**ABES67**

Physics and Astronomy Department

College of Sciences-King Saud University

111 Phys, First Midterm Exam, Second Semester 21/05/1436 H

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| الرقم الجامعي: | اسم الطالب: |
| الشعبة: | اسم عضو هيئة التدريس: نورة العنيزان |
| عدد الصفحات 2 | المدة الزمنية للامتحان ساعة |

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1. There are two charges 1μc and 6μc, the ratio of forces acting on them will be .

a) 1:25 b) 1:6 c) 1:1 d) 6:1

1. What are electric field lines for two protons and one electron?

a) b) c) d)



1. The electric field at point A is zero. What is charge Q1? 

a) +32μC

b) –32μC

c) +16μC

d) –16μC

1. The electric potential at a point of distance 1 m from 2 μc charge is

a) 1.8 x 106 V

b) 1.8 x 106 N/C

c) 1.8 x 104 V

d) 1.8 x 105 V

1. Consider three point charges located at the corners of a right triangle as shown in Figure. where q1=q3= 2C, q2=-5C, and a=0.10 m. Find the resultant force exerted on q2.



1. A charge q1= 2mC is located at the origin, and a charge q2= - 6mC is located at (0, 3) m, as in Figure, Find the total electric potential due to these charges at the point P, whose coordinates are (4, 0) m.



1. A parallel-plate capacitor has plates of dimensions 2cm by 3cm separated by a 1mm thickness of paper.
2. Find its capacitance.
3. What is the maximum charge that can be placed on the capacitor?
4. Find the equivalent capacitance between points a and b in the combination of capacitors shown in Figure.



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