

UMMUL-QURA HIGH SCHOOL

Arowona Bus-Stop, Akanran Road, Oyo State, Ibadan.
First-Term Examination, 2020/2021 Session.

SUBJECT: ENT/Elect.

CLASS: SSS 1

TIME: 2:15 minutes

PART I: **OBJECTIVES**

Instructions: Answer **all** questions in this part.

- Which of the following treatments is a first-aid for electric shock?
 - Artificial respiration.
 - Drinking of milk.
 - Drinking of water.
 - Blood transfusion.
- The ***immediate*** effect of poor electric joint is;
 - low resistance.
 - electric shock.
 - excessive heat.
 - mechanical damage.
- The process of keeping tools in good working condition is called.
 - prevention.
 - maintenance.
 - prediction.
 - correction.
- Which of the following is a major source of electricity in Nigeria?
 - Nuclear.
 - Wind.
 - Hydro.
 - Solar.
- Overhead conductors are mostly made of;
 - copper.
 - silver.
 - iron.
 - aluminum.
- Material that offers a low resistance to the flow of current is;
 - insulator.
 - conductor.
 - semi-conductor.
 - cable.
- The device that regulates the level of voltage is;
 - starter.
 - elevator.
 - rectifiers.
 - transformer.
- In order to minimize the danger and maximize the usefulness of electricity, it is essential to carry out;
 - good installation.
 - neat installation.
 - good supervision.
 - testing.
- Which of the following is a good preventive measure against electric shock?
 - Working insulated always.
 - Putting on workshop coat always.

- C. Testing circuit before working always.
 - D. Clearing terminals before and after work.
10. Standing in the incorrect position while lifting a heavy load may result in a;
- A. fall.
 - B. grip.
 - C. strain.
 - D. stress.
11. The following are danger in an electrical workshop **except**;
- A. faulty equipment.
 - B. bar weather.
 - C. faulty tools.
 - D. bad machine.
12. A domestic electrical appliance is linked to the supply with a;
- A. joint box.
 - B. switch.
 - C. plug.
 - D. ceiling rose.
13. Which of the following materials has the highest electrical conductivity?
- A. Iron.
 - B. Aluminum.
 - C. Silver.
 - D. Copper.
14. At constant temperature, the resistance of an electrical wire is directly proportional to its;
- A. length.
 - B. density.
 - C. cross-sectional area.
 - D. mass.
15. Safety measures in an electrical workshop include the following **except**;
- A. appreciate signs and notices.
 - B. clean workshop.
 - C. appreciate dressings.
 - D. maintain air-tight workshop.
16. The following are the causes of accident in an electrical workshop **except**;
- A. broken earth lead.
 - B. exposed socket outlet.
 - C. over fused circuit.
 - D. protected electric heater.
17. Electrical accident on temporary installation may be caused by;
- A. authorized addition of circuit.
 - B. cable with mechanical protection.
 - C. circuit over fused.
 - D. protective covering on switches.
18. To avoid the risk of shock in an industrial installation, exposed metallic parts should be;
- A. earthed.
 - B. electroplated.
 - C. galvanized.
 - D. insulated.
19. Which of the following is **not** a tool for electrical installation works?
- A. Hand drill.

- B. Pliers.
- C. Scissors.
- D. Screwdriver.

20. An immersion heater of 2 **KW** is connected to a 230 **V** supply. Calculate the current flowing in the heater.

- A. 8.2 **A**.
- B. 3.0 **A**.
- C. 8.7 **A**.
- D. 6.89 **A**.

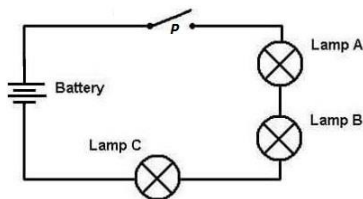
21. Which of the following is suitable for an off-peak tariff billing?

- A. 12 midnight.
- B. 8 am.
- C. 12 noon.
- D. 1 pm.

22. The standard voltage supplying to domestic loads in Nigeria is;

- A. 200 **V**.
- B. 230 **V**.
- C. 240 **V**.
- D. 220 **V**.

Use the diagram below to answer question 23-25.



23. Which of the lamps will shine brightest when P is closed?

- A. A and C.
- B. A.
- C. B.

- D. B and C.

24. The part labeled P is called.

- A. lamp.
- B. inductor.
- C. switch.
- D. resistor.

25. The lamps in the circuit are wired in;

- A. series.
- B. parallel.
- C. star.
- D. delta.

26. The circuit in which a domestic electrical appliance is connected to a supply is called.

- A. sub-circuit.
- B. final-sub-circuit.
- C. sub-main-circuit.
- D. main circuit.

27. The body of an electrical heater is found to be shocking. What type of maintenance is required to put it in order?

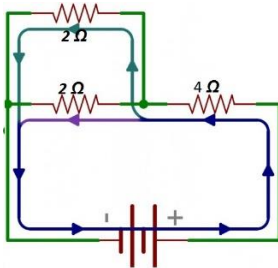
- A. Preventive.
- B. Predictive.
- C. Corrective.
- D. Routine.

28. Which of the following conditions can cause breakdown of electrical machines?

- A. Daily operation with routine maintenance.
- B. Occasional greasing of rotating parts.
- C. Managing worn out parts.

D. Routine check of machine operation.

29. The total resistance of the circuit is;



- A. 4.2Ω .
- B. 6.2Ω .
- C. 5.2Ω .
- D. 7.2Ω .

30. A double pole, one-way switch has how many numbers of terminals?

- A. 2.
- B. 4.
- C. 6.
- D. 8.

31. A switch is designed to make and break the;

- A. earth conductor.
- B. ground conductor.
- C. live conductor.
- D. neutral conductor.

32. The amount of power available for distribution is rated in;

- A. kilowatts.
- B. megawatt.
- C. microwatt.
- D. nanowatt.

33. The following equipment are for consumer's control and protection **except**;

- A. control switch.
- B. distribution board.
- C. gear switch.
- D. gang isolator.

34. The severity of electric shock depends on the following conditions **except**;

- A. circuit voltage.
- B. period of contact.
- C. moisture of the skin.
- D. time of the day.

35. If a wall bracket and a switch cost ~~₦~~350 and ~~₦~~200 respectively.

Calculate the amount required to purchase two wall brackets and four switches.

- A. ~~₦~~1, 500.
- B. ~~₦~~1,100.
- C. ~~₦~~900.
- D. ~~₦~~750.

36. For the purpose of safety, switches **must** be connected to which of the following conductors?

- A. Live only.
- B. Neutral only.
- C. Earth only.
- D. Live and earth only.

37. The correct method of giving someone a sharp tool is by;

- A. throwing it to the person.
- B. giving him the sharp edge.

- C. giving him the handle.
 - D. dropping it on the table.
38. An accident can occur in a workshop when;
- A. right tools are used.
 - B. work rules are obeyed.
 - C. instructional materials are followed.
 - D. manufactural manual is ignored.
39. The reactive Power of an ac circuit are measured in;
- A. **KWh**.
 - B. **KW**.
 - C. **KVAR**.
 - D. **KVA**.
40. The main purpose of testing electrical installations is to;
- A. dismantle equipment.
 - B. maintain equipment.
 - C. detect faults.
 - D. identify conductors.

PART II: **THEORY PART**

Instruction: Answer question **one** and any other **three**.

- 1a. Two separate apartments; kitchen and kitchen store are to be provided with one lighting point each; Draw a circuit to wire them and control both with one-gang-2-way switch; L₁ for kitchen and L₂ for kitchen store. 10 marks.
- 1b. List the materials needed for this wiring. 6 marks.
- 1c. State **two** safety precautions to avoid accident during the wiring. 4 marks.
- 2a. What is power factor? 2 marks.
- 2b. Mention any **four** types of electricity tariff and **two** electricity generating stations. 6 marks.
- 2c. Calculate the units of electrical energy consumed by an electric boiling ring, connected to 240 **V**, 20 **A**. Assuming the heater was connected for a period of 180 *minutes*. 2 marks.
- 3a. What is electricity? 2 marks.
- 3b. Draw an electrical circuit and label any **four** essential components. 6 marks.
- 3c. Differentiate between **ac** and **dc** power supply. 2 marks.
- 4a. Mention **four** primary sources for electricity generation. 2 marks.

4b. Mention any **four** factors which determines the electricity tariff. 4 marks.

In a building with *six* 60 **W** bulbs powered for 12 hours, *three* 1200 **W** electric stoves cooking for 1 hour 15 minutes daily and pressing iron 1000 **W** used for 45 *minutes* on every Monday morning. What is the energy consumed in a week? 2 marks.

If the energy cost 12 *k* per unit, calculate the cost of running the building in 13 weeks. 2 marks.

5a. Briefly explain the following terms;

- i. AR.
- ii. CPR.
- iii. DCP. 3 marks.

5b. A voltage of 240 **V** is applied across an impedance of 10 Ω . What is the current flowing? 4 marks.

5c. List **three** safety wears a technician should put on, at a building site. 3 marks.

6a. What is a turbine? 2 marks.

6b. Describe any type of turbine with a diagram. 6 marks.

6c. What is the advantage of the turbine in 6b over other types? 2 marks.

PART III: **PRACTICAL PART**

Instruction: Answer ***all*** questions.

1. Wire two points of light control by one-gang -two-way switch such that one bulb is off while the other is on. 20 marks.

2. in the space provided below, draw the circuit diagram to describe how you wire the junction box to the lamps then to the switch. 2 marks.

3. List ***three*** safety precautions needed to avoid accident during the wiring.

9 marks.

4. List ***three*** areas where such wiring in question can be implemented.

9 marks.

Student Name: _____