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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

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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