

V92/S34221/EE/20160711

Time : 3 Hours

Marks : 80

Instructions :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
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1. Solve any **four** sub-questions.
 - a) Compare and contrast between conductors and insulators. 5
 - b) State and explain Coulomb's law. Write equation for it. 5
 - c) Elaborate on Forces between Multiple Charges. Write equation for the corresponding force. 5
 - d) Define electric lines of force, flux. Define and explain Electric Dipole. 5
 - e) Write equation for electric field due to a Continuous Charge Distribution. 5
2. Solve any **four** sub-questions.
 - a) State and write for Gauss's Law. 5
 - b) Write brief note on various application of Gauss's Law. 5
 - c) Explain the concept of electric dipole. Explain and write equation for potential due to an electric dipole. 5
 - d) Explain and write equation for potential due to system of charges. 5
 - e) Explain and write equation for potential energy of a system of two charges in an external field. 5

3. Solve any **four** sub-questions.
- a) Write brief notes on Electrostatic field:
 - i) Inside a conductor
 - ii) At the surface of a charged conductor
 - iii) Throughout the volume of the conductor 5
 - b) Explain the concept of Dielectrics and Polarization with suitable diagrams. 5
 - c) Explain and write equation for parallel plate capacitor with suitable diagram. 5
 - d) Write the equation for parallel plate capacitor with Dielectric between the plates. Explain the effect of dielectric on capacitance. 5
 - e) Explain and write equations for capacitors arranged in parallel. 5
4. Solve any **four** sub-questions.
- a) Explain and write equation for energy stored in a capacitor. 5
 - b) Explain the working of Van De Graff generator with suitable diagram. 5
 - c) Explain and write equation for Biot-Savart Law. 5
 - d) Explain and write equation for Ampere's Circuital Law. 5
 - e) Explain and write equation for Faraday's Law of Induction. 5

