

6013
BOARD DIPLOMA EXAMINATION
MARCH/APRIL - 2019
 * **DIPLOMA IN APPLIED ELECTRONICS AND INSTRUMENTATION**
BASIC ELECTRICAL ENGINEERING
FIRST YEAR EXAMINATION

Time: 3 Hours

Total Marks: 80

PART - A (3m x 10 = 30m)

Note 1: Answer all questions and each question carries 3 marks

2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences

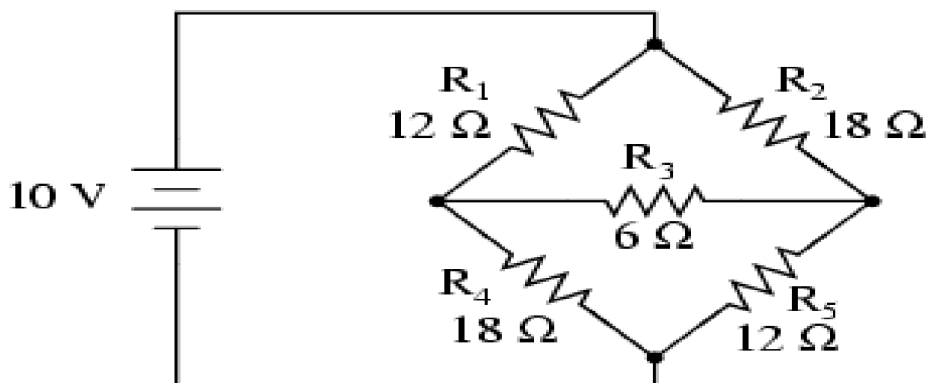
1. Define a) Junction b) Branch c) Loop
2. Define ideal voltage source and ideal current source
3. State the formula of apparent power, active power & reactive power in A.C circuits
4. State the importance of Q-factor
5. State the differences between series and parallel resonance
6. Define thermal efficiency
7. State joule's law of electrical heating
8. Define voltage regulation of transformer
9. State the need of cooling of Transformer
10. Draw the diagram of alternator

PART - B (10m x 5 = 50m)

Note 1: Answer any five questions and each carries 10 marks

2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Using Kirchhoff's laws, find current flowing through 6Ω resistor
Shown below



12. a) State and explain super position theorem
b) Explain how to convert ideal voltage source into ideal current source and vice versa
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13. A Resistor of 50Ω is connected in series with a capacitor of $75\mu\text{F}$ across 150V , 50Hz supply. Find impedance, current, phase angle, Powerfactor and power consumed
14. A coil of 100Ω resistance and 0.5H inductance is connected in parallel with a capacitor of $50\mu\text{F}$ capacitance. Calculate the frequency at which circuit will act as a non inductive resistance of R ohm. Find the value of R
15. Explain the working of Electric geyser with diagram
16. Explain the working of current transformer and potential transformer with diagram
17. Explain the working and construction of core type transformer with diagram
18. Explain the constructional features of Salient pole alternator with diagram

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