Exam

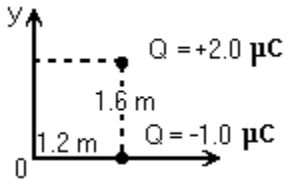
Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) What is the electric field strength if the flux through a 2.0 m by 1.0 m rectangular surface is 156.0 N•m^2/C, if the electric field is uniform, and if the normal to the surface is at an angle of $\pi/3$ radians with respect to the direction of the field?
A) 39 N/C B) 90 N/C C) 78 N/C D) 156.0 N/C

2) A charge of 9.0 x 10^{-6} μC is located inside a sphere. What is the flux through the sphere?
A) 0.25π N•m^2/C
B) 80 N•m^2/C
C) It cannot be determined if the radius is unknown.
D) 1.0 N•m^2/C

Figure 22.2



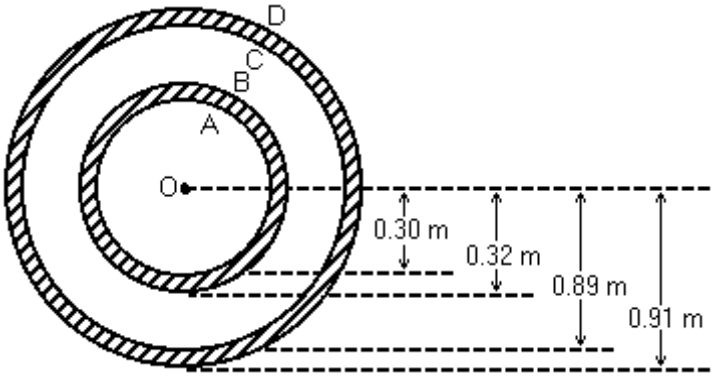
Two point charges, Q_1 = –1.0 μC and Q_2 = +2.0 μC, are placed as shown.

3) In Figure 22.2, the number of excess electrons in charge Q_1 is closest to:
A) 6 x 10^{11} B) 6 x 10^{12} C) 2 x 10^{11} D) 2 x 10^{13} E) 2 x 10^{12}

4) In Figure 22.2, the x–component of the electric field, at the origin O, is closest to:
A) –3600 N/C B) +2700 N/C C) –9000 N/C D) +3600 N/C E) –2700 N/C

5) In Figure 22.2, the y–component of the electric field, at the origin O, is closest to:
A) +3600 N/C B) zero C) –3600 N/C D) +2700 N/C E) –2700 N/C

Figure 23.3



Two hollow conducting spheres have a common center O. The dimensions of the spheres are as shown. A charge of −100 nC is placed on the inner conductor and a charge of +60 nC is placed on the outer conductor. The inner and outer surfaces of the spheres are respectively denoted by A, B, C, and D, as shown.

6) In Figure 23.3, the charges on surfaces A and B respectively, in nC, are closest to:
A) 0 and −100 B) −40 and −60 C) 0 and −60 D) 0 and −40 E) −60 and −40

7) In Figure 23.3, the charges on surfaces C and D respectively, in nC, are closest to:
A) +100 and +60
B) 0 and +60
C) +100 and −40
D) +60 and 0
E) +60 and −40

Answer Key
Testname: 1BA–QUIZ1

1) D
2) D
3) B
4) D
5) C
6) A
7) C