



Province of the  
**EASTERN CAPE**  
 EDUCATION

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## CHIEF MARKER'S REPORT

### INSTRUCTIONS

1. The Chief Markers are required to complete this report during the marking session. The aim of the report is to provide a feed back and to help subject advisors and educators to improve teaching and learning.
2. The report should be informed by discussions between the **Chief Marker, moderator, senior markers and markers** of the particular subject. **NB: There should be one report per subject per paper.**
3. The report must be detailed, informative and indicate question by question performance of the candidates and mark distribution of centres.
4. Reference may be made to the topics identified below as well as any aspect the Examiner wishes to bring to the attention of the subject advisors and educators.
5. **The report must be submitted in hard copy and an electronic version to the centre manager at the marking centre.**
6. All markers reports must be handed in with the hard copy.
7. The electronic report should be emailed to varkchan.joseph@edu.ecprov.gov.za
6. The centre managers then forward the reports to the Directorate of Assessment and Examination (Att: Mr. V A Joseph) in King William's Town.

<b>SUBJECT:</b>	<b>ELECTRICAL TECHNOLOGY</b>
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<b>GRADE:</b>	<b>12</b>	<b>PAPER:</b>	<b>1</b>
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<b>DATE OF EXAMINATION:</b>	<b>26 OCTOBER 09</b>	<b>DURATION:</b>	<b>3 HOURS</b>
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### 1. ANALYSIS OF QUESTION BY QUESTION PERFORMANCE OF THE CANDIDATES

Give a detailed account of how the candidates performed in each question. In doing this, the following steps should be followed:

- 1.1 The aim/objective for setting the question (what skills, knowledge, values and attitudes were being tested by asking the question)
- 1.2 Relevance or relation of the question to the Los and Ass.  
How did the candidates perform in the question?
- 1.3 Where did candidates lack expertise or fail in giving an appropriate answer to score high marks in the question?

**QUESTION 1**

- 1.1 The objective for setting the question was to test how the learners associate Electrical Technology with Society and the Environment.
- 1.2 The question is relevant to LO1 as the learners are required to demonstrate an awareness and understanding of the interrelationship between the Technology, Society and Environment.
- 1.3 In question 1.1 learners were giving the advantages of Technology whereas they were expected to give negative impact of Electrical Technology on the environment. e.g. Air pollution caused by the generation of electricity, coal emission
- 1.4 The performance of the learners in question 1.2 was that they were giving the requirements of entrepreneur instead of the Skills that successful entrepreneurs possess. e.g. Marketing, communication etc.
- 1.5 Learners did not understand question 1.3 hence they were giving HIV treatment instead of principles that will ensure equal treatment for all learners including physical disabled and female learners .e.g. inclusivity ,Physical access etc.

**QUESTION 2**

- 2.1 The aim for setting the question was to check the learners understanding the Technological Problem solving and designing in real life.
- 2.2 The question is relevant to LO2, as Technological Process is a module on its own in the syllabus.
- 2.3 In 2.1.1 learners were not able to identify the problem experienced by residents in terms of electrical technology, they were responding by saying senior citizens can not hear due to old age. What was expected was that there is a poor sound quality of the radio.
- 2.4 In 2.1.2 learners were responding by giving the technological process instead of the Flow Diagram of the chosen solution.
- 2.5 Learners were unable to describe specifications of the solutions e.g. the amplifier should provide an audible sound to meet the needs of the elderly people etc.

**QUESTION 3.**

- 3.1 The aim for setting the question was to test learner's knowledge, values and attitude on Occupational Health and Safety in real life situation.
- 3.2 The question is relevant to L03 and AS1, as the OHS (Occupational Health and Safety) is a module.
- 3.3 The response on this question was very well
- 3.4 There were some few learners who do not read the question properly e.g. their response in 3.3 was referring to the fixed press drill.

**QUESTION 4**

- 4.1 The objectives for the question were to test the learner's knowledge and skills on Three-Phase AC Generation.
- 4.2 The question is relevant to LO3 and AS3.
- 4.3 Response was poor in question 4.2 as the learners were unable to name the type of power factor that a three phase generator has. Learners wrote nothing while the response was supposed to be a lagging power factor because a three phase generator has windings.
- 4.4. The majority of them had problems with calculations and could not differentiate between the line values and phase values

**QUESTION 5**

- 5.1 The objectives for the question were to test the learner's knowledge and understanding of R, L AND C Circuits.
- 5.2 This question deals with LO3 and AS4.
- 5.3 The learners performed above the average hence the question was composed of calculations.
- 5.4 Very few learners had problems with calculations and the phasor diagram of the circuit.

**QUESTION 6**

- 6.1 The objectives for the question were to test the learner's knowledge and understanding of Switching And Control Circuits.
- 6.1 The question deals with LO3 and AS6.
- 6.2. Most learners had problems with the functional operation of a DIAC, the function of the SCR CONTROL CIRCUIT.(6.5 of the question) and the advantages of a TRIAC and SCR when compared with resistive methods of power control.

**QUESTION 7**

- 7.1 The objectives for the question were to test knowledge and understanding on Amplifiers.
- 7.2 The question is relevant to LO3 and AS7.
- 7.3 Most learners had problems with this question for example they could not explain the term positive feedback, natural oscillating frequency.
- 7.3 In question 7.3 they were given the FREQUENCY RESPONSE CURVES, and were unable to state the main changes in the response curves between gain with negative feedback and gain with out negative feed back, what was expected: The following are the changes in response curve with negative feedback as compared to no negative feedback (a) the gain is smaller (b) bandwidth increased etc

**QUESTION 8**

- 8.1 The objectives for the question were to test knowledge and understanding of learners on the principles of Three Phase Transformers.
- 8.2 The question deals with LO3 and AS8
- 8.3 The learner's performance was poor hence the majority of them were having

problems with calculations in THREE-PHASE TRANSFORMER and drawing of three single phase transformers into a THREE-PHASE TRANSFORMER

### **QUESTION 9**

9.1 The objectives for the question were to test knowledge and understanding of learners on the Logic Concepts And PLC's

9.2 The question deals with LO3 and AS10

9.3 Most learners were having problems with the question, for example they had difficulty in naming types of counters used in logic systems, listing possible multivibrators that will form part of sequential logic systems e.g. counters that were expected are : synchronous and asynchronous counters also known as clocked and unclocked counters and for the multivibrators : bistable, astable and monostable.

9.4. In question 9.5. Learners were requested to draw a logic gate diagram instead they were responding by giving the truth table.

9.5. In question 9.6. Learners were requested to write the Boolean equation, the equation using a Karnaugh map and to draw the gate network for the given CONVEYOR BELT SYSTEM and learners were unable to answer.

### **QUESTION 10**

10.1 The objectives for the question were to test knowledge and understanding of learners on THREE-PHASE MOTORS AND CONTROL Circuits.

10.2 The question deals with LO3 and AS12.

10.3 Most learners were having a problem on explanation of the functional operation of the three-phase induction motor, calculations (where learners could not differentiate between the line values and phase values.) and the diagram in 10.2 where the learners were to identify parts on it , but the diagram was not clear.

## **7. ANY ADVICE THAT YOU COULD GIVE TO EDUCATORS TO HELP LEARNERS TO REACH THE EXPECTED LEVELS.**

The educators must stick to the calculations and drawings as these do not need material or equipment.

The educators must network as there are schools that performed very well in the same district.

They must see to it that the learners who are progressing for the next level are those who meet the requirements as it has been reflected that most learners were having content gap from the previous grades e.g. learners who could not understand ohms law and manipulation its formula.

**8. ANY OTHER COMMENTS**

The districts must see to it that all exit levels are writing common tasks on each and every term.

The quality of task must moderated by relevant expertise per term.

The team work should be promoted amongst educators.

Killer topics that should be addressed to educators are Switching And Control Circuits, Amplifiers ,Logic Concepts AND PLC's and Three –Phase Motors AND Control

The schools must encourage learners to use calculators as this has been reflected that they are unable to use them.

For the mere future the sketches should be of colour so that learners can be able to identify the parts.

**SIGNATURE OF EXAMINER: H.S.SOBUWA**

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14 December 2009

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