basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

QUALITATIVE ANALYSIS OF LEARNER RESPONSES
AND
EVALUATION OF THE QUESTION PAPERS (PER PAPER)
NATIONAL SENIOR CERTIFICATE 2025
WESTERN CAPE EDUCATION DEPARTMENT

SUBJECT	**MECHANICAL TECHNOLOGY (AUTOMOTIVE)**		
QUESTION PAPER	**1**	**2**	**3**
DURATION OF PAPER	**3 HOURS**		
INTERNAL MODERATOR	**MR MS BEYERS**		
CHIEF MARKER	**MR SP GOBO**		
DATES OF MARKING	**FROM: 29 NOVEMBER 2025**	**TO: 10 DECEMBER 2025**	
HEAD OF EXAMINATION	**Ms LM BREDENKAMP**		

REPORT 2: QUALITATIVE ANALYSIS OF LEARNER RESPONSES

SECTION 1: ***(GENERAL OVERVIEW OF LEARNER PERFORMANCE IN THE QUESTION PAPER AS A WHOLE)***

The extremely low performance across most of the curriculum, shows significant challenges in mastering the subject. The median percentage score for the entire paper median scores per question reveal widespread struggle, particularly in applied and specialised topics such as Systems & Control, Engines, Tools & Equipment, Maintenance and Materials. There is an overall weakness, particularly in content requiring advanced application, troubleshooting, and in-depth understanding of the afore-mentioned topics, which collectively represent almost 70% of the curriculum.

SECTION 2: *COMMENT ON CANDIDATES' PERFORMANCE IN INDIVIDUAL QUESTIONS*

(It is expected that a comment will be provided for each question)

QUESTION 1
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
This is a multiple question that is generally answered well.
(b) Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
No
(c) Provide suggestions for improvement in relation to Teaching and Learning.
This question requires understanding, knowledge and some language proficiency.
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.
None

QUESTION 2
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
A median score of 35.0% indicates that half of the learners achieved low marks. This indicates that candidates struggled with the required knowledge of safety measures. There is a weakness in retaining or applying foundational, generic safety information, most of which was introduced in grade 11 and before.
(b) Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
Candidates were unable to recall foundational and specific safety knowledge, which is a key component of the generic curriculum. This section required simple factual recall (Remembering/Knowledge level), indicating that learners struggled with rote memorisation or exposure to specific safety protocols.
(c) Provide suggestions for improvement in relation to Teaching and Learning.
Candidates should be taught to interpret questions correctly. Safety protocols must be emphasised during practical lessons.
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.
Use past question papers to guide and familiarise candidates with answering.

QUESTION 3
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
This median score was 1 mark out of a maximum of 14 marks. This indicates that the content related to materials science, including heat treatment, quenching media, and metal testing, was largely unmastered by the candidates
(b) Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
Candidates are not familiar with the terminology used and commonly misinterpret the questions. e.g. candidates answer about specific heat treatment when a general answer is required.
(c) Provide suggestions for improvement in relation to Teaching and Learning.
Teachers should use the specific terminology relating to materials often when teaching so as to facilitate learning of the terminology.
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.
Teachers need to master this chapter first to have the capacity to explain concepts in a simplified manner.

QUESTION 4
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
This is a multiple question that is generally answered well.
(b) Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
NA
(c) Provide suggestions for improvement in relation to Teaching and Learning.
This question requires understanding, knowledge and some language proficiency.
(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.
None

QUESTION 5
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
The median score achieved was 6.5 marks out of 23, resulting in a low median percentage of 28.3%. This poor performance indicates significant challenges in mastering the specialised practical and procedural knowledge required, such as identifying diagnostic equipment components, explaining procedures for compression tests, setting up gas analysers, and conducting pre-checks for wheel balancing.

(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
Candidates often supplied insufficient information to obtain full marks for answers that required multiple aspects for full marks.	
(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Candidates should be taught to interpret questions correctly and fully. Language proficiency and learning terminology needs prioritisation.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
Teachers at centres that fared poorly need further training by trainers who can prepare them in accordance with the NSC PAT in all the tools and equipment.	

QUESTION 6	
(a)	***General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?***
The median score of only 6 marks out of 28, indicates that the majority of candidates struggled significantly with core automotive topics such as engine components (crankshafts, vibration dampers), various engine layouts (inline/boxer), firing orders, power strokes, and turbocharger systems	
(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
Candidates are unfamiliar with basic functioning and terminology of engines that was introduced since gr 8. Much of the terminology is also used in the NSC PAT.	
(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Teachers should the terminology relating to engines often when teaching so as to facilitate learning of the terminology. Candidates should be required to use the same terminology in their responses.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
Using YouTube videos in mastering this topic is very effective.	

QUESTION 7	
(a)	***General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?***
A median score of 40,6% indicates that the majority of candidates struggled with the advanced application, unit conversion, and multi-step calculations required.	
(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
It was poorly answered as candidates struggled with the advanced application, unit conversion, and multi-step calculations required	

(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Mastering of this chapter should be emphasised in gr 11 and gr 12 with learners practicing multiple examples of these types of calculations.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
This range of 96,9% suggests a significant disparity in the quality or depth of instruction and learner retention concerning applied mathematics within Mechanical Technology. Interventions may be needed to bridge the gap between those who can perform complex application and those who cannot apply the fundamental conversion and mechanical principles.	

QUESTION 8	
(a)	***General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?***
The median score was 6 marks out of 23. This indicates that the majority of candidates struggled significantly with the required technical knowledge related to maintenance procedures, such as identifying gases analysed by an exhaust gas analyser, fault finding tables for cylinder leakage tests, oil pressure test specifications, and corrective measures for fuel pressure and coolant leaks	
(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
Candidates often supplied insufficient information to obtain full marks for questions that required multiple aspects in the answers.	
(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Candidates should be taught to interpret questions correctly citing past question papers and marking guidelines. Language proficiency and learning terminology needs prioritisation.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
Teachers needs further training by trainers who can prepare them in accordance with the NSC PAT in all the tools and equipment.	

QUESTION 9	
(a)	***General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?***
It was answered extremely poorly by the learners. The median score was of 1 out of 18, resulting in the lowest median percentage score for the entire paper. This performance indicates that the topics covered, such as the components, functions of the torque converter, and the operation of the epicyclic gear system, were virtually unmastered by most candidates.	
(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
Candidates often supplied insufficient to no information to obtain full marks for questions that required multiple aspects for 2 marks.	

(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Candidates should be taught to interpret questions correctly citing past question papers and marking guidelines. Language proficiency and learning terminology needs prioritisation.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
Teachers at centres that fared poorly need further training. Provide schools with miniature models of epicyclic gear trains to facilitate teaching and learning.	

QUESTION 10	
(a)	***General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?***
It was poorly answered by the learners. The extremely low median percentage of 3.1% indicates that the vast majority of candidates struggled significantly with topics like pre-checks on suspension, drawing toe-out diagrams, explaining steering geometry purposes, static wheel balancing procedures, and understanding the functions of electronic control systems (ECU, CRDI components, and diodes)	
(b)	***Why was the question answered poorly? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.***
Candidates struggled significantly with topics like pre-checks on suspension, drawing toe-out diagrams, explaining steering geometry purposes, static wheel balancing procedures, and understanding the functions of electronic control systems (ECU, CRDI components, and diodes)	
(c)	***Provide suggestions for improvement in relation to Teaching and Learning.***
Integrate practical demonstrations for procedures and checks. Emphasize technical drawing and visual literacy. Deepen conceptual understanding of modern electronic systems. Focus instruction on specific terminology.	
(d)	***Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.***
None	