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C20-CHOT–302

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BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DCHOT - 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. State the laws of resistance.

2. Write the RMS value and average value in terms of maximum value.

3. Define phase difference.

4. Find coefficient of coupling of two mutually coupled coils whose self-inductances are 10 mH, 20 mH and whose mutual induance is 50 mH.

5. List any three applications of three-phase induction motor.

6. Write the torque equation of DC motor.

7. What is the use of energy meter?

8. What is the function of circuit breaker?

9. Write the majority and minority charge carriers of p-type semiconductors.

10. Draw the circuit symbols of PNP and NPN transistors.

PART—B

8×5=40

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)* State and explain Kirchhoff's voltage law.

(OR)

(b) Define the terms *(i)* RMS value, *(ii)* average value, *(iii)* peak factor and *(iv)* form factor.

12. *(a)* Explain dynamically induced EMF.

(OR)

(b) Explain Faraday's laws of electromagnetic induction.

13. *(a)* Explain construction of three-phase induction motor.

(OR)

(b) Explain working of star delta starter with legible sketch.

14. *(a)* Explain construction and working of PMMC instrument.

(OR)

(b) Explain construction and working of moving iron instrument.

15. *(a)* Explain the basic principle of electric heating.

(OR)

(b) Write the precautions to be adopted for prevention of electric shock to a person working on electric equipments or live wire.

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. Explain working principle of transformer with legible sketches.

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