اسم مدرس المادة: نور الدين سعيد

رقم الشعبة: الرقم المتسلسل:

The University of Jordan
Faculty of Science
Physics Department

General Physics (1) (302101)
First Exam
. First Semester 2016/2017

Student's Name:...Student's ID..........................

Note 1: Following are 10 multiple-choice questions. Write the symbol of correct answer in the answers' table. _Only_ the answers in the table will be graded.
Note 2: Ignore air resistance in all problems and take $|g| = 9.8$ m/s^2 at the Earth's surface.
**Note 3:** The significant digit notation is not taken into account throughout the given answers.

Answers' Table

Question Number	1	2	3	4	5	6	7	8	9	10
Symbol of Correct Answer	d	e	a	b	d	c	b	a	e	a

Q.1: A particle moves along the x-axis. Its position varies with time according to the expression: $X(t) = 3t^3 - 4t^2 + 2t - 5$, where X is in meters and t is in seconds. The acceleration (in m/s^2) of this particle at t = 1 sec is:

a. 5.0   b. -4.0   c. 3.0   d. 10   e. zero

Q.2: If $\vec{A} = \hat{i} + \hat{j} - \hat{k}$ and $\vec{B} = 2\hat{i} - 3\hat{j} + \hat{k}$, Then, $| 3\vec{A} - 2\vec{B} |$ is:

a. 2.02   b. 5.02   c. 7.14   d. 3.61   e. 10.3

Q.3: A particle moves along the X-axis. Its velocity varies with time as shown in the adjacent figure. The distance (in m) moved by this particle during the time interval $t_i = 0$ to $t_f = 15$ sec is:
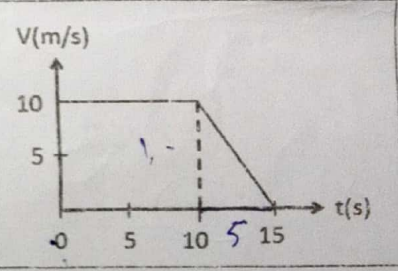
a. 125   b. 100   c. 25   d. 150   e. 200

Q.4: A ball is fired with an initial velocity of 20 m/s that makes an angle of 60^0 above the horizontal direction. The speed (in m/s) of the ball after 1 sec of its launch is:

a. 9.8   b. 12.5   c. 20.0   d. 26.3   e. zero

Q.5: The height (in m) from which an object must be released from rest such that it hits the ground at a speed of 30 m/s is:

a. 19.60   b. 9.80   c. 30.40   d. 45.92   e. 65.17

Q.6: A fireman 50 m away from a burning building directs a stream of water from a ground-level fire hose at an angle of 30^0 above the horizontal. If the speed of the stream as it leaves the hose is 40 m/s. The height (in m) at which the stream of water strike the building is:

a. 11.86　　　　b. 9.80　　　　c. 18.64　　　　d. 25.30　　　　e. 7.63

Q.7: The adjacent figure shows a particle moving clockwise in a circular path of radius 2.50 m. If the total acceleration vector of the particle at the shown instant has a magnitude of 15.0 m/s^2 and makes an angle of 30^0 with the radius (as shown in the figure). For that instant, the speed (in m/s) of the particle is:

a. 65.69　　　　b. 5.69　　　　c. 7.50
d. 12.99　　　　e. 9.80
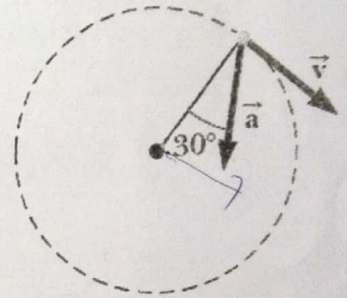
Q.8: A particle initially located at the origin has an acceleration of $\vec{a} = 3\hat{j}$ m/s^2 and an initial velocity of $\vec{V}_i = 5\hat{i}$ m/s. The speed (in m/s) of this particle at t=2 sec is:

a. 7.81　　　　b. 9.80　　　　c. 3.21　　　　d. 10.29　　　　e. Zero

Q.9: The angle enclosed between vector $\vec{A} = 3\hat{i} + 2\hat{j} - \hat{k}$ and the negative Y-axis is:

a. 180^0　　　　b. 75.4^0　　　　c. 37.2^0　　　　d. 90^0　　　　e. 122.3^0

Q.10: The earth has a radius of 6380 km and turns around once on its axis in 24 h. The magnitude (in m/s^2) of the radial acceleration of an object at the earth's equator is:

a. 9.80　　　　b. 0.205　　　　c. 0.034　　　　d. 4.90　　　　e. Zero

Good Luck!!!

POWERUNIT