , then 13 Km at northeast ,. Find the man resultant displacement ?