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Final review

Chapter 1

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Grade 12 General / physics
Trimester 1 / Academic Year 2019-2020
Prepared by Mohanned Sami

Student Name

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Q1: Chose the correct answer of the following questions.

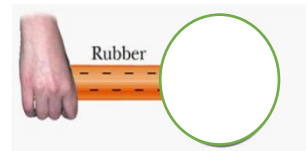
1- If a balloon rubbed to the head hair, which of the following statements is correct ?

- A. The hair becomes positively charge, by losing electrons.
- B. The balloon becomes negatively charge, by losing electrons.
- C. The hair becomes positively charge, by gaining protons.
- D. The balloon becomes negatively charge, by gaining protons.



2- A negatively charged rubber rod, touched a neutral conductor sphere, which of the following statements is correct?

	Sphere's Charge	The sphere's charge distribution
A	Negative	inside the sphere
B	Positive	Outside surface of the sphere
C	Negative	Outside surface of the sphere
D	Positive	Inside and outside surface of the sphere



3- Why is rubber a good insulator?

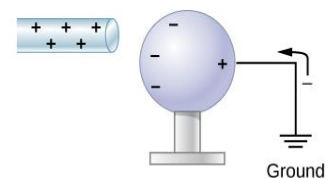
- A. Its electrons move readily.
- B. Its electrons cannot move readily.
- C. It always has a negative charge.
- D. Its protons move readily.

4- Which of the following is a conductor?

- A. The Plastic.
- B. The Glass.
- C. The Dry air.
- D. The Plasma.

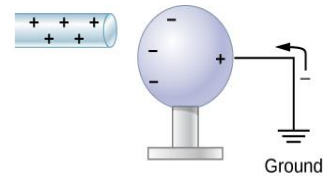
5- What is the name of charging way shown in the figure beside?

- A. Induction
- B. Conduction
- C. Grounding
- D. Creating charges



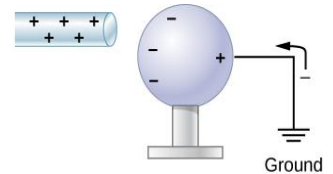
6- What is the charge of the sphere shown in the figure after removing the grounding and then removing the positively charged rod?

- A. Positive
- B. Negative.
- C. Neutral.
- D. None of above.



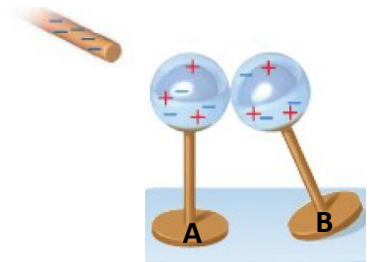
7- What is the charge of the sphere shown in the figure after removing the positively charged rod and then removing the grounding?

- A. Positive
- B. Negative.
- C. Neutral.
- D. None of above.



8- Two identical isolated neutral conducting spheres (A,B) touch each other as shown in the figure, if a Negatively charged rod brought near sphere A what is the charge of sphere B if it's taken away from sphere A and then the rod removed?

- A. Positive
- B. Negative.
- C. Neutral.
- D. None of above.



9- A negatively charged rod brought near a charged electroscope, the leaves fall closer together, what is the charge of the electroscope?

- A. Positive
- B. Negative.
- C. Neutral.
- D. Positive and negative.

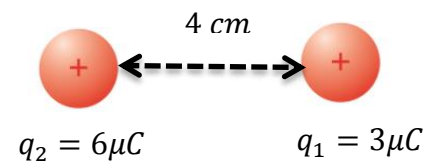
10- A negatively charged rod brought near a negatively charged electroscope, how to describe the behavior of the leaves?

- A. The leaves fall closer together.
- B. The leaves spread apart farther.
- C. The leaves hang loosely.
- D. Nothing will change.



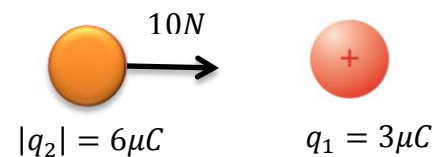
11- Find the magnitude of electrostatic force between the point charges shown in the figure, and determine the type of the force.

	The magnitude	The type
A	$4.0 \times 10^2 N$	Attraction
B	$3.0 \times 10^2 N$	Repulsion
C	$2.0 \times 10^2 N$	Attraction
D	$1.0 \times 10^2 N$	Repulsion



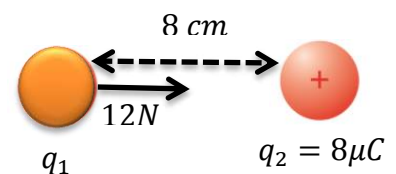
12- Find the distance between the two point charges shown in the figure, and determine the sign of charge q_2 .

	The distance	The sign of q_2
A	0.13 m	Positive
B	0.13 m	Negative
C	1.6 m	Positive
D	1.6 m	Negative



13- According to the figure, find the magnitude and sign of the point charge q_1 .

	The distance	The sign of q_2
A	$0.1 \times 10^{-6} C$	Positive
B	$1.1 \times 10^{-6} C$	Negative
C	$3.5 \times 10^{-6} C$	Positive
D	$4.6 \times 10^{-6} C$	Negative

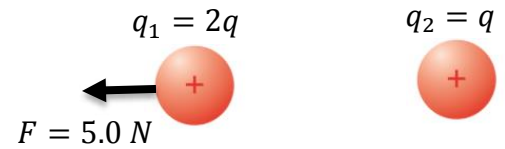


14- Which of the following is the unit of coloumb constant K ?

- A. $N.m^2/C$
- B. $N.m/C^2$
- C. $N.m^2/C^2$
- D. $N^2.m^2/C^2$

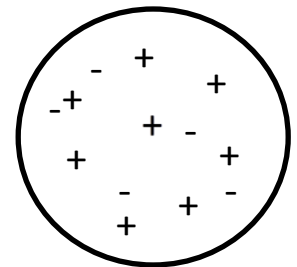
15- From the figure , determine the magnitude and the direction of the force on q_2 ?

- A. 5.0 N , to the left.
- B. 5.0 N, to the right.
- C. 2.5 N, to the left.
- D. 2.5 N, to the right.



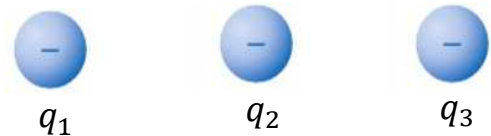
16- What is the charge of the object in the figure beside?

- A. Negative.
- B. Positive.
- C. Neutral.
- D. Negative and positive.



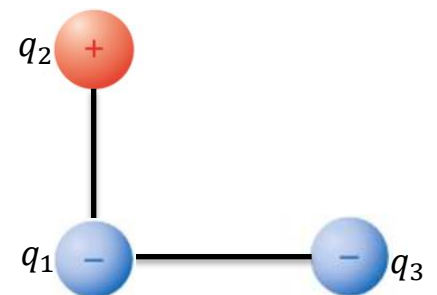
17- What is the direction of the net electrostatic force on point charge q_3 shown in the figure (all point charges on the same line)

- A. Right.
- B. Left.
- C. Up.
- D. Down.



18- What is the direction of the net electrostatic force on point charge q_1 shown in the figure .

A	
B	
C	
D	



19- Which of the following represent the elementary charge?

- A. The charge of the electron
- B. The charge of the atom
- C. The charge of the nucleus.
- D. The charge of the neutron.

20- How many electrons have been removed from a positively charged conducting object if it has a net charge of $7.5 \times 10^{-11} \text{ C}$?

- A. 7.5×10^{-11} electrons
- B. 2.1×10^{-9} electrons
- C. 1.2×10^8 electrons
- D. 4.7×10^8 electrons

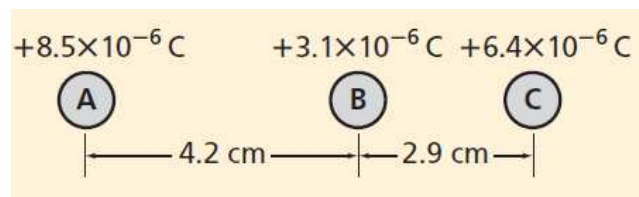
21- What is the charge on a conducting sphere that has an excess of 4.8×10^{10} electron?

- A. $3.3 \times 10^{-30} \text{ C}$
- B. $7.7 \times 10^{-9} \text{ C}$
- C. $4.8 \times 10^{-10} \text{ C}$
- D. $4.7 \times 10^{10} \text{ C}$

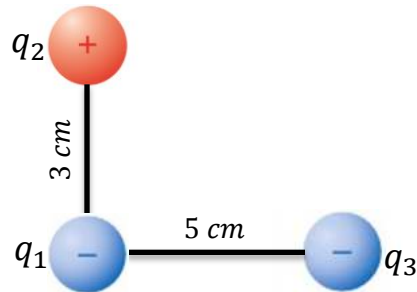
Mohannad Sami

Q2: Solve the following problems:

1- Three charges, A, B, and C, are located in a line, as shown below. What is the net force on charge B?



2- Three point charges are located as shown in the figure below, Find the net electrostatic force on point charge q_1



3- If the electrostatic force between two charged spheres is F , how does this force change in these following cases.

➤ If the distance between the spheres is doubled.

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➤ If the distance between the spheres is halved.

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➤ If the charge of each sphere is halved.

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