

Course No: PHS 1304
Course Title: Applied Physics
Date: 22/11/14
No. of Questions: (3)
Time: 1:00 hours
Using Calculator: (Yes)

University of Palestine



Mid Exam
2014-2015
Total Grade:20

Instructor Name: Prof. Abdalkareem Nijim

Student No.: _____

Student Name: _____

College Name: _____

Dep. / Specialist: _____

Using Dictionary: (No)

Question 1:**(6/20)**

This question is composed of two parts. Please make sure you answer the two parts A & B.

A- Find the angle between the two vectors : $\vec{A} = i - 2j + 2k$, $\vec{B} = 2i + 3j - 4k$

B- Check that the equation $x = vt + 1/2 at^2$ is dimensionally correct? ,
Where: x: is coordinate and has unit of length, v: is velocity, a: is acceleration, and t: is the time.

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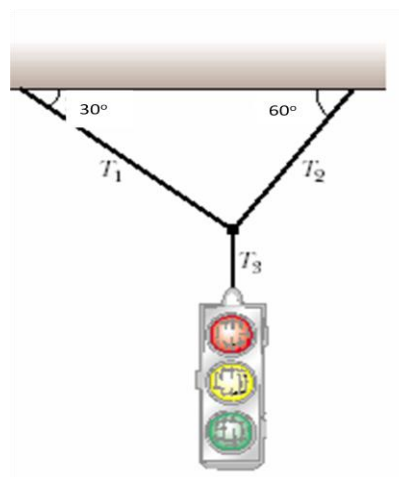
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Question 2:

(7/20)

A traffic light weight 100 N, hangs from a cable tied to two other cables, fastened to a support, as in Figure. The upper cables make angles of 30.0° and 60.0° with the horizontal. If the traffic light in equilibrium, Find the tension in the cables. (Draw F.B.D)



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Question 3:

(7/20)

A person holds a 50.0-N sphere in his hand. The forearm is horizontal. Neglect the weight of the forearm. The biceps muscle is attached 3.00 cm from the joint, and the sphere is 35.0 cm from the joint.

- A- Draw F.B.D. B- Find the upward force exerted by the biceps on the forearm and,
C- Find the downward force exerted by the upper arm on the forearm and acting at the joint.

