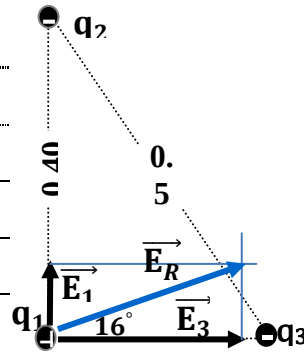


إجابة النموذج التدريبي لامتحان مادة الفيزياء القسم العلمي في الفصل الدراسي الأول للصف الثاني عشر  
 للعام الدراسي 2012 / 2013 م

| الدرجات        |                                                                                                                                                                                              | الإجابات                                                                                                   |                                                                                     |       |              |       |            |     |      |              |   |        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|--------------|-------|------------|-----|------|--------------|---|--------|
| 25             |                                                                                                                                                                                              | $E = k_C \left( \frac{ q }{r^2} \right)$                                                                   | 1                                                                                   | أولاً | السؤال الأول |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_1 = 8.99 \times 10^9 \times \frac{3.0 \times 10^{-6}}{(0.40)^2}$                                        |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_1 = 1.68 \times 10^5 \text{N/C}$                                                                        |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_3 = 8.99 \times 10^9 \times \frac{6 \times 10^{-6}}{(0.30)^2}$                                          |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_3 = 5.99 \times 10^5 \text{N/C}$                                                                        |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $\vec{E}_R = \vec{E}_1 + \vec{E}_3$                                                                        |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_R = \sqrt{(1.68 \times 10^5)^2 + (5.99 \times 10^5)^2}$                                                 |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_R = 6.22 \times 10^5 \text{ N/C}$                                                                       |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $\theta = \tan^{-1} \left( \frac{1.68 \times 10^5}{5.99 \times 10^5} \right) = 15.^\circ \approx 16^\circ$ |  |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $\vec{E} = \frac{\vec{F}_e}{ q_o }$                                                                        | 2                                                                                   |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $F_e = 6.22 \times 10^5 \times 5.0 \times 10^{-6}$                                                         |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              | $E_R$ باتجاه                                                                                               |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                | <table><tr><td>q<sub>2</sub></td><td>q<sub>1</sub></td><td></td></tr><tr><td>موجبة</td><td>سالبة</td><td>نوع الشحنة</td></tr><tr><td>8nC</td><td>12nC</td><td>مقدار الشحنة</td></tr></table> | q <sub>2</sub>                                                                                             | q <sub>1</sub>                                                                      |       | موجبة        | سالبة | نوع الشحنة | 8nC | 12nC | مقدار الشحنة | 3 | ثانياً |
| q <sub>2</sub> | q <sub>1</sub>                                                                                                                                                                               |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
| موجبة          | سالبة                                                                                                                                                                                        | نوع الشحنة                                                                                                 |                                                                                     |       |              |       |            |     |      |              |   |        |
| 8nC            | 12nC                                                                                                                                                                                         | مقدار الشحنة                                                                                               |                                                                                     |       |              |       |            |     |      |              |   |        |
|                | $\phi_E = \frac{q_{en}}{\epsilon_0}$                                                                                                                                                         | 4                                                                                                          | ثالثاً                                                                              |       |              |       |            |     |      |              |   |        |
|                | $\phi_E = \frac{+7 \times 10^{-9} + (-4.5 \times 10^{-9})}{8.85 \times 10^{-12}}$                                                                                                            |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                | $\phi_E = 2.8 \times 10^2 \text{ Nm}^2/\text{C}$                                                                                                                                             |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                | - صفر لأن النقطة تقع داخل الموصل                                                                                                                                                             | 5                                                                                                          | السؤال الثاني                                                                       |       |              |       |            |     |      |              |   |        |
|                | $E = k_C \left( \frac{ Q }{r^2} \right)$                                                                                                                                                     | 6                                                                                                          |                                                                                     | أولاً |              |       |            |     |      |              |   |        |
|                | $\frac{8000}{2000} = \frac{(R+0.02)^2}{(R)^2}$                                                                                                                                               |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                | $R = 0.02 \text{ m}$                                                                                                                                                                         |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |
|                |                                                                                                                                                                                              |                                                                                                            |                                                                                     |       |              |       |            |     |      |              |   |        |

| الدرجات | الإجابات |  |  |  |
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| الدرجات |                                                             | الإجابات                                                                                                                        |        |               |    |
|---------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------|---------------|----|
| 25      |                                                             | مقاومة المقاوم ثابتة لا تتغير بتغير فرق الجهد بين طرفيه فهو مقاوم أومي.                                                         |        | السؤال الثالث | 15 |
|         |                                                             | 4.5 V                                                                                                                           |        |               |    |
|         |                                                             | يرسم مماسا لمنحنى المقاوم B بحيث يكون موازيا لمنحنى المقاوم A                                                                   |        |               |    |
|         |                                                             | والنقطة التي يمسه المماس على المنحنى B يحدد فرق الجهد التي يقابلها على محور فرق الجهد                                           |        |               |    |
|         |                                                             |                                                                                                                                 |        | رابعاً        | 16 |
|         |                                                             | (1).....                                                                                                                        |        |               |    |
|         |                                                             | $F_e = F_g \sin \theta$ .....(2)                                                                                                |        |               |    |
|         |                                                             |                                                                                                                                 |        |               |    |
|         |                                                             | $k_c \frac{ q_1  \times  q_2 }{r^2} = F_g \sin \theta$                                                                          |        |               |    |
|         |                                                             | $8.99 \times 10^9 \left[ \frac{q^2}{(2 \times 0.60 \sin 15)} \right] = 0.050 \times \tan 15$<br>$q = \pm 6.80 \times 10^{-7} C$ |        |               |    |
|         |                                                             |                                                                                                                                 |        | أولاً         | 17 |
|         |                                                             | القوة الكهربائية تساوي قوة الجاذبية.                                                                                            |        |               |    |
|         |                                                             | السعة الكهربائية للموصل.                                                                                                        |        |               |    |
|         |                                                             | مقدار شدة المجال الكهربائي متساوي بالقرب من سطحه                                                                                |        |               |    |
|         |                                                             | تقل المسافة بين صفيحتي المكثف فتزداد سعته الكهربائية.                                                                           |        |               |    |
|         |                                                             | 2.5 Ω                                                                                                                           |        |               |    |
|         |                                                             |                                                                                                                                 | ثانياً | 23            |    |
|         | شدته و اتجاهه تتغير بشكل دوري                               |                                                                                                                                 |        |               |    |
|         |                                                             |                                                                                                                                 |        |               |    |
|         |                                                             |                                                                                                                                 |        |               |    |
|         | $\frac{220 \times 11}{1000} \times 12 \times 7 \times 0.35$ |                                                                                                                                 |        |               |    |
|         | درهماً 71 = التكلفة                                         |                                                                                                                                 |        |               |    |
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