



QP CODE: 19102138



19102138

Reg No :

Name :

B.Sc. DEGREE (CBCS) EXAMINATION, OCTOBER 2019

Third Semester

B.Sc Electronics Model III

CORE COURSE - EL3CRT08 - ELECTROMAGNETIC THEORY

2017 Admission Onwards

90D69434

Maximum Marks: 80

Time: 3 Hours

Part A

Answer any ten questions.

Each question carries 2 marks.

1. How cartesian coordinates are converted to cylindrical coordintes?
2. Define stoke's theorem.
3. What is Divergence theorem?
4. Define energy density in electro static fields.
5. Define electrical potential and potential difference.
6. Define Conductors.
7. Explain linear, Isotropic and homogeneous dielectric.
8. What are the sources of electric field and magnetic field?
9. Explain the Fleming's right hand rule .
10. What is magnetic screening?
11. Explain Gauss's law for magnetostatics.
12. Define radiation resistance.

(10×2=20)





Part B

Answer any six questions.

Each question carries 5 marks.

13. Explain the physical interpretation of divergence.
14. Explain the physical interpretation of curl.
15. Prove that $E = -\nabla V$.
16. Derive the electro static boundary conditions.
17. Define magnetic dipole.
18. Explain the concept of magnetic energy.
19. What is uniform plane wave? Why is the study of uniform plane waves important?
20. Explain Directivity.
21. Explain the concept of Hertzian dipole.

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. What are the physical interpretation of Divergence and curl?
23. State and prove Gauss's law. Explain Applications of Gauss's law with an example.
24. Explain magnetic boundary conditions in detail.
25. Explain the properties of isotropic radiator. Derive an expression for the total electric field for two isotropic point sources, one of which is placed at the origin and other at a distance from the first.

(2×15=30)

