

Course No: EQUP 3322  
Course Title: Electromagnetic.  
Date: 14 / 03 / 2017  
No. of Questions: 4  
Time: 60 min.  
Using Calculator (Yes)

University of Palestine



1<sup>st</sup> Midterm Exam  
2<sup>nd</sup> Term 2016/2017  
Total Grade: 15

Instructor Name: Eng. M. Timraz  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: Engineering  
Dep. / Specialist: Biomedical Eng.  
Using Dictionary (No)

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**Q1) Given the points M (0.1, -0.2, -0.1), N (-0.2, 0.1, 0.3), and P (0.4, 0, 0.1), find:**

**(05/15)**

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- a) The vector  $\mathbf{R}_{MN}$ .
  - b) The dot product  $\mathbf{R}_{MN} \cdot \mathbf{R}_{MP}$ .
  - c) The angle between  $\mathbf{R}_{MN}$  and  $\mathbf{R}_{MP}$ .

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**Q2) Point charges of 120 nC are located at A (0, 0, 1) and B (0, 0, -1) in free space.**  
**(05/15)**

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- a) Find E at P(0.5, 0, 0):  
b) What single charge at the origin would provide the identical field strength?

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**Q3) Mention the conditions to generate an EMF in a closed conducting loop (02/15)**

**Q4) Referring to the magnetic field due to the induced current opposes the magnetic moment, Draw the moving of magnetic up and down produces AC current in the closed wire loop. (03/15)**

Good Luck.