

Code No.

Symbol Number: _____ Invigilator's Sign: _____ Superintendent's Sign: _____

Symbol No. in Words: _____

Faculty: Engineering Level: Bachelor

Year/Part: III/II

Program: BEEE

Level: Bachelor

F.M.: 25

Subject: EG651EE Electric Safety & Hazards

Time: 3 Hours

P.M.: 10

*i Answers should be given by filling the Objective Answer Sheet.**ii Rough can be done in the main answer sheet**iii Maximum time of 20 minutes within the total time is given for this group.***Group A (Multiple Choice Questions)****[5 × 1 = 5]**

1. A key safety measure to prevent electrical shock is

- A) Wearing rubber gloves B) Turning off the circuit breaker before working on electrical equipment
C) Using metal tools near electrical systems D) Overloading circuits to prevent fire

2. Which of the following is NOT a potential electrical hazard?

- A) Exposed wires B) Wet or damp environments C) Proper grounding D) Overloaded circuits

3. The main purpose of earthing (grounding) electrical equipment is

- A) To improve the efficiency of the equipment B) To provide a path for electrical current to flow safely into the ground
C) To reduce electromagnetic interference D) To increase the voltage of the equipment

4. Which of the following is a key benefit of shielding electrical equipment?

- A) To reduce the risk of electrical shock B) To prevent electromagnetic interference (EMI)
C) To increase electrical conductivity D) To improve the heat dissipation of the equipment

5. The primary cause of electrical induction in nearby communication systems from transmission lines is

- A) High voltage in transmission lines B) Grounding issues in the transmission system
C) Overloaded transmission lines D) Poor insulation on transmission lines

Multiple Choice Questions' Answer Sheet

Code No.

Marks Secured: _____

1. (A) (B) (C) (D)

6. (A) (B) (C) (D)

2. (A) (B) (C) (D)

7. (A) (B) (C) (D)

3. (A) (B) (C) (D)

8. (A) (B) (C) (D)

4. (A) (B) (C) (D)

9. (A) (B) (C) (D)

5. (A) (B) (C) (D)

10. (A) (B) (C) (D)

Corrected Fill

(A) (B) (C) (D)

Incorrected Fill

(A) (B) (C) (D)

In Words: _____

Examiner's Sign: _____ Date: _____

Scrutinizer's Marks: _____

In Words: _____

Scrutinizer's Sign: _____ Date: _____

MANMOHAN TECHNICAL UNIVERSITY

Office of the Controller of Examinations

Budiganga- 4, Morang, Koshi Province Nepal

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- ✓ *Group A contains Multiple Choice Questions of 5 marks.*
- ✓ *Candidates are required to give their answers in their own words as far as practicable.*
- ✓ *The figures in the margin indicate Full Marks.*
- ✓ *Assume suitable data if necessary.*

GROUP A (*Multiple-Choice Questions in separate paper*)

[10×1=10]

GROUP B (*Short Answer Questions - Attempt Any Four Question*)

[4×2=8]

1. Discuss the types of circuits that causes electromagnetic radiation
2. Discuss the effect of current magnitude on the severity of electrical shock in human body?
3. List out and state the necessary steps required when somebody get electric shock?
4. Discuss the principle and purpose of Electric field shielding.
5. How Ground fault protection system is achieved in an electrical equipment? Present a simple design.

GROUP C (*Long Answer Questions – Attempt Any Three Questions*)

(4×3=12)

1. Explain the working principle, types, and applications of lightning arrestors. Discuss their importance in protecting electrical systems and equipment from the damaging effects of lightning strikes.
2. Explain the concept of the electromagnetic field near a transmission line. Discuss the factors that influence the strength and distribution of the electromagnetic field, and describe its effects on nearby objects, including health and safety considerations.
3. Discuss the techniques used to reduce earth resistance. How do these techniques improve the safety and performance of electrical installations?
4. Explain the concept of Electromagnetic Interference (EMI) and describe its sources and effects on electronic devices.

THE END