# CHIEF MARKER'S REPORT

| SUBJECT: | MATHEMATICAL LITERACY P2 |
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1. **ANALYSIS OF QUESTION BY QUESTION PERFORMANCE**

   **QUESTION 1**

This question was of good standard and appropriate for grade 12 learners and for paper 2.
It addresses L01, LO2 and LO3 with L2, L3 and L4 Taxonomy levels.
The language is appropriate and accessible to the majority of learners.

1.1.1   The learners battled to calculate the radius of the table cloth from the radius of the place mats and are still using 22/7 for the value of π instead of the given value 3,14.
The learners failed to calculate the number of beads  for they could not divide the circumference of the table cloths by 4,71 instead they multiplied
This show lack of skills  to apply basic algebraic operations

1.2.1  (a) Most learners got this  question correctly
(b) Many learners did not calculate the difference of 500 and 510 and thus could not get full marks. Some were unable to use (BODMAS) correctly.

1.2.2  Although this question was fairly answered many learners are still unable to plot points on graphs / grids.

1.2.3 (a) Most learners understand the concept of a break-even point although many have difficulty in expressing  themselves due to language barriers,
(b) Few learners could read these values from the graph which shows a need to do more exercises of plotting graphs from basics, and in different contexts.

1.2.4  Most learners lost marks because they could not understand that they needed
to choose the package with more call time as the cost is fixed at R550. This question was of good standard for paper 2.

It is noted that learners lack basic mathematical skills and do not read the questions thoroughly.
Learners should note that they have more than enough time to answer MLIT P2 questions [3hrs]
The marking guidelines were clear and CA marks were awarded i.e. positive marking.

## QUESTION 2

This question was of appropriate standard for grade 12. The language used was clear and understandable. LO1, LO2, LO3 and LO4 at L1, L2 , L3 Taxonomy Levels – The question integrates well with a number of learning areas.
e.g. Geography and Physical Sciences.

2.1.1. Most IF NOT ALL learners answered this question correctly.
2.1.2. This was not answered well by learners, as expected. This indicates lack of understanding of the Co-ordinate Systems by learners and the under utilisation of maths set by school kids.
2.1.3. Very few learners received full marks in this question, as others could not give names of roads for the shortest route to be followed by the bus. They could not measure distance and they could not do conversions.
2.1.4. The question was very good for grade 12 and required equation. Manipulation skill to solve real life situation problems.
   • Many learners did not get this question correct as they failed to rearrange the equation. i.e. make subject of the formula for time, distance, or speed
   • Many fail to covert mm into km as per given scale 1:20 000
     This means more should be done in the class, in rearranging equations and converting of units.
2.2.1. This question was fairly attempted by all learners; most learners completed ANNEXURE C correctly. This shows that more is being done in class, in teaching probabilities and statistics.
2.2.2. This question was answered very well although most learners failed to write the answers in decimal form.
   Learners must be taught to read each question and give answers according to instructions.

The marking guidelines catered for many alternative responses, i.e. learners could calculate time, OR speed, Or distance and compare to a conclusion. There was no penalty for rounding off.

## QUESTION 3

The question covered LO1, LO2 and LO4 at level 2 , level 3 and level 4 (Bloom's Taxonomy). The question was of acceptable standard for grade 12.
The language was fair and understandable to most learners.
Many learners attempted this question although they had problems in sequencing multiple step problems for questions with lots of marks. E.g. 2.1.3.(a),  3.2.1., 3.1.3.(a) [10] marks and 3.2.1 [8] marks.

The Marking Guidelines catered for all possible learners' responses, and CA Marks were awarded for each sub-question. No penalty for rounding off.

NB Learners must answer questions according to instructions; this means they must read instructions.

3.1.1. This question was well answered by learners. Others failed to multiply by 2 for children's contribution to the medical aid. They also failed to calculate ⅓ of the total medical aid deductions and they lost 2 marks.

3.1.2.(a) Calculations for ANNEXURE D were filled/ completed satisfactory by learners and most learners received the 5 marks.

3.1.2.(b) Most learners managed to do the calculation of the Net salary as well as the annual Net salary or CA Marks were awarded.

3.1.3.(a) Many learners failed to realize that with 4,5% salary increase, they had to use the second row of Table 1 to calculate Mr Riet Medical aid Membership subscription cost, and yet again failed to calculate ⅓ of the total Medical Aid Subscription. Most learners lost marks in this questions and they were awarded zero for using values from 3.1.2.(a). Calculation for these questions was fairly done by learners. Since CA Marks were awarded, although they could not get the right conclusions, since they used wrong values from preceding questions.

3.1.3.(b) Learners still have problems in calculating the percentage change using new and old salary values. This question was well attempted by learners.

3.2.1. Most learners were able to calculate 17% 0f R834.3 billion and 18% of R900,9 billion i.e. first work out E=18% from the pie chart diagram for 2010/2011

- Learners have difficulty in writing many digit numbers, they do not know where to put the comma and hence have difficulty in writing very big numbers, thus could not round off correctly.
- They could not write the zeros instead of the word billion. E.g. R162,162 billion as R162 162 000 000.

3.2.2. Most learners answered this question fairly well and received 4 marks, full marks or 2 marks for this question. More options (a variety) were given in the Marking Guidelines.

Learners seemed to get exhausted in answering this question, with two annexure and many calculations to do for one question. The question was poorly to fairly attempted by learners. This means more should be done in class, to do calculations on financial tables.

## QUESTION 4

This question was very poorly attempted or answered by the learners. Most learners received zero in this question. Learners must be drilled to calculate surface area, volume of different kinds of tubes, cylinders etc. Learners should be taught how to relate radius to diameter and how to calculate circumference and area of a circle. The question had a lot of conversion to be made and as such, learners struggled with these tedious conversions

4.1. Learners use wrong methods to calculate the height of the bottle, they should divide 143mm by 102%. Most learners did not answer this question correctly.

4.2. Learners had problems in assimilating the question because of language difficulty. The question could have been made understandable if learners were asked to show the difference in area of the cardboard box and the bottle. The question involved so many steps, which needed lots of conversion and substitutions resulting into learners making many mistakes.

4.3.1. This question was difficult for grade 12 learners, even for some teachers, this means the level was quite high.

Learners struggled to do conversion from mm² to m² and work out the number of grams per area.

Most learners did not answer this question.

4.3.2. This question was not answered by most learners as it continued from 4.3.1. learners had difficulty in converting from grams to kilograms and hence using the formula to calculate the total cost in Rand.

The whole of question four was cumbersome and tedious for our poor grade 12 Mathematical Literacy kids.

Although the Marking Guidelines fairly provided for CA marks, more should be done in class for converting units and rearranging relationships.

### QUESTION 5

The question is of good standard for NCS Grade 12. It further tests learners' skills to compare, contrast, plot graphs and do calculations i.e. applications of algebraic operations (BODMAS), calculating percentages and do calculations using exponential notation.

The language is appropriate for Mathematical Literacy Grade 12 and makes use of words like, **Consumer price Index and Inflation.**

Most learners could not understand the meaning of the word **consecutive** months and hence unable to make correct comparison and verify trends of the fruit baskets.

The Marking Guidelines catered for many alternative responses, and there were no penalties for rounding off, also CA Marks were awarded and relatively learners performed fairly well in this question.

5.1.1. (a) Most learners did well in this question.
5.1.1. (b) Learners with language bareirs did not do well in this question, for they could not compare the CPI taking two months at time. (Not understanding words like previous, preceding, consecutive etc.)
5.1.1. (c) Most learners did well in this question.
5.2.1. This section was not answered well as the method used by learners was not correct, for they subtracted 5.8% of R1586.95 from R1586.95 instead of dividing R1586.95 by 105.8%.

5.2.2. Learners did fairly well in this section.
5.3.1. The drawing/ plotting of the graph was done by most learners correctly. Although many of them failed to join the plotted points with straight lines.
5.3.2.(a) This question was poorly done by learners, as they were unable to do comparison i.e. not aware that we compare two entities at a time, i.e. they were confused of how to show similar trends (same trends) of months on months changes in prices for both graphs.

5.3.3.(b) Most learners gave own opinions although many had problems in expressing themselves in clear language.

### RECOMMENDATIONS/REMARKS

#### REMARKS
- The question paper as whole is of good standard and adheres to NCS Guidelines. (Examiner Guidelines)
- The language use is appropriate and fairly accessible to all mathematical literacy learners.
- Educators should insist learners to read instructions, read every question thoroughly and answer each question according to instructions.
- Learners should take note of key/leading words in each question.
- In mathematical literacy, it is common to have annexure graphs/tables for one or more questions, learners must be made aware of this fact and practices them to attach these on the answer book.

  o  Seemingly teachers and learners are struggling in solving multiple step problems as this is evident in questions three and four. (LO4 in particular)
  o  Plotting and locating/reading points and directions on a graph paper, grid or map, is still posing problems for learners. (LO2)

#### RECOMMENDATIONS
- The question of language can not be over emphasized as each subject has its language.
- An answer sheet for exams must be designed for mathematical literacy papers.
- Training for both teachers and learners in solving multiple step problems in particular for LO4 and financial mathematics should be done.
- Learners must be trained to use calculators, maths sets, and graph/grids in their homework and class works.
- Educators should be trained of how to award marks and how to interpret the memo and hence the learners would know how to get marks in the exams.
- Conducting similar training exercise like the one done at marking centre at district/cluster level could focus on learner attainment i.e. assist learners in obtaining marks in the exams.
- Marks could be raised by 5% because of question 3 and 4.

building blocks for growth.

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