GRADE : III

SERIES : DECEMBER 2025

NATIONAL INDUSTRIAL TRAINING AUTHORITY

ENHANCING SKILLS.

NATIONAL TRADE TEST

ELECTRICAL WIREMAN

THEORY PAPER

TIME: 1 HOUR

INSTRUCTIONS TO CANDIDATES

Read the instructions on the question paper carefully before answering the questions

1. Ensure you are provided with clear labeled answer sheet for your use.
2. Write your Full Name, Test Date, T.T. Number, T.T. Centre Name and Trade respectively at the top of both sides of **ALL** the answer sheets.
3. Answer **ALL** the questions.
4. This paper together with the answer sheet **MUST** be handed back to the assessor at the end of the test.
5. **DO NOT MAKE ANY MARK(S) ON THE QUESTION PAPER**

TRADE : ELECTRICAL WIREMAN

GRADE : III

PAPER : THEORY

TIME : 1 HOUR

Answer ALL the questions

No.	QUESTION DETAILS	MAX. MARKS
1.	State **THREE** major faults in electric circuit.	**(3 marks)**
2.	State the **FOUR** methods of maintaining tools in a workshop	**(4 Marks)**
3.	Define the following terms; i. Current ii. Resistance iii. Insulator	**(6 Marks)**
4.	State **FOUR** main tests to be carried out on a newly completed Installation / major extension/periodically on existing installation	**(4 Marks)**
5.	State **FIVE** factors to consider when choosing a wiring system	**(5 Marks)**
6.	State **THREE** disadvantages of concealed conduit wiring system over surface wiring system.	**(3 Marks)**
7.	Differentiate between excess current and fault current	**(4 Marks)**
8.	State **THREE** properties of copper material as used in electrical cables.	**(3 Marks)**
9.	List **THREE** IEE regulations regarding cable joints	**(3Marks)**
10.	Define the following parts of an earthing system i. Earth Electrode ii. Earth Continuity Conductor iii. Earth Lead	**(6 Marks)**

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PAPER : THEORY ANSWERS

No.	POSSIBLE ANSWER DETAILS	MAX. MARKS
1.	Major faults in electric circuit i. Open Circuit ii. Short Circuit iii. Earth Fault iv. Overloading.	**(Any 3x 1 = 3 Marks)**
2.	Methods of maintaining tools in a workshop i. Greasing the moving parts ii. Oiling iii. Sharpening iv. Proper storage. v. Cleaning	**(Any 4x 1 = 4 Marks)**
3.	Definitions of terms i. Current: - is the rate of flow of electrons in a complete electric circuit ii. Resistance: - is the opposition offered to the flow of electrons in a complete electric circuit. iii. Insulator: - is a material which does not allow free flow of electrons through them	**(2 x 3 = 6 Marks)**
4.	Main tests to be carried out on a newly completed Installation / major extension/periodically on existing installation i. Verification of polarity tests ii. Continuity tests iii. Insulation resistance tests iv. Earth tests	**(4x 1 = 4 Marks)**
5.	Factors to consider when choosing a wiring system are: i. Durability ii. Cost iii. Flexibility iv. Type of building v. Disposition vi. Ambient temperature vii. Safety	**(Any 5x1 = 5Marks)**

No.	POSSIBLE ANSWER DETAILS	MAX. MARKS
6.	Disadvantages of Concealed Conduit Wiring System i) It's expensive when compared to other surface conducting methods ii) It's very hard to find any defects in the wiring iii) Adding additional conduits in future is cumbersome (Needs wall chiseling and finishing) iv) Changing of location of appliances or switches is difficult v) Installation is difficult as compared to other methods vi) Complicated to add/manage additional connection in the future	**(Any4x1= 4 Marks)**
7.	Difference between excess current and fault current Excess Current-Is when the current flowing in a circuit exceeds the rated or normal operating current. Fault Current-Is a sudden, very large current that flows due to a fault in the circuit such as a short circuit or earth fault.	**(2x2=4 Marks)**
8.	Properties of Copper i. Excellent heat conductivity ii. Excellent electrical conductivity iii. Good corrosion resistance iv. Good machinability	**(Any 3 x1 = 3 marks)**
9.	IEE regulations regarding cable joints i. Must be mechanically strong and electrically sound. ii. Must be insulated to same level as cable iii. Must be protected from moisture and corrosion	**(3 x1 = 3 marks)**
10.	Definition the following parts of an Earthing system i. Earth Electrode-Metal plate, water pipe, or other type of conductor buried in the earth in a manner ensuring a good conductive path to the ground ii. Earth Continuity Conductor -The conductor that connects all metallic part of the electrical installation to consumers earthing terminal iii. Earth Lead- The earthing lead is the final conductor to earth electrode. Connected to consumers earthing terminal.	**(3 x2 = 6 Marks)**

$$Marks = \frac{X}{41} X10$$