

1. What are the units for
  - a) electrical force
  - b) electric field
  - c) electric potential
  - d) electrical potential energy
  - e) electric charge
  - f) current
2. Which of the above are vectors?
3. What are electric field lines? How do you determine the direction and strength of the field using electric field lines?
4. What is the definition of electric potential? What is the difference between electric potential and electric potential energy?
5. In a hollow conducting sphere, where does the charge reside? What is the strength of the electric field inside the conductor?  
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6. How is electric field similar to gravitational field? How is it different?
7. What happens to the electric potential energy of an electron if it moves in the direction of an electric field- does it increase or decrease? What happens if a proton is moved in the direction of the field?
8. If two electrons are brought closer together what happens to the potential energy-does it increase or decrease? What happens if the charges have opposite signs?  
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9. What is the equation used to calculate the electric field around a charge?
10. What happens to the electric field if the distance from the charge to the point (where the electric field is calculated) is doubled? What happens if the charge is doubled? What happens if the charge and distance are both doubled?

11. Know how to draw electric field lines around charges. Check your notes.
  
12. Write down all the equations that you will be using. Make sure you know what all the symbols stand for.
  
13. The work done in pushing a 2C charge to a certain position is 40 J. What is its potential with respect to its starting position?
  
14. The electric field at a given point is 10 N/C. What is the force experienced by a 0.25 C charge?
  
15. A 0.5 C charge has electrical potential energy of 20 J. What is its electric potential?
  
16. A 0.5 C charge experiences a force of 50 N at a certain point. What is the electric field at that point?
  
17. Calculate the number of electrons necessary to charge a conductor to + 5 microcoulombs. Do the electrons have to be removed or added?
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