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C09-AEI-304

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**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2021
DAEIE - THIRD SEMESTER EXAMINATION
BASIC ELECTRICAL ENGINEERING**

Time : 3 hours]

[Total Marks : 80

PART—A

4×5=20

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

1. Define passive circuit.
2. Define junction and loop.
3. Define phase difference.
4. Derive the relationship between voltage and current in pure resistive circuit.
5. Write the formula for impedance and current in RC series circuit.
6. State torque equation of DC motor.
7. Define efficiency.
8. Classify different losses in dc machine.
9. Write the EMF equation of transformer.
10. List the applications of induction motors.

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PART—B

15×4=60

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

11. Explain super position and maximum transfer theorems.
12. Explain Kirchhoff's current and voltage law.
13. Derive the resonance frequency for series circuit.
14. Derive the relationship between voltage and current in pure capacitive circuit.
15. Explain the construction of DC machine.
16. Explain the necessity of starter for starting the motor.
17. Explain the construction of shell-type transformer.
18. Explain the principle of working of alternator.

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