



**C20-MNG-302**

**7263**

**BOARD DIPLOMA EXAMINATION, (C-20)  
OCTOBER/NOVEMBER—2023**

**DMNG – THIRD SEMESTER EXAMINATION  
BASIC ELECTRICAL ENGINEERING**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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 (a) Time period and (b) Frequency.
2. State the dynamically induced EMF.
3. State Kirchoff's Current Law.
4. State the advantages of 3-phase over 1Ph AC system.
5. List the type of DC Motors.
6. State the working principle of Transformer.
7. List the types of electric measuring instruments.
8. Name the parts of dynamo type wattmeter.
9. List the safety precautions of electrical shock.
10. What is the first aid for Electrical burn victim?

**PART—B**

8×5=40

- Instructions :** (1) Answer *any five* 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 self inductance, mutual inductance and coefficient of coupling.

**( OR )**

- (b) State and explain (i) Fleming's right hand rule and (ii) RMS value in AC system.

- 12.** (a) A circuit consists of four resistors 10  $\Omega$ , 20  $\Omega$ , 30  $\Omega$  and 40  $\Omega$  which are connected in parallel. Calculate (i) Equivalent Resistance and (ii) The current in 20  $\Omega$  resistor, when a DC voltage of 250 volt is applied across the circuit.

**( OR )**

- (b) A domestic consumer uses two 40 watt lamps for 3 hours, three 60 watt ceiling fans for 8 hours, four 22 watt tube lights for 6 hours and one 30 watt LED TV for 4 hours, every day. Calculate the monthly energy bill, if the cost per unit of energy is three rupees.

- 13.** (a) Explain the speed control of DC series motors.

**( OR )**

- (b) Explain the construction and working of three phase induction motor.

- 14.** (a) Explain the construction and working of attraction type moving iron measuring instrument.

**( OR )**

- (b) Explain the construction and working of single phase induction type energy meter.

- 15.** (a) Explain the procedures to be adopted to avoid electric shock.

**( OR )**

- (b) Explain the procedure of plate earthing with a diagram.

**PART—C**

10×1=10

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

**16.** Explain the currents and voltages equations for different types of D.C generators.

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