

## SUBJECT: Electrical Workmanship Level 3

### TEST 2 / June 2018

#### INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Make use of the A 4/3 provided to write on.
4. The question numbers must be clearly indicated.
5. ALL the questions must be done in pen and sketches can be done in pencil.
6. A balanced layout is very important and candidates will be penalised for poor planning.
7. A calculator may be used.
8. Use your own discretion where dimensions are not given.

#### QUESTION 1

Topic 1: Trade practises

- 1.1 Indicate whether the following statements are TRUE or FALSE:
- 1.1.1 Time management involves setting goals to achieve deadlines (1)
  - 1.1.2 Measured parts are materials that can be counted (1)
  - 1.1.3 Bar charts involve setting goals to achieve deadlines (1)
  - 1.1.4 A task list is a list of key tasks used in order to achieve goals (1)
  - 1.1.5 A work permit is used for the ordering of materials (1)
- 1.2 When doing repairs on machinery you must always follow and use the lock out procedure. State THREE other situations where lockout procedure should be used (3)
- TOTAL (8)

## QUESTION 2

### Topic 2: Testing and measuring equipment

- 2.1 What is the main purpose for installing a kilo Watt Hour meter in houses? (2)
  - 2.2 Mention two important things that one will do when he/she is satisfied with the installation of the meter to ensure that all connections and wiring are good and according to acceptable standard (2)
  - 2.3 State FOUR factors that affect the accuracy of meters and instruments (4)
- TOTAL (8)

## QUESTION 3

### Topic3 and 4: Domestic appliances and maintenance

- 3.1 If the electrical motor is removed to replace the motor bearings and to do a motor test, the fitting workshop could simultaneously overhaul the water pump that the electric motor turns and the painters could paint the electrical control panel. It is assumed that all groups mentioned above have a good understanding about safety precautions.
    - 3.1.1 Which THREE general points need to be followed before maintenance can begin (3)
  - 3.2 List THREE possible tests that could be done or carried out and the instruments to be used on an electrical component or equipment (3)
  - 3.3 When power tools fail, there are causes which affect them. In your own words explain FOUR common causes of power tool failure? (4)
- TOTAL (10)
-

## QUESTION 4

### Topic 5: Installation of single phase AC machines

- 4.1 List FOUR aspects you would check on small single phase AC machines and control gears before you hand those over to a company (4)
- 4.2 Describe the way a direct on line starter operates (4)
- 4.3 Name THREE types of single phase AC motors (3)
- 4.4 Name THREE methods used to control the speed of a universal motor (3)
- 4.5 Name THREE reasons for overload protection (3)
- 4.6 What is the device that conducts current between the rotating and stationary parts of a generator or motor? (1)
- 4.7 Explain in THREE steps how electric motors are normally mounted (3)
- 4.8 Which THREE types of couplings are used on electric motors? (3)

TOTAL (24)

TOTAL: [50]