

QP CODE: 24900083



SERIES: A

Reg No:.....

Name:.....

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

FIRST SEMESTER MGU-UGP (HONOURS)

REGULAR EXAMINATION NOVEMBER 2024

First Semester

Multi-Disciplinary Course - MG1MDCECT100

HOME APPLIANCES AND TROUBLESHOOTING

(2024 ADMISSION ONWARDS)

Duration: 1 Hours

Maximum Marks: 35

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Interest (I),
Appreciation (Ap), and Skill (S)**

*Students should attempt atleast one question from each course outcome to enhance their overall
outcome attainability.*

[Learning Domain][CO No(s)]

Part A

Multiple Choice Questions

Answer 35 questions.

Each question carries one mark

- | | | |
|---|--|--------------------------------------|
| 1 | Which unit is used to measure voltage? | [K] [1] |
| | a) Amperes | b) Ohms |
| | c) Volts | d) Watts |
| 2 | In a simple circuit, if the voltage is increased while the resistance remains constant, what happens to the current? | [U] [1] |
| | a) It decreases | b) It remains the same |
| | c) It increases | d) It becomes zero |
| 3 | In a parallel circuit, how does the voltage across each component compare? | [U] [1] |
| | a) It is different for each component | b) It adds up to the total voltage |
| | c) It is zero for all components | d) It is the same for each component |

- 4 What is electric current? [K] [1]
 a) The flow of electrons b) The flow of protons
 c) The flow of neutrons d) The flow of heat
- 5 Which of the following describes a circuit with no break? [K] [1]
 a) Open circuit b) Closed circuit
 c) Short circuit d) Series circuit
- 6 Why is copper commonly used as a conductor in electrical wiring? [U] [1]
 a) It is inexpensive and lightweight b) It has high resistivity
 c) It has low resistivity and high conductivity d) It does not conduct electricity
- 7 What happens to the resistance when the temperature of a metal conductor increases? [U] [1]
 a) Resistance decreases b) Resistance increases
 c) Resistance remains the same d) Resistance becomes zero
- 8 Which of the following formulas calculates power? [K] [1]
 a) $P = V / I$ b) $P = I \times R$
 c) $P = V \times I$ d) $P = R / I$
- 9 If a three-phase motor is connected to a single-phase supply, what is the likely result? [U] [1]
 a) It will operate normally b) It will burn out quickly
 c) It will run inefficiently d) It will not start
- 10 Which testing method uses a high voltage to check insulation integrity? [K] [1]
 a) Megger testing b) Continuity testing
 c) Power factor testing d) Insulation resistance testing
- 11 In a standard three-phase system, what color is usually used for the neutral wire? [K] [1]
 a) Black b) Grey
 c) Blue d) White
- 12 When selecting a wire gauge, what is the primary consideration? [U] [1]
 a) Color of the insulation b) Length of the wire
 c) Current-carrying capacity d) Cost of the wire
- 13 What is the purpose of a junction box? [U] [1]
 a) To connect circuits b) To house fuses
 c) To protect cables d) To store tools
- 14 What does a wiring harness do in a vehicle? [U] [1]

- a) Generates electricity b) Organizes and protects wiring
c) Conducts tests on wires d) Disconnects faulty circuits
- 15 Which of the following is a key advantage of an MCB over a fuse? [U] [1]
- a) Cheaper to replace b) Provides more stable connections
c) It can be reset without replacement d) Less prone to wear and tear
- 16 What does RCCB stand for? [K] [1]
- a) Residual Current Circuit Breaker b) Reactive Circuit Control Breaker
c) Resistive Circuit Breaker d) Residual Circuit Control Breaker
- 17 What type of electrical fault does an ELCB protect against? [K] [1]
- a) Overvoltage b) Earth leakage
c) Short circuit d) Power surge
- 18 Why is grounding important in electrical systems? [U] [1]
- a) It provides an alternate path for electricity b) It increases the efficiency of the system
c) It reduces energy consumption d) It prevents voltage drop
- 19 Why is continuity testing important during component-level inspection? [K] [1]
- a) To ensure there is no short circuit b) To verify proper grounding
c) To ensure electrical connections are intact d) To measure voltage
- 20 When should CPR be initiated? [U] [1]
- a) Only when the person is breathing b) Only if the heart has stopped beating
c) When the person is unresponsive and not breathing d) When the person is conscious but in pain
- 21 What best defines a hand tool? [U] [2]
- a) A tool that is powered by electricity b) A tool that requires manual effort to operate
c) A tool that is used exclusively for woodworking d) A tool that operates using compressed air
- 22 Which tool would an electrician use to remove insulation from electrical wires? [K] [2]
- a) Wire cutter b) Wire stripper

- | | | | |
|----|--|-----|-----|
| 23 | <p>c) Fish tape</p> <p>d) Pliers</p> <p>What are needle-nose pliers typically used for?</p> <p>a) Bending and cutting sheet metal</p> <p>b) Gripping small objects in tight spaces</p> | [U] | [2] |
| 24 | <p>c) Hammering nails</p> <p>d) Unscrewing bolts</p> <p>Which type of tweezer tip would be best for picking up very fine or delicate objects?</p> <p>a) Slanted tip</p> <p>b) Flat tip</p> <p>c) Fine pointed tip</p> <p>d) Round tip</p> | [K] | [2] |
| 25 | <p>What are Allen keys commonly used for?</p> <p>a) Cutting metal sheets</p> <p>b) Tightening or loosening screws with hexagonal sockets</p> <p>c) Driving screws with a cross-shaped slot</p> <p>d) Measuring distances in construction</p> | [U] | [2] |
| 26 | <p>Which of the following is NOT an example of a common hand tool used in electrical work?</p> <p>a) Screwdriver</p> <p>b) Pliers</p> <p>c) Hammer</p> <p>d) Wrench</p> | [K] | [2] |
| 27 | <p>What is the primary function of a jigsaw machine?</p> <p>a) To drill holes in materials</p> <p>b) To make straight and curved cuts in wood, metal, and plastic</p> <p>c) To measure materials</p> <p>d) To measure materials</p> | [U] | [2] |
| 28 | <p>The correct tool for tightening or loosening nuts and bolts in electrical equipment is a _____</p> <p>a) Pliers</p> <p>b) Screwdriver</p> <p>c) Wrench</p> <p>d) Wire cutters</p> | [K] | [2] |
| 29 | <p>Which of the following materials can a scribe be used to mark?</p> <p>a) Only wood</p> <p>b) Metal, wood, and plastic</p> <p>c) Only metal</p> <p>d) Only plastic</p> | [U] | [2] |
| 30 | <p>Which type of punch is used to create a small indentation at the center of a drilling point, making it easier to drill?</p> <p>a) Center punch</p> <p>b) Pin punch</p> <p>c) Taper punch</p> <p>d) Hollow punch</p> | [K] | [2] |
| 31 | <p>What is the typical input impedance of a digital voltmeter?</p> <p>a) 10 kΩ</p> <p>b) 1 MΩ</p> <p>c) 100 Ω</p> <p>d) 1 Ω</p> | [K] | [2] |
| 32 | <p>When measuring current, how should an ammeter be connected?</p> | [U] | [2] |

- | | | | |
|----|---|---|---------|
| | a) In series | b) In parallel | |
| | c) Across the load | d) None of the above | |
| 33 | Why is it important to use the correct range in a multimeter? | | [K] [2] |
| | a) For accuracy | b) To save battery | |
| | c) To avoid damage | d) All of the above | |
| 34 | How does a clamp meter measure current? | | [U] [2] |
| | a) With direct contact with wire | b) Due to magnetic field induction | |
| | c) Due to the thermal properties of the conductor | d) Due to voltage drop across the conductor | |
| 35 | How should the probes of multimeter should be connected when measuring a resistor? | | [K] [2] |
| | a) Across the resistor | b) In series with the resistor | |
| | c) To a power source | d) To the ground | |
| 36 | How do you identify a failed potentiometer? | | [K] [2] |
| | a) No change in resistance | b) Infinite resistance | |
| | c) Steady voltage | d) Short circuit | |
| 37 | What is a characteristic of a faulty capacitor? | | [U] [2] |
| | a) Short circuit | b) Open circuit | |
| | c) Low capacitance | d) High voltage | |
| 38 | What is the common fault in a transformer? | | [K] [2] |
| | a) Shorted windings | b) Open circuit | |
| | c) High resistance | d) Both A and B | |
| 39 | What does a multimeter display when measuring a healthy diode? | | [U] [2] |
| | a) Low resistance in one direction | b) High resistance in both directions | |
| | c) Infinite resistance | d) Zero voltage | |
| 40 | What does an open circuit in both directions between base-emitter and base-collector terminals indicate when testing a BJT? | | [U] [2] |
| | a) The transistor is good | b) The transistor is in cutoff mode | |
| | c) The transistor is in saturation | d) The transistor is faulty (open) | |

END OF THE QUESTION PAPER

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(35 × 1 = 35)

END OF THE QUESTION PAPER
