



C20-CHPP – 302

7276

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DCHPP – THIRD SEMESTER EXAMINATION

ELECTRICAL TECHNOLOGY

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.

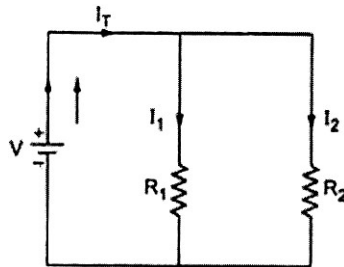
1. Define frequency.
2. State Kirchhoff's voltage law.
3. Define power factor.
4. Define statically induced emf.
5. State any three applications of DC motors.
6. Compare step-up and step-down transformers.
7. State the purpose of energy meter.
8. State the function of circuit breaker.
9. State any three applications of P-N junction diode.
10. Draw the energy band diagrams of insulators.

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

11. (a) Explain star connection in 3-phase circuits.

(OR)

(b) Find the magnitudes of total current, current through R_1 and R_2 if, $R_1 = 30 \Omega$, $R_2 = 20 \Omega$, and $V = 100 \text{ V}$.



12. (a) Derive the expression for field strength due to straight current carrying conductor.

(OR)

(b) Two coils A and B, have self-inductances of $120 \mu\text{H}$ and $220 \mu\text{H}$ respectively. Its mutual inductance is $100 \mu\text{H}$. Find the coefficient of coupling.

13. (a) Explain the principle of working of a transformer.

(OR)

(b) Explain the speed control of DC shunt motor by armature control.

14. (a) Explain the construction and working of moving iron instruments.

(OR)

(b) Explain thermocouple instruments for measuring temperatures.

15. (a) Explain the basic principles of electric heating.

(OR)

(b) Explain the basic principles of electric welding.

PART—C

10×1=10

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

16. What will happen if we give DC supply to a transformer?

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