



JAP-003-1271002 Seat No. _____

M. Sc. (ECI) (Sem. I) (CBCS) (WEF-2016) Examination

November - 2019

Paper - 2 Foundation of Electronics

(New Course)

Faculty Code : 003

Subject Code : 1271002

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions carry equal marks.
(2) Figures on right hand side indicate marks.

- 1** Answer the following : (Any **Seven**) **14**
- (1) What is conservation of charge ?
 - (2) What is one Coulomb of charge ?
 - (3) Write the formula for Coulomb's law in dielectric medium.
 - (4) Define electric field intensity.
 - (5) Define 1-Volt.
 - (6) Write the definition of electric current.
 - (7) Define capacitance of capacitor.
 - (8) What is resistance of conductor ?
 - (9) Write the equation of electric power.
 - (10) What is inductor ?
- 2** Answer the following : (Any **Two**) **14**
- (1) Write a note on capacitance of a parallel plate capacitor. **7**
 - (2) Explain additivity of charge and quantization of charge. **7**
 - (3) With proper diagram show that there exists two types of charges: positive and negative. **7**

- 3 Answer the following : 14
- (1) Discuss electric field intensity due to a point charge. 7
 - (2) Define current and write about the current as the flow of charge. 7

OR

- 3 Answer the following : 14
- (1) Explain potential difference and write important points for definition of potential difference. 7
 - (2) Derive the formula of work done in moving a test charge q_0 from one point to another in an electric field of a point charge. 7

- 4 Answer the following : 14
- (1) Write about the parallel combination of resistances. 7
 - (2) Define capacitance and write the factors affecting the capacitance of a conductor like size, nature of medium and neighborhood of other conductor. 7

- 5 Answer the following : (Any Two) 14
- (1) Write a note on series combination of capacitors. 7
 - (2) Explain series combination of resistances. 7
 - (3) Explain electric field inside dielectric material between two plates of capacitor. 7
 - (4) Discuss the effect on capacitor when the space between two plates is filled partly by a slot of metal. 7
