

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

LECTURE 10

10

1. The electric field E is defined as the force F per unit charge q that a small positive test charge would experience if placed at the point in question. $E = F/q$.

2. The electric field E is a vector field. It is represented by a vector E at each point in space.

3. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

4. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

5. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

6. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

7. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

8. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

9. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

10. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

11. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

12. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

13. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

14. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

15. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

16. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

17. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

18. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

19. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

20. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

21. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

22. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

23. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.

24. The electric field E is a conservative field. It can be represented by a scalar potential V such that $E = -\nabla V$.

25. The electric field E is a solenoidal field. It has zero divergence: $\nabla \cdot E = 0$.

26. The electric field E is a curl-free field. It has zero curl: $\nabla \times E = 0$.