

PHYSICS 3204
UNIT 2- SECTION 1:ELECTROSTATIC
Worksheet 1 -Electric Charge And Laws of Electric Charge



PART A: MULTIPLE CHOICE

1. What is the term used to describe the electricity which results from a build up of electric charges on an object?
 - (A) Current Electricity
 - (B) Electroscope
 - (C) Grounding
 - (D) Static electricity

2. What are the two kinds of electric charges?
 - (A) Electron and neutron
 - (B) Negative and proton
 - (C) Neutral and charged
 - (D) Positive and negative

3. Which of the following sub atomic particles move to cause static electricity?
 - (A) Electron
 - (B) Neutron
 - (C) Protons
 - (D) Protons and Electron

4. Which of the following is positively charged?

(A)



(B)



(C)

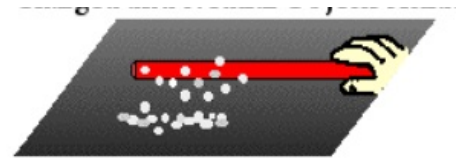


(D)



5. When an uncharged object loses electrons, what type of charge does it develop?
- (A) Ionic
 - (B) Negative
 - (C) Neutral
 - (D) Positive

6. How does a negatively charged object become neutral?
- (A) It gains electrons.
 - (B) It gains protons.
 - (C) It loses electrons.
 - (D) It loses protons.
7. Two objects have collected static electricity with the same charge. What would the objects do when placed near each other?
- (A) Attract
 - (B) Nothing
 - (C) Repel
 - (D) Stick together
8. How will two objects that have unlike charges behave?
- (A) They will attract one another.
 - (B) They will charge one another.
 - (C) They will ionize one another.
 - (D) They will repel one another.
9. How will two glass rods charged in the same way react to each other?
- (A) They will repel one another.
 - (B) They will attract one another.
 - (C) They will neutralize one another.
 - (D) They will not affect one another.
10. The picture below shows a positively charged rod attracting pieces of paper that are not charged. Which Law of Static Electricity best explains this?



- (A) Like charges repel
 - (B) Opposite Charges attract
 - (C) Neutral objects are attracted to charged objects
 - (D) Neutral objects are attracted to neutral objects
11. What are materials that prevent charges from moving freely called?
- (A) Balanced
 - (B) Conductors
 - (C) Insulators
 - (D) unbalanced
12. Which of the following is a conductor?
- (A) Copper
 - (B) Plastic
 - (C) Sand
 - (D) Wood
13. How many excess electrons reside on a metal sphere with a charge of -0.150 C ?
- (A) 9.11×10^{-31}
 - (B) 1.60×10^{-19}
 - (C) 9.38×10^{17}
 - (D) 6.24×10^{18}

14. Which describes why a plastic comb that has been pulled through hair becomes negatively charged?
- (A) gains electrons from the hair
 - (B) gains protons from the hair
 - (C) loses electrons to the hair
 - (D) loses protons to the hair
15. What is the net charge on a conductor having 300 excess electrons?
- (A) $-5.3 \times 10^{-22} \text{ C}$
 - (B) $-4.8 \times 10^{-17} \text{ C}$
 - (C) $4.8 \times 10^{-17} \text{ C}$
 - (D) $5.3 \times 10^{-22} \text{ C}$
16. What happens to a neutral electroscope that is briefly touched with a positively charged glass rod?
- (A) gains electrons
 - (B) gains protons
 - (C) loses electrons
 - (D) loses protons
17. How many electrons are transferred when a $5.0 \mu\text{C}$ charged rod touches an electroscope?
- (A) 5.0×10^6
 - (B) 3.1×10^{13}
 - (C) 3.1×10^{19}
 - (D) 8.0×10^{25}
18. Why are small pieces of paper attracted to a comb that has been rubbed through human hair?
- (A) The comb becomes positively charged and the paper becomes negatively charged.
 - (B) The paper becomes positively charged and the comb becomes negatively charged.
 - (C) The comb becomes charged and electrons in the paper are rearranged.
 - (D) The paper becomes charged and electrons in the comb are rearranged.
19. A $+2.0 \mu\text{C}$ rod touches a neutral electroscope. What charge is left on the electroscope after the rod is removed?
- (A) $-2.0 \mu\text{C}$
 - (B) $-1.0 \mu\text{C}$
 - (C) $+1.0 \mu\text{C}$
 - (D) $+2.0 \mu\text{C}$
20. Two conducting spheres of equal size have a charge of -3 C and $+1 \text{ C}$, respectively. A conducting wire is connected from the first sphere to the second. What is the new charge on each sphere?
- (A) -4 C
 - (B) $+4 \text{ C}$
 - (C) -1 C
 - (D) $+1 \text{ C}$