

# NC(V) ELECTRICAL INFRASTRUCTURE CONSTRUCTION

## ELECTRICAL SYSTEMS AND CONSTRUCTION

**NQF Level 3**

**TEST 1 (WT1)**

**MARCH 2019**

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**TIME: 60 Minutes**  
**TOTAL: 50 Marks**

**EXAMINER: P ELLIS**  
**MODERATOR: B.M.LOTZE**

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**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 Why is it important to earth electrical installations. (2)
- 1.2 What is meant by the term bonding as applied to electrical installations. (2)
- 1.3 Copy and complete the following table by writing down the recommended **cable size** and the **circuit breaker rating** for the appliances in an electrical installation.

Appliances	Cable size	Circuit Breaker rating
Stove		
Geyser		

(4)

- 1.4 List three important regulations according to SANS 10142 that apply to the switch disconnector of an cooking appliance, like a stove or oven. (3)
- 1.5 According to SANS 10142 what is the **maximum** and **minimum** height that an **internal** distribution board may be mounted. (2)
- 1.6 List two regulations according to SANS10142 to apply when installing a water heater. (2)
- 1.7 What does the abbreviation **CoC** represent. (1)
- 1.8 Indicate which of the following electrical installations will require a compliance certificate. Simply write yes if a CoC is required or no if no CoC is required, next to the number on your answer sheet.
- 1.8.1 Existing installation.
- 1.8.2 New installation.
- 1.8.3 Extension or alteration to an existing installation. (4)
- 1.8.4 Temporary installation

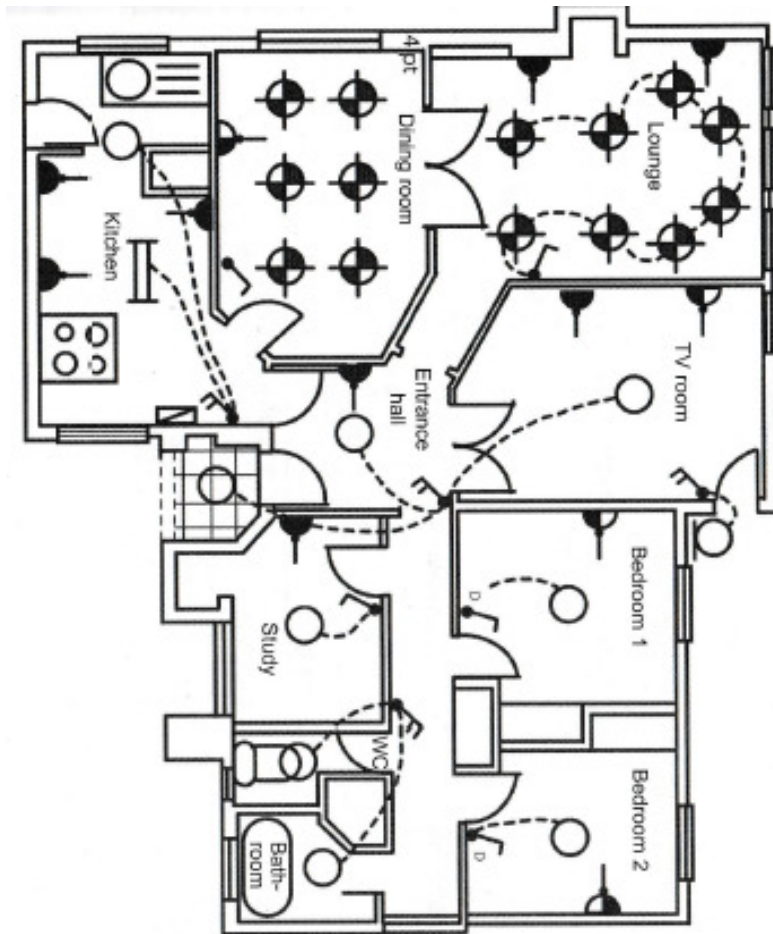
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[20]

## QUESTION 2

- 2.1 Show by means of a wiring diagram how a single day-night switch can be used to control two luminaires. (4)
- 2.2 Consider the house plan below and determine how many of the following components will be needed.
- 2.1 Ceiling lights.
- 2.2 Ceiling mounted recessed down lights.
- 2.3 Florescent lights.
- 2.4 One lever switches.
- 2.5 Two lever switches.
- 2.6 Double outlet sockets

(6)



2.3 Design and draw the **wiring diagram** of a distribution board (DB) with all the sub-circuits on the earth leakage unit. Clearly show the rating of each component used. The following sub-circuits must be used:

- Stove
- Geyser
- Plugs
- Lights

(11)

2.4 List two advantages of PVC conduit compared to metal conduit

(2)

2.5 Explain the difference between the **Point of control** and **Point of consumption** in an installation and give an example in each case.

(4)

2.6 List any three tests to be performed and recorded on the test report when testing an installation.

(3)

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[30]

**TOTAL:** [50]