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C14-EE–106

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2021

DEEE - FIRST YEAR EXAMINATION

BASIC ELECTRICLAL 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. Compare between the conductor and semiconductor with respect to valence electrons.

2. State the Ohm's law.

3. Define work and electrical energy.

4. State the Biot-Savart's law.

5. State the Faraday's laws of electromagnetic induction.

6. State the Dynamically induced e.m.f.

7. Draw the pattern electrostatics field due to *(a)* unlike charges side by side and *(b)* like charges side by side.

8. List the factors affecting capacitor materials.

9. Define thermal efficiency.

10. State right-hand thumb rule.

PART—B

15×4=60

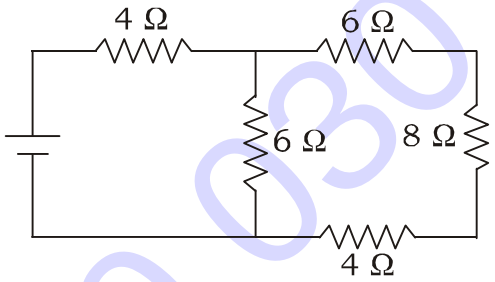
Instructions : (1) Answer *any* **four** questions.

(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. State and explain resistance law.

12. Find the total equivalent resistance of the circuit in the diagram given below :



13. Find the monthly bill of your home for the following appliances :

(a) 4 fans for 10 hours daily [Fan rating : 80 watts]

(b) 8 lamps for 12 hours daily [Lamp rating : 100 watts]

(c) TV for 1 hour daily [TV : 100 watts]

(d) The charges per kWh are Rs 1·50 and meter rent Rs 15/month.

14. Explain the mutual inductance of electromagnetic induction.

15. Explain the energy stored in a capacitor.

16. Explain the construction and working of Geyser.

17. Explain the force between two parallel current carrying conductors in a magnetic field.

18. Explain the energy stored in a magnetic field.

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