



**ASSESSMENT & EXAMINATIONS**

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## **NSC 2011 CHIEF MARKER'S REPORT**

<b>SUBJECT</b>	<b>MECHANICAL TECHNOLOGY</b>
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<b>PAPER</b>	<b>1</b>
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<b>DATE OF EXAMINATION:</b>	<b>2011 /11 /09</b>	<b>DURATION:</b>	<b>3 HRS</b>
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### **SECTION 1:**

**(General overview of Learner Performance in the question paper as a whole)**

The question paper was up to standard but the majority of learners did not perform well.

The achievement fluctuated between 78% and 5% from the centres in the whole Province.

Some learners omitted other questions such as question 2 on Tools and Equipment and question 3 on Materials due to lack of content knowledge.

Learners could not interpret question 5.1 (on lubrication). Learners came up with functions instead of actual properties of oil.

The indexing and SI units prevailed as a challenge hence they did not score well in this portion.

### **SECTION 2:**

**Comment on candidates' performance in individual questions**

**(It is expected that a comment will be provided for each question on a separate sheet).**

#### **QUESTION 1**

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

Certain schools got very low marks in the paper where others were average. No schools got outstanding marks.

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

For Q1: There is lack of general content knowledge.

Due to teacher specialization in this subject, not all the content is covered comprehensively.

(a) Provide suggestions for improvement in relation to Teaching and Learning
Content gap on the educator behalf which can be remedied by content training.
There is an ongoing practical workshop for educators in the mechanical field on Content-gap but is mainly for educators in the re-capitalization schools. It would be advisable to include the rest of the mechanical educators. This will improve teaching and learning as educators will come back to rollout the practical knowledge of what they have acquired from their training to learners.
(d) Describe any other specific observations relating to responses of learners
Learners were guessing in their responses in the multiple-choice questions resulting to low Scoring marks since the options were very similar.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Subject advisors need to constantly visit schools to support the educators where they lack the subject content. Educators should not feel reluctant to inform subject advisors in areas that they feel they need support.
<b>QUESTION 2</b>
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
Q2: 2.1.1& .2 was Poorly structured and confusing because the learners did not know if the procedure or the operation of test was required.
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
The total of this question was out of 20 marks, of which 11 marks was from Q2.1.2 which was the one confusing learners. Learners had already lost more than 50% of the marks in that question.
(c) Provide suggestions for improvement in relation to Teaching and Learning
Educators to expose the learners to those type of engineering tools and also use previous years question papers to prepare the learners for more clear understanding, in their daily class activities and assessment with learners. Educators should give more class activities on each topic taught and not only once off for Cass requirement purposes. Regular class activities on each and every topic taught in class, will enhance learner performance.
(d) Describe any other specific observations relating to responses of learners
Learners could not interpret the question correctly in Q2.1.2 because was not clear as to whether the question requires procedures or interpretation of results. Therefore some of the learners did not attempt the question. Those that attempted it, did not answer it well.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators from the disadvantaged schools to organise site visits for the learners to interact practically with these tools and equipment.
<b>QUESTION 3</b>
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
For Q3: It was poorly performed as not enough time is spent on the theory.
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
For a first time reader the diagram in the scenario for 3.2 was vague for the learners because the type of the material was not given.

(c) Provide suggestions for improvement in relation to Teaching and Learning
Educator to prepare learners for scenario type of questions so that learners are able to connect practical situations with theory.
(d) Describe any other specific observations relating to responses of learners
Learners were guessing the material types. Learners could not link up the diagram with the theoretical knowledge.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators to physical expose the learners to different types of materials when teaching and assessing the material topic. For examples collecting samples of different materials for demonstration purposes.
<b>QUESTION 4</b>
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
Q4: Some learners have done well however Indexing calculations was not well answered.
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
Learners did not have an idea of a hydraulic press and they ended up confusing it with a drill press or a lathe machine. Lack of machinery.
The question 4.5.1 was not clear as it did not ask for the type gear, it asked for the name of the gear
(c) Provide suggestions for improvement in relation to Teaching and Learning
More machine models should be supplied to schools so as to assist in learner understanding and interpretation.
Educators to research other methods to obtain more information on simple and compound gear trains.
(d) Describe any other specific observations relating to responses of learners
This question was fair good for the learners. Many scored above average but in some isolated cases (for example question 4.4) learners are not able to work-out the calculations completely up to the stage where they choose the correct set of gears in the given indexing table.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Practical sample displays of weld defects to illustrate the faults visually. Practical demonstrations of the non-destructive tests to help learner understanding.
<b>QUESTION 5</b>
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
This question was poorly answered by the learners. Learner we confused in Question 5.1.6 because of a non applicable item C(soluble oil)
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
In question 5.1.1 learners confused properties with functions of lubrication.
In question 5.2 the learners were not able to distinguish between turbines and blowers.
Judging by the learner performance not all the schools completed the syllabus.
In question 5.1.6 one item in column B was not applicable to the statements in column A.
This confused the learner. As a result most learners scored poorly.

(c) Provide suggestions for improvement in relation to Teaching and Learning
Visual tapes on turbines and superchargers to be organized and used to demonstrate the operations of these units.
When tabulating items there should be more options in column B to choose from than the terms in column A.
(d) Describe any other specific observations relating to responses of learners
In question 5.1.6 the learners tried to match the terms in column A equally with the items in column B on the one-to-one ratio as there were equal number of items and terms.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators need to clearly differentiate to the learners the difference between the properties and functions of lubricating oils.
The last topic on turbines should be comprehensively covered by educators with more Practical examples.
<b>QUESTION 6</b>
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
There seems to be an improvement in this question however evident language barrier prevents the learners from answering correctly. Teachers seem to be spending more time in this section (applied mechanics). In doing so educators overlook theoretical sections. Certain schools are still far behind in applied mechanics calculations
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
The SI units were poorly applied by the learners. In question 6.1.3 learners did not multiply The number of strokes to get the final answer.
In question 6.2.1 most of the learners did not manage to do this question correctly.
In 6.2.1 most learners used the incorrect formula for this calculation.
(c) Provide suggestions for improvement in relation to Teaching and Learning
Educators need to spent more practicing different examples so that learners become familiar with difference ways of questioning.
(d) Describe any other specific observations relating to responses of learners
We observed that in question 6.1.3 the numbers of strokes confused the learners.
In question 6.2.1 the were not sure what was required from them.
In question 6.3.1 the term 'rotational frequency' confused the learners as they did not know what required. Most learners are more familiar with the term 'revs per minute' (rpm)
e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators should do more exam preparation using previous question papers exposing the learners to different types of questions

**QUESTION 7**

(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?

(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

(c) Provide suggestions for improvement in relation to Teaching and Learning

(d) Describe any other specific observations relating to responses of learners

e) Any other comments useful to teachers, subject advisors, teacher development etc.

**SIGNATURE OF CHIEF MARKER:** \_\_\_\_\_



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