

PHYS 2326 University Physics II – Class number -44402

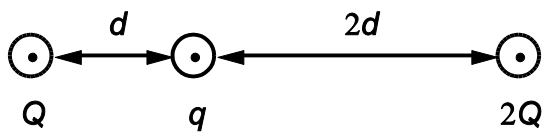
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QUIZ#1

CHAPTERS: 23, 24, 25, 26

JULY 15, 2013

1. In the figure, if $Q = 30 \mu\text{C}$, $q = 5.0 \mu\text{C}$, and $d = 30 \text{ cm}$, what is the magnitude of the electrostatic force on q ?



- a. 15 N
- b. 23 N
- c. zero
- d. 7.5 N
- e. 38 N

ANS=d.

2. A uniformly charged rod (length = 2.0 m, charge per unit length = 5.0 nC/m) is bent to form one quadrant of a circle. What is the magnitude of the electric field at the center of the circle?

- a. 62 N/C
- b. 56 N/C
- c. 50 N/C
- d. 44 N/C
- e. 25 N/C

ANS=c.

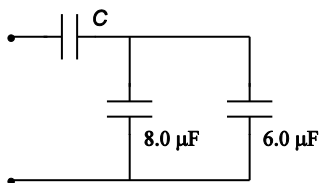
3. A long cylindrical shell (radius = 2.0 cm) has a charge uniformly distributed on its surface. If the magnitude of the electric field at a point 8.0 cm radially outward from the axis of the shell is 85 N/C, how much charge is distributed on a 2.0-m length of the charged cylindrical surface?
- a. 0.38 nC
 - b. 0.76 nC
 - c. 0.19 nC
 - d. 0.57 nC
 - e. 0.98 nC

ANS=b.

4. A particle ($m = 2.0 \mu\text{g}$, $q = -5.0 \text{ nC}$) has a speed of 30 m/s at point A and moves (with only electric forces acting on it) to point B where its speed is 80 m/s. Determine the electric potential difference $V_A - V_B$.
- a. -2.2 kV
 - b. +1.1 kV
 - c. -1.1 kV
 - d. +2.2 kV
 - e. +1.3 kV

ANS=c.

5. If $C = 10 \mu\text{F}$, what is the equivalent capacitance for the combination shown?



- a. $7.5 \mu\text{F}$
- b. $6.5 \mu\text{F}$
- c. $7.0 \mu\text{F}$
- d. $5.8 \mu\text{F}$
- e. $13 \mu\text{F}$

ANS=d.