

Module 04 Baseline Quiz

Read sections 7.1 - 7.6

1. What is electric potential energy?
 - a) It is the negative of the work done by the electric force.
 - b) The kinetic energy of an electric charge in motion.
 - c) The energy of an electron at rest.
 - d) None of the above.
2. Which of the following is a definition of electric potential difference?
 - a) The change in potential energy of a charge q moved between two points, divided by its charge.
 - b) The change in potential energy of a charge q moved between two points, multiplied by its charge.
 - c) The change in electric potential energy of a charge q moved between two points.
 - d) The difference in voltage of two battery terminals.
 - e) None of the above.
3. The electric potential energy of two negative point charges placed some distance d apart is:
 - a) positive
 - b) negative
 - c) zero
 - d) None of the above.
4. What is an electron-volt?
 - a) A unit of electric potential.
 - b) A unit of energy.
 - c) A unit of charge.
 - d) None of the above.
5. Is the electric force a conservative force?
 - a) yes
 - b) no
 - c) None of the above.
6. Which of the following formulas gives the approximate electric potential of an electric dipole with charge q and length d , at some distance r away?

a) $V = \frac{k\vec{p} \cdot \hat{r}}{r}$

b) $V = \frac{kqd \cos \theta}{r^2}$

c) $V = \frac{kqd \cos \theta}{r}$

d) $V = \frac{k\vec{p} \cdot \vec{r}}{r^2}$

e) None of the above.

7. What is the electric potential difference between opposite sides of a conducting sphere of diameter D in electrostatic equilibrium, placed in a uniform electric field with strength E .

a) ED

b) $\pm ED$

c) zero

d) It depends on whether or not there is excess charge on the sphere.

e) None of the above.

8. The electric potential due to multiple point charges can be found

a) by adding the potential due to each charge separately as vectors.

b) by adding the potential due to each charge separately as scalars.

c) only when the charges are positive.

d) actually, it cannot be determined.

e) None of the above.

9. How is the electric field related to electric potential?

a) the field is proportional to the integral of the potential.

b) the field is proportional to the derivative of the potential.

c) the field is proportional to the potential plus a constant.

d) None of the above.