6013

C16–AEI–106

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BOARD DIPLOMA EXAMINATION, (C–16)
OCT/NOV—2018
DAEI—FIRST YEAR EXAMINATION

BASIC 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. State Kirchhoff 's laws.

2. Define ideal current source.

3. Define Q-factor.

4. Mention the units for Resistance, Inductance and Capacitance.

5. Determine the current flowing through a pure inductor of 150mH when voltage applied is 230V, 50Hz.

6. State heat produced due to flow of electric current.

7. List the practical applications of heat produced due electric current metal.

8. State the relation between voltage, current ratios and turns ratio of a Transformer.

9. State the need for cooling of a transformer.

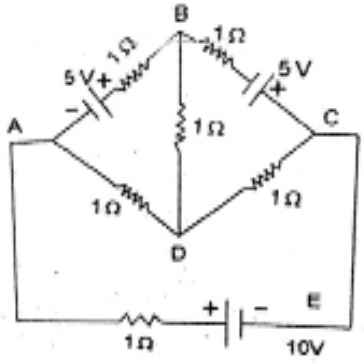
10. Classify D.C Machines based on excitation.

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. Fine the current in each branch of the circuit shows in below figure using loop current Method.



12. A) State Thevenin's theorem.
B) Three resistances of 100Ω,60Ω and 40Ω are connected in Delta. Find out their equivalent star connected resistances.

13. A resistance of 12Ω, an inductance of 0.15H and a capacitance of 100 micro Farods are connected in serise across a 100**U,**50 H2 supply. Calculate

(i) Impedauce (ii) Current (iii) Power factor (iv) Power consumed.

14. A) Compare the serise and parallel resonant circuits in any five aspects.

B) Derive the formula for resonance frequency in serise RLC Circuits.

15. Explain the construction and working principal of Filament lamp with diagram.

16. A) Explain the working principal of Transformer.

B) State the losses in Transformer.

17. Derive the EMF equation of Transformer.

18. A) Explain the Constructional features of Salient pole alternator.

B) State expression for Torque eqution of DC motor.

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