



## **EXAMINATIONS AND ASSESSMENT CHIEF DIRECTORATE**

**Home of Examinations and Assessment, Zone 6, Zwelitsha, 5600**  
**REPUBLIC OF SOUTH AFRICA, Website: [www.ecdoe.gov.za](http://www.ecdoe.gov.za)**

### **2023 NSC CHIEF MARKER'S REPORT**

<b>SUBJECT</b>	<b>Agricultural sciences</b>
<b>QUESTION PAPER</b>	<b>1</b>
<b>DURATION OF PAPER:</b>	<b>2½ hours</b>
<b>PROVINCE</b>	<b>EASTERN CAPE</b>
<b>OF MARKING</b>	<b>07-21 December 2023</b>


#### **SECTION 1: (General overview of Learner Performance in the question paper as a whole)**

<b>Average mark from the sample of 100 for the whole paper:</b>		<b>81 out of 150 marks</b>	
<b>TOPIC OR ASPECT TESTED</b>	<b>LOWEST MARK</b>	<b>HIGHEST MARK</b>	<b>AVERAGE % FROM SAMPLE</b>
<ul style="list-style-type: none"> <li>• Animal Nutrition</li> <li>• Animal Production Protection and Control</li> <li>• Animal Reproduction</li> </ul>	<b>02</b>	<b>148</b>	<b>52,0%</b>
<ul style="list-style-type: none"> <li>• The paper was fair and tricky in some areas. Most learners performed moderate in section A, obtaining marks between 15 -30. Approximately 18% of learners managed to get 32 marks and above.</li> </ul>			
<ul style="list-style-type: none"> <li>• Combination and interpretation questions in section A was still a challenge. Even some of the top achievers were unable to get the combination question correct in question 1.1.4.</li> <li>• In question 1.2.3 matching column the description in column B confused learners as it talks about ability of farm animals instead of describing farm animals.</li> <li>• Spelling and terminology were a challenge which caused the candidates to poorly answer the questions</li> </ul>			
<ul style="list-style-type: none"> <li>• Section B was fair in all the questions, but candidates did not analyse and interpret some of the sub questions. only 70% of candidates scored marks between 13-35 in all the questions (Question 2, Question 3 &amp; Question 4).</li> </ul>			
<ul style="list-style-type: none"> <li>• Calculations need more attention as 85% of the candidates struggled to score full marks in question 2.</li> <li>• The picture in 2.1 was a challenge to some candidates because <b>part B</b> background is</li> </ul>			

<p>shaded as if it is not part of the complex stomach. Secondly the position and size of the other stomachs confused some learners as they are not correctly positioned in the diagram.</p> <ul style="list-style-type: none"> <li>• There is also an indication that some candidates do not use calculators as was shown by wrong answers although the previous steps were correct and also no indication of the final answer in calculations.</li> </ul>
<ul style="list-style-type: none"> <li>• Candidates still displayed a great challenge when it comes to responding to data based and application questions e.g., 2.4, 2.5 ,2.6,3.5,3.6 ,4.2 and 4.3.</li> </ul>
<ul style="list-style-type: none"> <li>• Candidates failed to follow instructions e.g. number 3 says they must “start a question on a new page”.</li> <li>• -Number 4 says “number the answers correctly according to the numbering system used in this question paper”.</li> <li>• Number 6 says “show ALL calculations, including formulae where applicable.</li> <li>• - In Section A, sub section 1.2 they were instructed to write e.g. A ONLY but few wrote A</li> </ul>
<ul style="list-style-type: none"> <li>• Language is still a barrier to some candidates as a result they interpret questions incorrectly as understanding depends on language.</li> </ul>
<ul style="list-style-type: none"> <li>• Some candidates still use lead pencils and by the time scripts reached the hands of the markers, some responses were already faint.</li> </ul>
<ul style="list-style-type: none"> <li>• Candidates must refrain from guessing e.g. writing two different responses for one question as the mark will be allocated to the first response.</li> </ul>
<ul style="list-style-type: none"> <li>• Allocation of subject in the final time table must not be predictable that both papers will be written at the end of the examinations, as this has a negative impact on the performance of the candidates and their attitude towards the subject.</li> <li>• It's worse that Agricultural Sciences is a <b>science subject</b> for it to be written after Home Language on the same in the afternoon.</li> </ul>

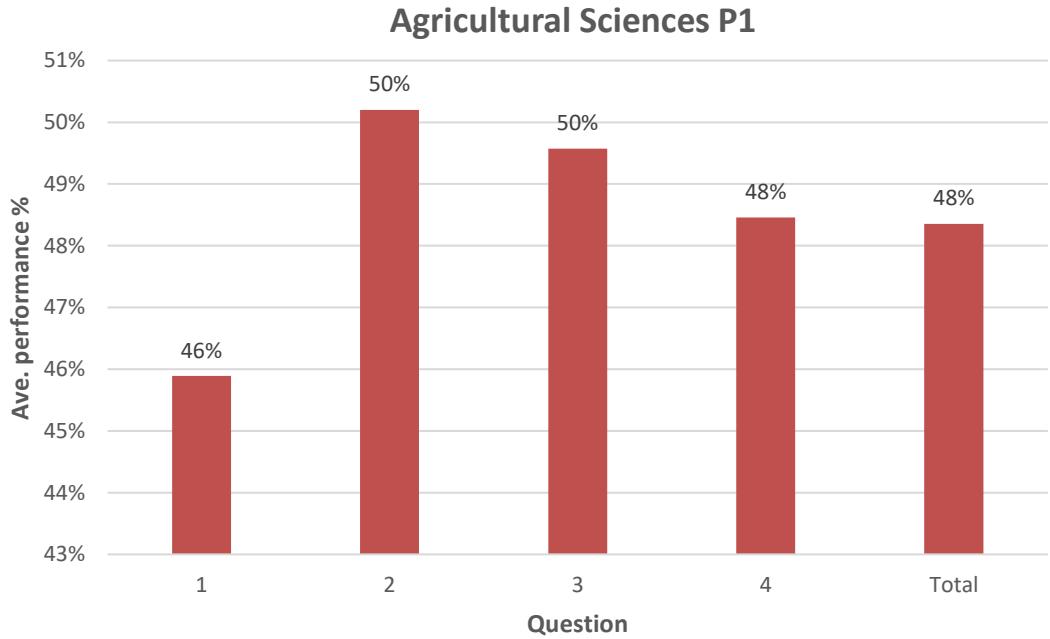
The bar graphs below shows the general overview of learner performance per question as represented in the Rasch analysis (sample of 100 scripts).

➤ **Figure 1: Average performance (%) per question and overall average performance (%)**

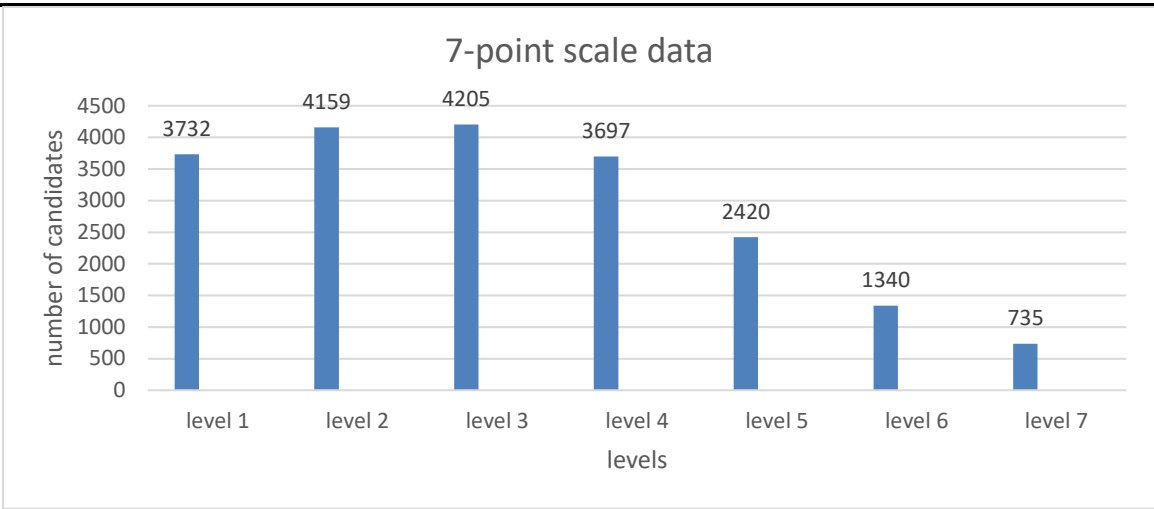




<b>Exam</b>	National Senior Certificate 2023
<b>Date</b>	Nov-23
<b>Grade</b>	12
<b>Paper</b>	Agricultural Sciences P1

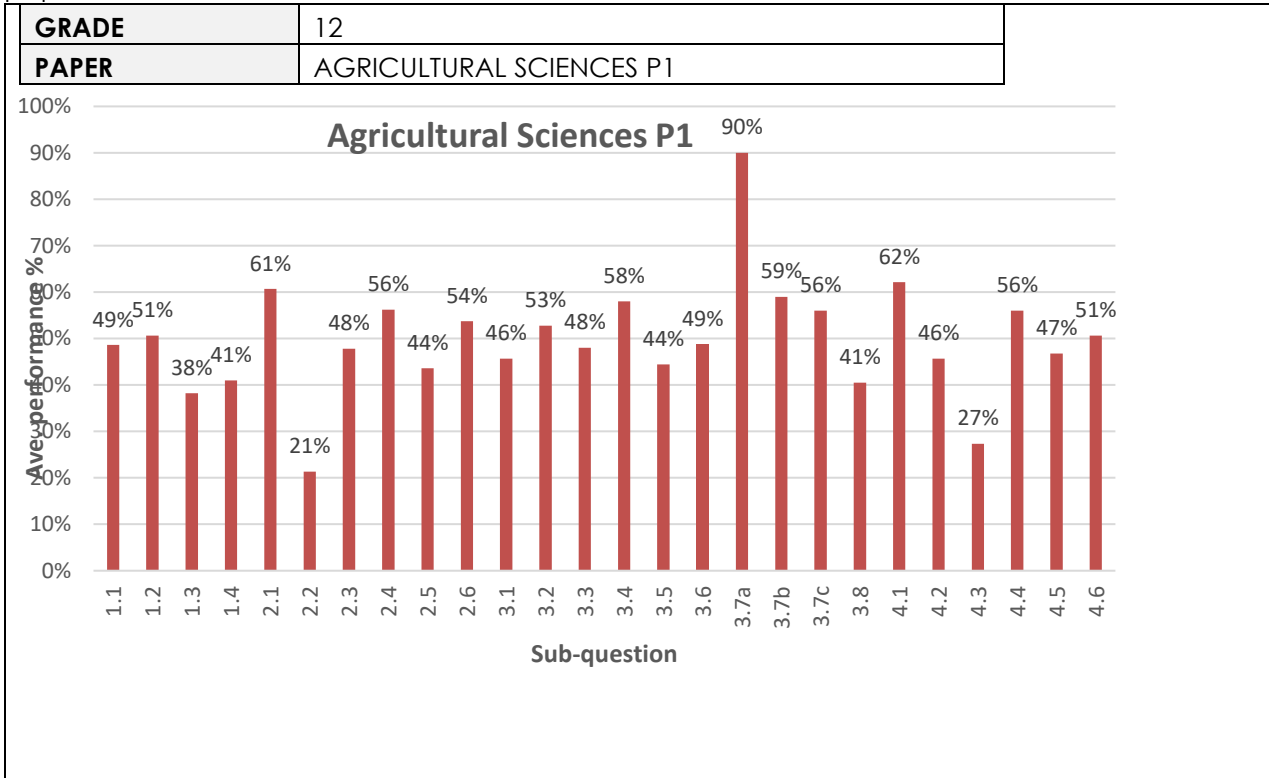


QUESTION	KNOWLEDGE (CONTENT) AREA ASSESSED FOR EACH QUESTION
<b>QUESTION 1</b>	Animal Nutrition, Animal Production, Protection & Control and Animal Reproduction (Multiple Choice questions; Column A & B; Terminology and Term replacement)
<b>QUESTION 2</b>	Animal Nutrition
<b>QUESTION 3</b>	Animal Production, Protection & Control
<b>QUESTION 4</b>	Animal Reproduction



A substantial number of candidates performed at level 2, 3 and 1, but the number of those who performed above level 4, 5, 6 and 7 has slightly improved compared to 2022.

The bar graph below shows the critical analysis and performance of all questions in this question paper.



**SECTION 2: Comment on candidates' performance in individual questions**

<b>QUESTION 1: ANIMAL NUTRITION, ANIMAL PRODUCTION &amp; ANIMAL DISEASES, ANIMAL REPRODUCTION (45 MARKS)</b>
<b>(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?</b>
<ul style="list-style-type: none"> <li>Candidates performed fairly in entire question 1 with the average mark of 25. Most of candidates were losing marks in questions that were based in animal nutrition and animal reproduction e.g. 1.1.3, 1.1.4, 1.2.3, 1.2.5, 1.3.2, 1.3.5, 1.4.2 and 1.4.4.</li> </ul>

- Even though there were give away question/ easily obtained marks, 40% of candidates failed to provide correct answers more especial the weaker learners e.g. 1.1.1,1.1.2,1.1.5, ,1.1.7,1.1.8, 1.1.9,1.1.10, 1.2.1, 1.2.2, 1.2.5, 1.3.2 and 1.3.5. These were questions that learners were supposed to have obtained marks.

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

- It was well answered by candidates, more than 68% of candidates did well except that 1.1.3 candidates seemed not to understand questions that require them to provide a gland that secretes succus entericus. The term **indentations** seemed to have created a problem for candidates to understand the gland required.
- 1.1.4 candidates failed to understand the implication a given nutritive of Nutritive ratio.

- 1.2 It was well answered by candidates because about 60 % got 6/10 and above.
- 1.2.3 Was the most difficult to get they wrote NONE instead of B ONLY. This is due to the fact that the description given in column **B** confused learners as it talks about ability of farm animals instead of describing farm animals.
- 1.2.5 Learners still wrote AONLY OR B ONLY instead of BOTH A and B indicating that they do not understand the hormones used in synchronization of oestrus.

- 1.3 It was fairly answered, most of candidates got 6/10 and above.
- 1.3.2 Majority of learners wrote feed shed or feed pen instead of feedlot. They failed to differentiate between feed shed and feedlot.
- 1.3.5 Candidates misunderstood the question confusing it with lack of sexual desire, they wrote lack of libido instead of impotence. They overlooked the fact that the statement indicated that the bull has interest. Even though other candidates managed to write impotence some wrote wrong spelling "importance" and that made them to lose 2 full marks.

- 1.4 It Was well answered because 70% of learners managed get all the answers
- 1.4.2 Most of candidates were providing physical or mechanical instead of biological which was not the correct answer. It simply means they were taught that question 1.4 is all about opposites, as it was a general trend on the question.

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

- Subject advisors must facilitate content workshops in each semester which equip educators.
- Educators must drill learners on answering questions based on instructions given e.g when the question says write down only LETTERS, they must do so and not write statements provided.
- Subject advisers must identify lead teachers to go and assist in underperforming schools during the course of the year.
- The subject planner must make sure that there is one or two prescribed textbooks for the

subject.
<ul style="list-style-type: none"> <li>• Educators must drill learners on concepts found in each topic and let term create a word bank for each topic.</li> </ul>
<ul style="list-style-type: none"> <li>• Educators must expose learners to a variety of questions e.g. combination questions for 1.1, the style of questions set in 1.2, one-word questions and replacement questions</li> </ul>
<ul style="list-style-type: none"> <li>• Topic tests must be administered before a new topic is introduced.</li> </ul>
<ul style="list-style-type: none"> <li>• Learners must be encouraged not to leave blank spaces on the multiple-choice questions.</li> </ul>
<ul style="list-style-type: none"> <li>• Educators must use a variety of text books so as to collect as much content as possible</li> </ul>
<ul style="list-style-type: none"> <li>• More informal tasks must be administered as frequently as possible.</li> </ul>
<ul style="list-style-type: none"> <li>• Development of posters and charts must be done that will attract interest of learners.</li> </ul>
<ul style="list-style-type: none"> <li>• Peer teaching must be encouraged to develop confidence of our learners</li> </ul>
<ul style="list-style-type: none"> <li>• Educators must use CAPS document and Examination Guidelines when teaching and assessing formal and informal tasks.</li> </ul>

<b>(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.</b>
<ul style="list-style-type: none"> <li>• It is evident that most of the aforementioned problems are caused by the fact that, there are educators who speak more and write less when delivering their lessons. Writing more regularly allows the learners to get used to how different words/ concepts are spelt and defined. All these would help in enhancing the performance of our learners in Section A.</li> </ul>
<ul style="list-style-type: none"> <li>• Candidates showed no competence in eliminating the incorrect options in question 1.1, matching the items in column A with the descriptions in column B in question 1.2., giving the correct term in question 1.3 and changing the underlined word in question 1.4</li> </ul>
<ul style="list-style-type: none"> <li>• English must use strictly as a medium of instruction.</li> </ul>

<b>QUESTION 2: ANIMAL NUTRITION (35 MARKS)</b>
<b>(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?</b>
<ul style="list-style-type: none"> <li>• Question 2 was well answered, most of candidates performed well in this question. The highest mark obtained by candidates is 35/ 35 with an average mark of 23, the lowest mark obtained was 0/35.</li> </ul>
<ul style="list-style-type: none"> <li>• Candidates lost marks unnecessarily more especially in calculations and it is evident in their performance that they did not read questions with understanding, did not make use of key words used in questions</li> </ul>
<ul style="list-style-type: none"> <li>• The diagram provided in question 2.1 confused learners as the shape and position of the complex stomach was not correctly represented.</li> </ul>
<ul style="list-style-type: none"> <li>• Most candidates find it difficult to analyse and answer questions based on scenarios.</li> </ul>
<ul style="list-style-type: none"> <li>• About 68% of candidates managed got good marks although there were some tricky sub questions and unclear representation of the picture in question 2.1.</li> </ul>

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

- Although most of candidates managed to score good marks, language is still a challenge for learners who did not do well in this question. This resulted to candidates not to provide correct answers because they failed to understand the questions.

2.1

- 2.1.1 Was fairly answered by candidates, even though some candidates wrote letter F in 2.1.1(a) instead of C because of the incorrect size of letter C/F represented in the picture in 2.1. Secondly some candidates in question 2.1.1(b) wrote letter C instead of F because they of the in incorrect position of F/C. Learners need to be trained on how to analyse and answer question based on pictures and be able to corelate in information they know to the information given on the question paper.
- 2.1.2 It was well answered, as 85% of candidates scored marks. Even the weaker learners managed to get full marks. Although 45% of candidates were not specific, they simple wrote absorption only or absorption of water and transportation of food to the anus instead of undigested food to the large intestines.
- 2.1.3 Was well answered, 80% of candidates managed to get 1 out 2 marks. Candidates were able to differentiate between the oesophagus of a fowl and a sheep by stating the presence of crop in fowls although in sheep they were not specific that its does not have a crop.

2.2

- 2.2.1 It was fairly answered because approximately 55% of learners manged to score a mark. Candidates wrote ideal protein or biological value instead of essential amino acids.
- 2.2.2 It was fairly answered because candidates managed to get 1 out of 2 marks. Candidates were only giving one reason, which is the function of rumen microbes to synthesise amino acids, they omitted micro- organisms. However, some candidates wrote the presence of micro-organisms in ruminants and omitting the part that talks about their function.

2.3

- 2.3.1 It was fairly answered, though some candidates still calculated the percent of dry material of manure and minus it, they confused it with the calculations that have moisture content. Secondly 80% of candidates lost a mark for formula because they multiplied by 100% instead of 100 of which multiplying by 100% makes the formula incorrect. Some candidates about 30% lost a mark for not putting the correct unit.

2.4

- 2.4.1 it was fairly answered as 65 % of candidates manged to score 2 full marks. Although some candidates wrote question 2.4.1 A-as mineral and some wrote C- as starch because they simple looked at the example of a carbohydrate provided (maltose).
- 2.4.2 It was well answered as most managed to get 2 full marks as it was a giveaway question. Even though the weaker learners failed to provide

	<p>functions of water, they simple wrote functions of water in plants, and that resulted in candidates to lose marks.</p> <ul style="list-style-type: none"> <li>• 2.4.3 it was well answered, 80% of candidates managed to score the mark. Some candidates failed to follow the question instruction instead of writing letter B they wrote the name protein. Other candidates were doing guess work because 15% of the candidates wrote C instead of B.</li> </ul>
2.5	<ul style="list-style-type: none"> <li>• 2.5.1 Was poorly answered, about 90% of the candidates got it incorrectly. Candidates twisted the responses for A and B. It is evident that most candidates do know that the <b>smallest part</b> of the ration represent protein rich concentrates and the <b>biggest part</b> represent carbohydrate rich concentrate.</li> <li>• 2.5.2 Was poorly answered, because this was a follow up question for question 2.5.1, as they twisted the responses in question 2.5.1 that resulted in candidates to be unable to score full marks in question 2.5.2. some candidates lost a mark for not showing all calculations, they omitted the addition part of the calculation which was 1 mark. Other candidates calculated the percentage correctly but they lost a mark by multiplying by 100%.</li> </ul>
2.6	<ul style="list-style-type: none"> <li>• 2.6.1 Fairly answered as 60 % of the candidates managed to score 3 full marks. However, some candidates do not show all calculations for the first step of the calculation, they simple wrote 315 without showing additions. Some candidates are unable to convert tons to kg instead of multiplying by 1000 they simple divided by 1000.</li> <li>• 2.6.2 Was fairly answered, majority of candidates confused importance of fodder flow planning with reasons for calculating energy value of feeds. Few candidates got 2 full marks in this question.</li> <li>• 2.6.3 Was fairly answered as 70% of the candidates managed to score 4 marks out of 6 marks. Although other candidates wrote wrong heading that is not showing both variables of the X and Y- axis, labelling of Y-axis was also incorrect in some candidates because they only wrote feed production only and omitting feed required or vise vesa. It is evident that candidate overlooked the question as a result they drew only one line instead of two lines. Few candidates did not write the units (tons).</li> </ul>

<b>(c) Provide suggestions for improvement in relation to Teaching and Learning</b>	
	<ul style="list-style-type: none"> <li>• Instruction verbs should be unpacked to learners and must form part of informal assessment during the development of learners for examination readiness.</li> </ul>
	<ul style="list-style-type: none"> <li>• Candidates must be trained on how to respond to data-based questions. More informal and formal tasks must be provided to learners.</li> </ul>
	<ul style="list-style-type: none"> <li>• Educators must emphasize to learners the importance of Pearson square and the reason to calculate Pearson square, they must also emphasize that it is calculated into parts.</li> </ul>



<p>Parts calculated need to be interpreted that the biggest part represent carbohydrate rich concentrate and the smallest part represent the protein rich concentrate.</p> <ul style="list-style-type: none"> <li>Percentage of highest digestible protein must be emphasized that in represent the <b>protein rich concentrate</b> and the percentage of the lowest digestible protein represent <b>carbohydrate rich concentrate</b>.</li> </ul>
<ul style="list-style-type: none"> <li>Educators must train learners that they must not put 100% when they write the formula for digestibility coefficient. Secondly educators must refrain from teaching learners to abbreviate formulas. Educators must also emphasize to learners the importance of writing the full correct formula.</li> </ul>
<ul style="list-style-type: none"> <li>Educators must emphasize the importance of following instruction number 6 of the question paper i.e. show ALL calculations, including formula.</li> </ul>
<ul style="list-style-type: none"> <li>Educators must prepare learners for all types of calculations in the subject.</li> </ul>
<ul style="list-style-type: none"> <li>Regular training of learners on how to draw a graph and interpretation of graph. More emphasis on identification of dependent and independent variables.</li> </ul>

<p><b>(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.</b></p>
<ul style="list-style-type: none"> <li>Educators must always share the information to their learners about the criteria followed in the marking of graphs.</li> <li>Learners must be exposed to a lot of data response questions e.g scenario, interpretation of graphs, information on the tables etc., must also avoid cut and paste from the previous question papers.</li> </ul>
<ul style="list-style-type: none"> <li>Learners must be exposed to a variety of questions on different calculations.</li> </ul>
<ul style="list-style-type: none"> <li>Learners must be exposed to live specimens of the parts of alimentary canal in order for them to know the sizes and the positions of the complex stomach and their functions.</li> </ul>
<ul style="list-style-type: none"> <li>Candidate they still lose marks on graphs this means therefore learners must be assessed more on graphs, because we cannot run away from the fact that all our papers have got graphs.</li> </ul>

<p><b>QUESTION 3: ANIMAL PRODUCTION AND ANIMAL DISEASES (35 MARKS)</b></p>
<p><b>(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?</b></p>
<ul style="list-style-type: none"> <li>Question 3 It was well answered; this had contributed greatly to the good performance of most learners. The highest score obtained was 35 and the lowest was 04 out of 35 marks. Majority of learners managed to score more than 22 out of 35 marks.</li> </ul>
<ul style="list-style-type: none"> <li>Some candidates lost because they failed to follow instructions in 3.2 i.e follow</li> </ul>
<ul style="list-style-type: none"> <li>Educators must train learners on how to apply their knowledge or information on source-based questions and they must also emphasize that it's not always the case that the</li> </ul>

<p>answer will be in the scenario.</p> <ul style="list-style-type: none"> <li>• Pictures, diagrams etc. should be friendly to the learners. Preferably those should be taken from our textbooks or any other source accessible to learners. At least it should not be confusing, but should be clear.</li> </ul>
<ul style="list-style-type: none"> <li>• Educators must always stick to the language of teaching and learning and must let their learners express themselves using the language, because in this question learners that were able to express themselves well scored a lot of marks. The use of vernacular (ISIXHOSA) must be discouraged (NB THE XHOSA VERSION of the subject is not assisting in anyway instead it leads to candidates using some Xhosa words).</li> </ul>

<p><b>(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.</b></p>	
<ul style="list-style-type: none"> <li>• Although most of candidates managed to score good marks, language is still a challenge for learners who did not do well in this question. This resulted to candidates not to provide correct answers because they failed to understand the questions. Language and analysis of the diagrams and pictures seemed to create a big problem for the candidates.</li> </ul>	
3.1	<ul style="list-style-type: none"> <li>• 3.1.1 Fairly answered, more than 60% of candidates managed to indicate the production system in 3.1.1(a) but in 3.1.1(b) they failed to provide the example production system represented. This is evident that learners are drilled that question 3.1 is about production systems ie Intensive and Extensive, as 80% of the candidates wrote extensive in question 3.1.1(b) instead of free range.</li> <li>• 3.1.2 Was well answered, as majority of learners managed to identify the facility in question 3.1.2.</li> <li>• 3.1.3 Fairly answered, although most candidates wrote reasons for shelter instead of the reason for housing pigs in a farrowing pen, it means that they overlooked the question. Other candidates wrote the results of pig kept on farrowing pen not the reason why pigs are kept in a farrowing pen i.e they simply wrote that the reason for housing pigs in a farrowing pen is to ensure feeding of the piglets and to increase production.</li> <li>• 3.1.4 Fairly answered, most learners did not write factors that increase production instead they wrote temperature, technology, more space for animals to move, machinery and production of many piglets.</li> </ul>
3.2	<ul style="list-style-type: none"> <li>• 3.2.1 It was well answered, most candidates managed to score all the marks. However, some candidates lost all the marks because they wrote statements instead of letters that were required. It clearly shows that instructions were not followed by the candidates.</li> </ul>
3.3	<ul style="list-style-type: none"> <li>• 3.3.1 Was well answered, because the picture was completely clear. Although some candidates wrote head clamp instead of head gate.</li> </ul>

	<ul style="list-style-type: none"> <li>• 3.3.2 It was well answered, although some candidates still mentioned the management practices that are performed in the facility represented instead of the purpose of the facility.</li> <li>• 3.3.3 It was well answered as most candidates managed to get 1 mark out of 2 marks and some even scored full marks.</li> </ul>
3.4	<ul style="list-style-type: none"> <li>• It was well answered, more than 80% of candidates got full marks.</li> </ul>
3.5	<ul style="list-style-type: none"> <li>• 3.5.1 It was poorly answered, majority of candidates did not score a mark. Candidates wrote mosquito borne viral disease instead of Rift valley fever, of which they took their response directly from the scenario.</li> <li>• 3.5.2 It was fairly answered, at least 60% of candidates managed to get 1 mark out of 2 marks. In question 3.5.2.(a) most candidates wrote mosquito borne viral disease instead of mosquito, it seems as if candidates are unable to distinguish between a disease and a vector. In question 3.5.2. (b) candidates wrote viral disease instead of virus, again candidates are unable to differentiate between a disease and a pathogen.</li> <li>• 3.5.3 It was well answered, at least most candidates managed to score a mark.</li> <li>• 3.5.4 It was fairly answered, around 65% of candidates managed to score a mark. Some candidates wrote enzootic/contagious/infectious instead of zoonotic, it seems like candidates can not differentiate between zoonotic and enzootic.</li> <li>• 3.5.5 It was well answered, majority of candidates managed to score 2 full marks. Although some candidates wrote general economic implications of animal diseases, of which the question requires specific economic implication of animal diseases to the farmer, i.e some wrote loss of jobs, loss of economy and some candidates wrote vaccination only without qualifying it i.e high vaccination cost or high treatment cost.</li> </ul>
3.6	<ul style="list-style-type: none"> <li>• 3.6.1 It was fairly answered, this performance related to the fact that our candidates displayed poor understanding of the statement that required them to classify the parasite according to its life cycle. Some candidates overlooked life cycle in the question as a result they wrote external parasite instead of 2 host tick. It means they were classifying the type of parasite instead of classifying the parasite according to its life cycle.</li> <li>• 3.6.2 It was fairly answered, because this was a follow up question. Candidates who did not manage to score a mark in question 3.6.1 ended up losing a mark in question 3.6.2.</li> <li>• 3.6.3 It was well answered, because most candidates took responses directly from the question paper, that resulted in candidates scoring 3 full marks.</li> </ul>
3.7	<ul style="list-style-type: none"> <li>• 3.7.1 Performance was well, although some candidates were not scoring marks in question 3.7(b) and 3.7(c) because they were twisting the responses.</li> </ul>
3.8	<ul style="list-style-type: none"> <li>• It was poorly answered, as 70% of the candidates wrote practices instead of principles of good health i.e their responses were dosing, dipping etc.</li> </ul>

<b>(c) Provide suggestions for improvement in relation to Teaching and Learning</b>
<ul style="list-style-type: none"> <li>• Regular informal assessment after teaching each sub topic.</li> </ul>
<ul style="list-style-type: none"> <li>• More informal assessment must be given to learners that emphasis the difference between classifying the types of parasites and classifying parasites according to life cycle.</li> </ul>
<ul style="list-style-type: none"> <li>• More emphasis must be given to learners on two different types of production systems as well as examples of production systems.</li> </ul>
<ul style="list-style-type: none"> <li>• Emphasis must be made on the key symptoms of animal diseases.</li> </ul>
<ul style="list-style-type: none"> <li>• The use of pictures, diagrams, videos etc. is very important to arouse the interest of the learners.</li> </ul>
<ul style="list-style-type: none"> <li>• The frequent use of data response questions is always very important.</li> </ul>
<ul style="list-style-type: none"> <li>• It is also important for educators to put an emphasis that, marks are lost when a candidate provides a description in place of a concept as per the instruction.</li> </ul>

<b>d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.</b>
<ul style="list-style-type: none"> <li>• Different pictures or data must be used to expose the learners to different handling facilities and equipment's.</li> </ul>
<ul style="list-style-type: none"> <li>• Animal diseases should be taught in a table form as presented in the CAPS document (page 46) and examination guidelines (page 14) in order to expose learners to the holistic approach of all the important diseases found in South Africa as prescribed for Grade 12.</li> </ul>
<ul style="list-style-type: none"> <li>• Different pictures or data must be used to expose the learners to different production systems, examples of production systems and farming systems.</li> </ul>
<ul style="list-style-type: none"> <li>• Group teaching must be encouraged in different districts and visits to centers where learners will be exposed to different handling tools or equipment's.</li> </ul>

<b>QUESTION 4: ANIMAL REPRODUCTION (35 MARKS)</b>
<b>(a)General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?</b>
<ul style="list-style-type: none"> <li>• Question 4 was fairly answered, at least more than 75% of candidates managed to score 22 out of 35 marks. The highest score obtained by the candidates was 35 out of 35 marks and the lowest was 00.</li> </ul>
<ul style="list-style-type: none"> <li>• Pictures, diagrams etc. should be friendly to the learners. Preferably those should be taken from our textbooks or any other source accessible to learners. At least it should not be confusing, but should be clear.</li> </ul>
<ul style="list-style-type: none"> <li>• Some candidates wrote responses that were not catered in the marking guideline.</li> </ul>

- Even the weaker learners managed to get at least 10 out of 35 marks. It evident that candidates were able make use of the advantage of doing related subjects like Agricultural sciences and Life sciences. It very important to encourage cooperation between educators within the school who do related subjects.

4.1	<ul style="list-style-type: none"> <li>• 4.1.1 Performance was good as one would expect, because most candidates managed to score 2 out of 3 marks.</li> <li>• 4.1.2 It was well answered, even the weaker learners managed to score all the marks, as it was a giveaway question.</li> </ul>
4.2	<ul style="list-style-type: none"> <li>• 4.2.1 Was well answered, but few candidates wrote the stage of the process (Mounting) instead of the name of the reproductive process (Mating).</li> <li>• 4.2.2 It was fairly answered, although most learners lost marks because of the unclear picture represented in question 4.2 i.e most learners wrote dismounting instead of mounting of which it was not catered in the marking guideline. In actual fact both mounting and dismounting are correct.</li> <li>• 4.2.3 It was well answered, as 85% of the candidates scored 2 full marks. Although few learners wrote signs of a cow in oestrus instead of sexual behavioral signs that are displayed by bulls before mating.</li> <li>• 4.2.4 It was well answered, majority of candidates managed to score 2 full marks. Although some candidates were losing marks unnecessary i.e some candidates were writing lack of libido/ejaculation/signs of oestrus instead of factors that regulate mating behavior in bulls.</li> </ul>
4.3	<ul style="list-style-type: none"> <li>• 4.3.1 It was poorly answered, majority of learners were unable to provide the reproductive technique represented in question 4.3.1 i.e they were writing embryo transfer/ cloning/embryo flushing instead of reproductive cloning and therapeutic cloning. This seemed to be a difficult question to most candidates as they failed to analyze and interpret the data-based question.</li> <li>• 4.3.2 It was fairly answered, more than 65% of candidates managed to score 1 mark out of 2 marks. Because they took the responses from the data represented in the question paper.</li> <li>• 4.3.3 it was well answered, as majority of learners scored 2 full marks, and some scored 1 mark out of 2 marks. Those who lost marks wrote disadvantages of artificial insemination/those of synchronization of oestrus i.e time consuming and labour intensive instead of disadvantages of cloning.</li> </ul>
4.4	<ul style="list-style-type: none"> <li>• 4.4.1 It was well answered, most candidates scored marks, even the weaker learners scored 1 mark out of 2 marks.</li> <li>• 4.4.2 It was fairly answered, because around 45% were able to label A, B and C. Some candidates scored 1 mark out 3marks which is the labeling of B. In labeling of A candidates wrote haploid chromosome /sperm/ spermatocyte without qualifying that the spermatocyte is secondary spermatocyte. In labelling of C candidates</li> </ul>

	<p>wrote diploid egg cell/ diploid ovum/ovary / primary eggs instead of primary oocyte or diploid oocyte.</p> <ul style="list-style-type: none"> <li>• 4.4.3 Fairly answered, as 60 % of the candidates managed to score a mark, although some lost a mark because they wrote meiosis instead of mitosis.</li> </ul>
4.5	<ul style="list-style-type: none"> <li>• 4.5.1 It was well answered, because most candidates managed to score a mark, even though they wrote wrong spelling of dystocia.</li> <li>• 4.5.2 It was fairly answered, because at least some candidates managed to score 1 mark out of 2 marks. Some candidates lost marks because they wrote incorrect responses i.e injuries/ disease instead of problems associated with foetus that cause dystocia.</li> <li>• 4.5.3 It was fairly answered, some candidates managed to get 1 mark out of 2 marks. Candidates wrote injuries/ vaginal tear/ stress/poison instead of factors that cause retention of the placenta.</li> </ul>
4.6	<ul style="list-style-type: none"> <li>• 4.6.1 It was fairly answered, about 75 % of managed to score 1 mark out of 2 marks. Some lost marks for identifying part B i.e they wrote teat cavity/ teat gland /milk cavity/ milk gland instead of gland cavity.</li> <li>• 4.6.2 It was well answered even the weaker candidates managed to score a mark.</li> <li>• 4.6.3 It was fairly answered, however some candidates lost all the marks because they twisted the responses although they know hormones that were asked in 4.6.3. Few candidates wrote any hormone that they know i.e progesterone/FSH/ oestrogen/ prostaglandin instead of prolactin and oxytocin.</li> </ul>

<b>(c) Provide suggestions for improvement in relation to Teaching and Learning</b>	
	<ul style="list-style-type: none"> <li>• During teaching educators must intergrade and show relationship between different topics like PREGNANCY, PARTURITION, LACTATION etc.</li> <li>• Different stages of mating must be emphasized to learners.</li> </ul>
	<ul style="list-style-type: none"> <li>• Educators must put more emphasis on the functions and differences of hormones involved in lactation.</li> </ul>
	<ul style="list-style-type: none"> <li>• Educators teach learners the difference between a bull and a cow. This was a problem in question 4.2.3 as wrote sigs of a cow in oestrus whereas they were required to write behavioral signs that are displayed by a bull before mating.</li> </ul>
	<ul style="list-style-type: none"> <li>• Educators must emphasis the different types of cloning, their purpose as well as advantages and disadvantages of cloning. It showed to be a problematic question to candidates.</li> </ul>
	<ul style="list-style-type: none"> <li>• Pictures and charts must be used for teaching topics with diagrams because question 4 always have diagrams and pictures that need to be analyzed and interpreted. So, candidates need more exposure in order for them to score marks.</li> </ul>
	<ul style="list-style-type: none"> <li>• Educators must create more data response questions.</li> </ul>

- Educators must be encouraged to interact with the Chief marker's report so as to avoid repeating the same mistakes. Subject advisors must organize information sharing workshops so as to discuss challenges faced during marking.
- Educators should be encouraged to use question by question approach when revising.
- Educator must formulate groups of learners in order to facilitate peer teaching.
- Educators are also encouraged to formulate groups according to their level of knowledge.

**(d) Describe any other specific observations relating to responses of learners and comments that are useful to teachers, subject advisors, teacher development etc.**

- Candidates still struggle to respond to data-based questions this means therefore educators must expose them to more data-based questions, let them interact with the data even before we give them questions.
- Candidate still lose marks on labelling of diagrams this means therefore learners must be assessed more on labelling of diagrams, because we cannot run away from the fact that all our papers have got diagrams to label.
- Hormones must be dealt with intensively.