

MODEL PAPER
BOARD DIPLOMA EXAMINATIONS
C-23, EC-106, ELEMENTS OF ELECTRICAL ENGINEERING
FIRST YEAR
END EXAMINATION

TIME:3 HOURS

MAX MARKS:80

Part-A

3×10=30

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

1. Define the terms Absolute and relative permeability of medium. (CO1)
2. State Faraday's laws of electro - magnetic induction. (CO1)
3. State Ohm's law and its limitations. (CO1)
4. State Kirchhoff's current law and Kirchhoff's voltage law (CO1)
5. Define Q factor of a coil. (CO2)
6. Define efficiency and regulation of transformer. (CO3)
7. State voltage transformation ratio. (CO3)
8. Distinguish DC series motor and DC shunt motor. (CO3)
9. List any three advantages of digital instruments over analog instruments. (CO4)
10. List the applications of Lead acid batteries. (CO5)

Part-B

5×10=50

Instructions: (1) Answer **any Five** questions.
(2) Each question carries **ten** marks
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain dynamically and statically induced E.M. F . (CO1)
12. Explain current division rule for a two-branch parallel resistive network. (CO1)
13. Explain active, reactive and apparent power in AC circuit. (CO2)
14. A series RC circuit with $R=100\ \Omega$, $C=56\ \mu\text{F}$ is connected across 230V,50Hz AC supply. Find (i) Impedance (ii) Current (iii) Power factor (iv) Voltage drop across the resistor. (CO2)
15. Explain the construction and working of an auto transformer. (CO3)
16. Explain the principle of operation of stepper motor. (CO3)
17. Explain the working of function generator with block diagram. (CO4)
18. Explain the construction and working of lithium-ion batteries. (CO5)