

ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION

SOLUTION TO WORK SHEET 1

Subject: PHYSICS

Class: XII Chapter : Electrostatics	Topic: Coloumb's Law. Intensity of a	Date : 2.5.20 point charge.Lines of force				
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Multiple Choice Questions:		1x15=15				
1. Which of the following statements is not true for Coulomb's law in electrostatics?						
a) the law is applicable only for point charge.						
b) the law is applicable for any d	b) the law is applicable for any distance.					
c) according to this law force bet	ween two charges depends on the medium.					
d) it is an inverse square law.						
Ans:(b) the law is applicable for an	y distance					
2.Select the correct statement						
a) both of electrostatic force and gravitational force are non conservative forces						
b) electrostatic force is conservative but gravitational force is non conservative.						
c) electrostatic force is non conservative but gravitational force is conservative.						
d) both of electrostatic force and gravitational force are conservative forces.						
Ans:(d) both of electrostatic force and gravitational force are conservative forces						
3.Number of e.s.u of charge in 1	C is					
a) 3x10 ¹⁰ b) 3x10 ⁹	c)3x10 ⁸	d)1/300				
Ans: (b) 3x10 ⁹						
4. Charge q_1 exerts force on ano on q_2	ther charge q_2 A third charge q_3 is brought near	them .The force applied by q_1				
a) will decrease						

b) will increase

c) will remain the same

d) will increase if the nature of q_1 and q_2 is the same and will decrease if their nature is opposite

Ans: c) will remain the same

5. Two point charges separated by a distance d repel each other with a force of 9N. If the separation between them becomes 3d, the force of repulsion will be

a)1N		b) 3N	c) 6N		d) 27N
Ans:(a) 1	١				
6. Any two electric lines of force never intersect because					
a) at the point of intersection two tangents can be drawn on two lines					
b) two pe	pendiculars o	can be drawn on two lines			
c) neither tangents nor perpendiculars can be drawn					
d) they are always parallel					
Ans : (a) at the point of intersection two tangents can be drawn on two lines					
7. A meta	rod of length	10 cm is given a charge 8 x 10^{-8}	C.The linea	r charge density	of the rod will be
a) 8 x 1	0 ⁻⁷ C/m	b) 8 x 10 ⁷ C/m	c) 8 x 10 ²	C/m	d) Zero
Ans : (a)	8 x 10 ⁻⁷ C/m				
3.When a m	etal plate is i	ntroduced between two charges	s kept at sor	ne distance from	each other, electrostatic

8 force between the two charges will

a) decrease D) increase C) remain the same	b) Increase	c) remain the same	d) zero
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Ans:(a) decrease

9. Two point charges +4q and +q are placed 30 cm apart .The electric field intensity at a point on the line joining the two charges is zero . The point is situated at a distance

a) 15 cm from 4q b) 20 cm from 4q c) 7.5 cm from 4q d) 5 cm from q

Ans: (b)20 cm from 4q.

10. A hallow charged sphere of radius 2 m does not produce any field intensity

a) at any internal point of the sphere

b) at any external point of the sphere

c) at a distance greater than 2 m

d) at a distance greater than 10 m

Ans: (a) at any internal point of the sphere

11. An electron of charge -q and mass m is placed in a uniform electric field of intensity E. The value of E is such that the force on the electron due to the electric field is equal to its weight .Under this condition the value of E

a) mg/e	b) mge	c)e/mg	d) eg/m		
Ans: (a) mg/e					
12. Due to an electric charge Q , field intensity at the position of test charge q_0 is E . If the test charge is replaced by $-q_0$, then field intensity becomes					
a)-q₀E	b) - E/q 0	c) 0	d) E		
Ans: (d) E					
13 If E be the intensity of the electric field at a distance r (r>R) due to a uniformly charged spherical shell, then					
a)Eαr	b) Ε α 1/r	c) E α r ²	d) Ε α 1/r²		
Ans(d) E α 1/r²					
14. The intensity of the electric field is E Vm ⁻¹ . Force in N on a charge q coulomb placed in the field is					
a) E/q	b) Eq	c)q/E	d)2Eq		
Ans: (b) Eq					
15. The coulomb force between two charges depends on which property of the medium?					
a) magnetic permeabil	lity b)electric permittivity o	c)refractive index d) dens	ity		
Ans: (b) electric permittivity.					

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