NC(V) ELECTRICAL INFRASTRUCTURE CONSTRUCTION

ELECTRICAL SYSTEMS AND CONSTRUCTION

NQF Level 3

TEST 2 (WT2)

JUNE 2018

TIME:	**120 Minutes**	**EXAMINER:**	**P ELLIS**
TOTAL:	**70 Marks**	**MODERATOR:**	**B.M.LOTZE**

This assessment consists of 3 pages:

INSTRUCTIONS:

1. Answer ALL the questions.
2. Read the instructions for each question carefully and do only what is required.
3. Number the answers correctly according to the numbering systems used in this assessment or make use of the answer books (Write down your name, surname and ID number on your answer sheet)
4. Please write neatly and legibly.
5. ALL work that you do not want to be marked must be clearly crossed out.

Question 1

1.1 List any THREE important points that an electrician must consider when drawing a circuit diagram. (3)

1.2 Name THREE important aspects that an electrician needs to consider when planning the installation of wire ways. (3)

1.3 What is the purpose of bonding in a domestic electrical installation? (2)

1.4 List TWO areas (places) where flexible conduit is used in a domestic installation. (2)

1.5 You are requested to install two lights in a house with two rooms. Room1 is required to have a single light switch, Room2 is required to have two light switches. Both rooms are fed from a single 10 A circuit breaker in the distribution board.

Draw a fully labelled light circuit also showing the distribution board with its bus bars. (15)

[25]

Question 2

2.1 Name any THREE test instruments that you as electrician will use to test an electrical installation. (3)

2.2 List THREE tests that you will perform with the test instruments that you have listed in Question 2.1. (3)

2.3 Describe in steps how you will perform a test to determine the elevated voltage between the incoming neutral and external earth.. (5)

2.4 Describe in steps how u will use a earth leakage tester to determine whether an earth leakage relay will trip at the specified values. (4)

2.5 Give FOUR reasons why it is important to perform polarity tests at the points of consumption of an electrical installation. (4)

2.6 By using a diagram, explain how you will perform a polarity test on an Edison screw lamp holder. (6)

[25]

Question 3

3.1 A customer reports that a kettle is faulty. List THREE possible faults that could have occurred in the kettle circuit. (3)

3.2 Give THREE factors that you will consider when you are planning the fault finding task of a domestic appliance (do not list the steps). (3)

3.3 A 220V geyser heating element is reported to be faulty and you are requested to perform continuity tests on the heating element.

3.3.1 Describe how you will perform the continuity tests. (2)

3.3.2 Name the test instrument you will use. (1)

3.3.3 List acceptable readings that you expect to see during the tests. (1)

[10]

Question 4

4.1 Give TWO reasons why electrical equipment should be earthed. (2)

4.2 Describe a typical TN-C-S earthing system. (3)

4.3 Name TWO types of earth electrodes used for low voltage-networks. (2)

4.4 Use a diagram to show a typical radial distribution system. (3)

[10]

TOTAL: [70]