

UMMUL QURA HIGH SHOOOL

Arowona Bus-Stop Amuloko Akanran Road, Ibadan.

Third-Term Examination

CLASS: SSS 1

SUBJECT: ENT/Elect.

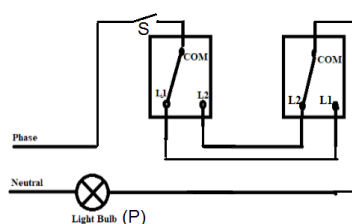
DURATION: 2¹/₄ hours.

Instructions: Answer *all* questions in Section A and *three* in Section B.

SECTION A: OBJECTIVES

- For the purpose of safety, switches must be connected to which of the following conductor?
 - Live only
 - Neutral only
 - Earth only.
 - Live and earth.
- The immediate effect of a poor electrical joint is;
 - low resistance
 - electric shock
 - excessive heat.
 - mechanical damage.
- In preparing cable for installation, strippers are used for;
 - cutting insulation.
 - removing insulation.
 - terminating conductor.
 - joining conductors.
- What type of cable is needed for transmitting pictures via the internet?
 - Fiber optics cable.
 - Sheathed cable.
 - Computer cable.
 - Screen cable.
- The basic types of lamp holders are;
 - straight, cross and pendant.
 - straight, angle and pendant.
 - parallel, angle and straight.
 - parallel, cross and straight.
- The intermediate switch circuit provides a way if controlling a lamp for;
 - one position.
 - two positions.
 - three positions
 - four positions
- The following are typical example of final sub-circuit in domestic wiring *except*;
 - a. point of light.
 - socket outlets.
 - junction box.
 - cooker control unit.
- The following are obsolete system of domestic wiring *except*;
 - cleat
 - batten
 - CTR & TRS
 - surface conduits
- Conduit is when the wiring is;
 - conductive
 - concealed
 - obsolete
 - opened
- The following terms are related to battery *except*;
 - anode
 - cathode
 - electron
 - electroid
- Which of the following cables is most suitable for use in filling station?
 - Flexible cord.
 - MICC.
 - TRS.

- D. VRC.
12. It is important to carry out verification test in order to;
- ensure safety.
 - limit test duration time.
 - conserve equipment battery life.
 - ensure uninterrupted power.
13. The first three tests required for an electrical installation before energized are;
- polarity, insulation and earth floor loop.
 - continuity of protective conductor, ring final circuit and insulation.
 - continuity of protective conductors, polarity and insulation resistance.
 - ring final circuit, insulation resistance and earth fault loop.
14. A domestic electrical appliance is linked to the main supply with a;
- joint box.
 - switch.
 - plug.
 - ceiling rose.
15. Which of the following cable sizes is used in wiring a lighting point?
- 1.0 mm^2
 - 2.5 mm^2
 - 4.0 mm^2
 - 6.0 mm^2



16. The circuit diagram above is a representation of;
- one-way switching.
 - two-way switching.
 - three-way switching.
 - intermediate switching.
17. If the switch S is replaced with a 2-way 2-gang switch to control the bulb, how many core cable is required to complete the switching implementation?
- Single core.
 - Double cores.
 - Three cores.
 - Four cores.
18. The switching implementation shown above is;
- two core cable to implement two-way switching.
 - three core cable to implement two-way switching.
 - two core cable to implement intermediate switching.
 - three core to implement intermediate switching.
19. For conditions of questions 17 and 18, the switch positions should be;
- the same in order to switch on the bulb.
 - the same in order to switch off the bulb.
 - different in order to switch on the bulb.
 - different in order to switch off the bulb.
20. One the advantage of switch implementation in question 17 over that of question 18 is that;
- the bulb P can be controlled at different points.
 - the bulb P may be controlled at the same point.
 - the bulb P may shine brighter.
 - the bulb P may shine dimmer.
21. An electrician discovered that on inspection of a building, the walls were shocking. What type of test should be applied to detect the faults?
- Polarity.
 - Voltage.

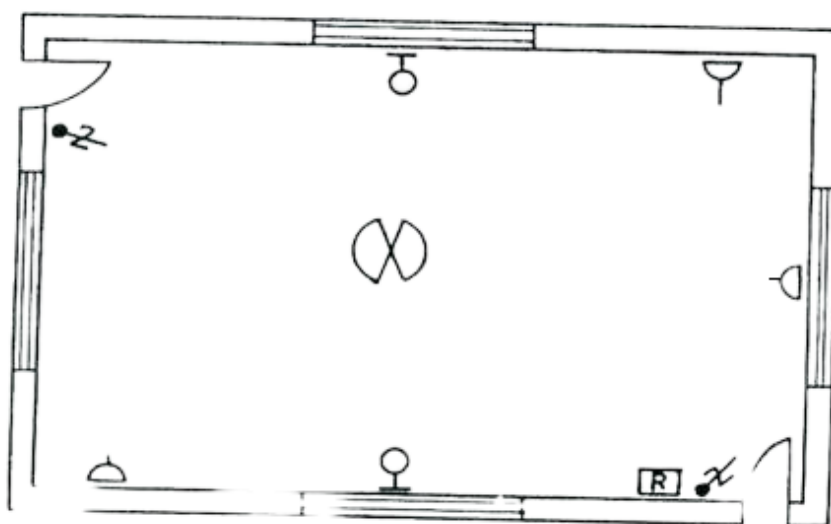
- C. Continuity.
D. Insulation resistance.
22. Which of the following is **not** a property of a cable insulation?
A. High resistivity to the flow of electric current.
B. Low resistivity to the flow of electric current.
C. Resistance to corrosive effect.
D. Withstanding high temperature.
23. A prepaid **Kwh** meter is an example of a/an ---- meter.
A. analogue.
B. computer.
C. digital.
D. semi-condition.
24. A pendant switch is used for control of a/an
A. boiler.
B. breaker.
C. electric cooker.
D. hanging lamp.
25. Which of the following instruments is used for measuring electricity consumption in domestic installation?
A. Ammeter.
B. Multimeter.
C. Voltmeter.
D. Watt-hour meter.
26. Which of the following tools is used for domestic wiring?
A. Blow lamp.
B. Draw vice.
C. Hollow punch.
D. Screw driver.
27. The outermost cover of a cable which gives it mechanical protection is known as the;
A. armoring.
B. conduit.
C. insulation.
D. sheath.
28. Which of the following boxes is a surface wiring accessory?
A. Angle.
B. 4-way.
C. Joint.
D. Tee.
29. Which of these is an operation in a surface wiring work?
A. Conduit bending.
B. Clipping wires.
C. Planning the layout.
D. Preparing the conduit.
30. Which of these is an accessory in wiring system?
A. Ceiling rise.
B. Hammer.
C. Gimlet.
D. Side cutter.
31. A switched socket outlet is designed to make and break the---- conductor.
A. earth.
B. ground.
C. live.
D. negative.
32. A double pole, one-way switch has --- numbers of terminals.
A. 2.
B. 4.
C. 6
D. 8
33. Safety measures in an electrical workshop include the following **except**;
A. appreciate sign and notice.
B. clean workshop.
C. dressing appropriately.
D. working in an air-tight workshop.
34. Which of these is **not** an instrument for measuring electrical quantities?

- A. Ammeter
 - B. Merger.
 - C. Photometer.
 - D. Pedestrian bridge.
35. Which of the following fittings is **not** used in conduit wiring?
- A. Clips.
 - B. Tee-box.
 - C. Terminal stop end.
 - D. Through box.
36. Testing is **not** required on a/an;
- A. additional circuit to the already existing circuit.
 - B. altered circuit.
 - C. existing circuit periodically.
 - D. installation before drawing wire.
37. The lead-acid cell is called a secondary cell because it
- A. uses acid.
 - B. can be recharged.
 - C. is made of lead.
 - D. is not rechargeable.
38. The electrolyte used in a lead-acid cell is
- A. Sal-ammonium solution.
 - B. Hydrochloric acid.
 - C. Dilute sulphuric acid.
 - D. Potassium hydroxide.
39. Cell converts chemical energy to;
- A. mechanical energy.
 - B. solar system
 - C. sounds energy.
 - D. electrical energy.
40. Which of the following is stored in a dry laclanché cell?
- A. Chemical reactions.
 - B. Chemical energy.
 - C. Electrical energy.
 - D. Kinetic energy.

SECTION A: THEORY

PART A: Answer any **three** questions only.

1. (a) List **five** electrical accessories.
(b) State **one** use of each of the accessories mentioned in 1(a).
(c) State **one** use of each of the following types of conduit boxes;
 - a. end-box
 - b. 4-way box
 - c. 3-way box
 - d. 2-way box
 - e. back-entry box[20 marks].
2. (a) Explain the following types of maintenance with two examples each;
 - i. preventive
 - ii. corrective(b) List **four** procedures for preventive maintenance of electrical machines and equipment.
(c) State any **five** safety rules that must be observed in the workshop. [20 marks].
3. (a) List **three** safety wears a technician should put on, at a building site.
(b) List any **two** methods of preventing shock in electrical installations.
(c) Define electrical cell.
(d) State **two** types of electrical cells.
(e) Draw and label a typical simple cell. [20 marks].



4. Study carefully the electrical layout of a living room as shown below. A surface wiring system is to be used for the installation.
 - i. Prepare a key for the layout.
 - ii. List the quantities of the fittings on the layout.

- iii. Sketch a labelled circuit diagram showing how the lamp in the layout can be controlled independently in parallel.
- iv. Mention the instruments required for carrying out insulation resistance test on the installation.
- v. State minimum acceptable value for insulation resistance.

TEST OF PRACTICAL

PART B: Answer any ***one*** questions.

5. With the aid of a well labelled diagram describe the wiring of a ***three*** point of light controlled by;
three 1-gang-2-way switch.
or
one 3-gang-2-way switch.
- (a) Under the following headings describe the;
- a. layout
 - b. wiring
 - c. fittings
 - d. termination
 - e. testing
- (b) List all the materials needed for the installation
- (c) List any ***four*** tools required
- (d) State ***two*** safety precautions. [30 marks]
6. With the aid of a well labelled diagram, describe a blue print for a kitchen with the following information;
- I. cooker unit
 - II. 2-way switch
 - III. 13 **A** socket outlet
 - IV. 15 **A** socket outlet
 - V. incandescent bulbs
 - VI. 4-way MCB consumer unit [30 marks]