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.

SUBJECT:	**CIVIL TECHNOLOGY**

GRADE:	**12**	**PAPER:**	**1**

DATE OF EXAMINATION:	**6 NOV. 2009**	**DURATION:**	**3 Hrs.**

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

Knowledge of construction processes was tested in this question with emphasis on (1) General construction, (2) safety and (3) using of hand tools.
LO: 1: Ass: 1.1
LO: 2: Ass: 2.3
LO: 3: Ass: 3.3, 3.7
LO: 4: Ass: 4.10

1.2.1 No learner in the Eastern Cape could identify part A and B of the steel connection
1.2.2 Only two learners in the Eastern Cape could draw the correct gusset plate (centre 4231002) The content of this question was not taught because it is not in the text book used.
1.3 A number of learners did not understand the question correctly and name general safety measures applicable to electricity instead of the safety measures applicable to the scenario.
("hit the person with a stick" will not save his life.)
1.4 This question was adequately answered.
1.5 A number of learners did not understand the question correctly and name general safety measures and scaffolding safety instead of the safety measures applicable to ladders in the scenario.

QUESTION 2

Knowledge of advance construction processes was tested in this question with emphasis on (1) formwork, (2) concrete work, (3) steel work and (4) safety.
LO: 3: Ass: 3.1, 3.5, 3.7

2.1.1 This question was adequately answered indicate good knowledge of formwork requirements.
2.1.2. Different parts of formwork – adequately answered.
2.2 Only centre 4231002 have a good knowledge of the rib-and-block construction. The content is not in the text book used and therefore was not taught.
2.3 The learners guessed this answers – applicable to rib-and-block construction.
2.4 Colour codes (safety). Adequately answered
2.5 Question lead to a wide range of correct answers. "… strip foundation trench" would have prevented the variations.
2.6 "Steel is used widely in the erecting of warehouses and large buildings. Draw neat free-hand sketches of the cross section through any THREE metal sections that are used in the steel construction of buildings."

Although the main fact is METAL SECTION, a large number of learners had drawn cross sections of steel structures.

The answers in this question reflect a content gap, most probably also on the teachers side.

QUESTION 3.

Knowledge and application of civil services was tested in this question with emphasis on (1) drainage systems, (2) solar geysers and (3) electricity.
LO: 3: Ass: 3.8
LO: 4: Ass: 4.5

3.1.1 Adequately answered by top achieving centre – good knowledge of sanitary fittings.
3.1.2 Poor knowledge of setting out of drainage system. Only the candidates from top achieving centres were able to adequately answer this question.
3.1.3 Well answered. Lower order cognitive question.
3.1.4 Adequately answered by top achieving centres.
3.2 Requirements for a drainage system under a building is a middle order cognitive question which should be adequately answered, but a number of centres had no idea of the requirements.
3.3 Poor knowledge of bacterial action in septic tank.
3.4 Poor knowledge of vacuum breaker's purpose.
3.5 Poorly answered. The following answers indicate a lack on understanding/logic/knowledge of generating electricity: Engine, battery, ESCOM, Yamaha, etc.
"Solar" and "sun" electricity have the same source.
Learners got confused between "generating electricity" and "source of electricity".

QUESTION 4

The skill to determine quantities and knowledge of materials was tested in this question with emphasis on (1) wood, (2) cement/concrete, (3) glass and (4) plastic.
LO: 3: Ass: 3.7, 3.9
LO: 4: Ass: 4.9

4.1 The candidates of a number of centres have no knowledge of wood grading.
4.2 As above – poorly answered.
4.3 Storage of cement – adequately answered.
4.4 Adequately answered. Although the correct method of applying the calculations in the quantity list was not always used, the correct answers was obtained.
4.5 Adequately answered – Clear glass and fibreglass is not a type of glass.
4.6 Lower order cognitive question. Adequately answered by top achieving centres.
Much guessing by a number of centres.

QUESTION 5

Understanding of applied mechanics principals was tested in this question with emphasis on (1) shear forces, (2) calculating areas and (3) centre of a lamina.
LO: 3: Ass: 3.6

5.1.1 A large number of learners tried but got confused between the determining of bending moments and the shear force. The candidates of a number of centres have no knowledge of determining the shear force – lack of education.

5.1.1 Shear force diagram – as above

5.2. Calculation of total area of lamina and the position of the centroid. Learners with a basic mathematical skills should be able to do the calculations, but a number of centres performed very poorly – lack of education?
Adequately answered by top achieving centres.

QUESTION 6

The skill to communicate by means of graphic communication was tested in this question with emphasis on interpretation of building drawing practice in (1) elevation drawings and (2) section drawings.
LO: 3: Ass: 3.4
LO: 4: Ass: 4.4

Wide variation in points from different centres. The identification of the drawing by means of NORTH ELEVATION and SCALE is a problem.
Almost none learners had drawn the window sill and the garage door ramp.
A number of centres answered this section much better compared to the rest o the paper.

Number of learners could not draw according to the scale

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

This advise is only applicable to the centres where education is taking place.

1 Fixation of graphic communication and applied mechanics must be done by means of repetition. Use basic problem solving questions and do revision regularly. Learners must be taught to do scale drawings.

2 More emphasis should be given the construction parts and purposes. The definitions of terms must be mastered by the learners to apply it more successfully in scenario questions.

3 Follow the examination guideline for year planning.

4 Variations in construction methods must also be explained to learners.

5 When scenario questions are answered, the learners must read it thoroughly and determine the important or applicable fact/word of the question.

6 Exemplars and provincial papers can be used in preparation of the final exam, but not in isolation. Revision is also very important.

7 Expose learners to the practical application of construction work. (Just make sure that the applicable construction is according to acceptable construction methods)

8. ANY OTHER COMMENTS

A number of examination centres indicate poor knowledge of the subject and in same cases indicate that little education had take place, especially in materials, civil services, determining of quantities, applied mechanics and graphic communication questions.

437 (69%) of learners failed this subject

A number of reasons could have contribute to this crisis:

1: Lack of text books.

2: Examiners using other variety of text books for setting the paper.

3: Content knowledge gap of teachers.

4: A lot of work to cover during a year – subject is too wide.

5: Mathematical skills of learners (and teachers?) are very poor.

The unsatisfactory use of language in a number of centres indicates to a larger problem than only knowledge and interpretation of questions.

Safety is the only content that was answered adequate by the majority of centres.

Using only one text book for all schools can solve a lot of variations and confusions regarding content.

The timetable must be revised so that the subject can be written in the morning and not too combined with another high content subject on the same day.

		Q1	Q2	Q3	Q4	Q5	Q6	TOTAL	
AVARAGE		10.0	9.6	7.4	5.8	6.5	12.1	51.3	
Total of Question		30	40	30	30	30	40	200	
% Per Question		33	24	25	19	22	30	50	25.7
Rating code		**1**	**2**	**3**	**4**	**5**	**6**	**7**	
Total no. of candidates		473	114	66	18	7	4	4	686
% Per Question		33	24	25	19	22	30	50	25.7
% In Rating		69	17	10	3	1	1	1	100

SIGNATURE OF EXAMINER/MODERATOR: _____