



C16-EC-106

**6033**

**BOARD DIPLOMA EXAMINATION, (C-16)  
OCT/NOV—2018  
DECE—FIRST YEAR EXAMINATION**

**ELEMENTS OF ELECTRICAL ENGINEERING**

Time : 3 hours]

[ Total Marks : 80

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**PART—A**

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define absolute and relative permeability.
2. State the Fleming's left hand rule.
3. Define the term electric potential.
4. Three capacitors  $10\mu\text{F}$ ,  $20\mu\text{F}$  and  $50\mu\text{F}$  are connected in parallel. Find the total capacitance.
5. Define the terms :  
(a) Inductive reactance (b) Impedance
6. Define Q-factor of a coil.
7. Define voltage transformation ratio of a transformer.
8. Define efficiency of transformer.
9. Define speed regulation of a D.C. Motor.
10. Classify A.C Motors based on the principle of operation.

**PART-B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each questions carries **ten** marks.  
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** (a) Explain coulomb's law of magnetism.  
(b) Distinguish between magnetic circuit and electric circuit.
- 12.** (a) Explain dynamically and statically induced EMF.  
(b) Explain charging and discharging of capacitor.
- 13.** (a) state coulumb's law and define unit change.  
(b) Write expressions for capacitance of a parallel plate capacitor.  
(c) Give expression for energy stored in capacitor.
- 14.** Explain the effect A.C through inductance with vector diagrams.
- 15.** Explain the RC circuit connected across AC supply.
- 16.** (a) Explain the working principle of transformer.  
(b) Write any six specifications of a transformer.
- 17.** (a) Explain the working principle of DC motor.  
(b) Derive the voltage equation of DC motor.
- 18.** (a) Explain the principal of induction motor  
(b) List the various applications of A.C. Motor.

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