Province of the
EASTERN CAPE
EDUCATION

ASSESSMENT & EXAMINATIONS
Bundy Park, Schornville, KWT * Private Bag X 4571, KWT, 5600
REPUPLIC OF SOUTH AFRICA, Website: www.ecdoe.gov.za

NSC 2011 CHIEF MARKER'S REPORT

SUBJECT	Agricultural Sciences

PAPER	2

DATE OF EXAMINATION:	07/11/2011	DURATION:	2hrs 30 mins

SECTION 1:

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

The overall performance of learners in the 2011N.S.C examinations in Agricultural Sciences paper 2 is quite commendable. The scores of the learners ranged between 12 and 133 out of 150 marks. Statistically 15441 scripts of learners were marked. Their scores were categorised into levels ranging from 1 (0-29) to level7(80-100) 81.5%, or 12,507learners obtained level 2(30-39) and above, and 18,5 or 2934 fell at level 1. 0, 2% or 32 got level 7, a huge improvement at this level compared to 15 of last year , 2010. There is a slight shift from levels 1 and 2, to levels 3 and 4. This is an indication of quite an improved performance as compared with learners' performance in 2010.
The improvement of the performance this year could be attributed to the fact that most of the learners scored very high marks (23 out of 45 and above in Section A i.e. 75%).

Learners' performance in section B was equally quite encouraging, but not with all the questions or topics. Section B was made up of question 2 Agricultural management, question 3 Production factors and Management, and question 4 Basic Agricultural genetics. Different assessment strategies such as calculations, interpretations of data, sketches etc were used by the examiner. The different assessment strategies gave the learners diversified opportunities of answering different questions correctly. However, some questions like 2.4 seemed to be challenging to most of the learners. The general observation is that, application and interpretation of subject content could not be correlated in some of the questions such as 1.4.2. Also some learners could not follow instructions such as 'tabulation' in question 3.1.1, 'redraw' in question 4.1.1, and 'calculation' in 3.4.1.
Performance of learners could be said to be statistically better than the previous year.

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?
Question 1 was well answered. Learners' scores in this section indicated that, the question was well answered. From the 100 sampled scripts more than 65% of the learners scored more than 18 or 40% marks out of 45 marks. The following questions were however poorly answered by the learners; - 1.1.8, 1.3.2, 1.3.3 and 1.3.4.,1.3.5, 1.4.1 and 1.4.2.
Question 1.1.8 was dealing with the quality of labour.
Questions 1.3.2 and 1.3.3 dealt with concepts related to marketing E.g. cooperative marketing and multi segmented approach.
Question 1.3.4 Dealt with electroporation which is in the section of Genetic modification.
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
Question 1.1.8 This question demanded reasoning on the part of the learners which the learners failed to demonstrate. For example they gave option "A" (satisfaction of the workers) as a measure of quality of labour as the correct answer, instead of "D" (productivity of the workers).
Question 1.3.2 : Concepts like "Autonomous association of persons" might have been too loaded for learners to understand and respond correctly because, English is their second language.E.g. Learners were giving "pool system" as a response instead of co-operative system.
Question 1.3.4 Learners gave incorrect responses such as DNA. It was evident that most learners did not know the concept **electroporation** which was the expected answer.
Question 1.3.5 Learners were confusing Genetics with Heredity, inheritance, heritability etc. This could be attributed to the fact that concepts in genetics are not properly understood by learners.

Question 1.4 :

1.4.1 Most learners failed to give “research” as the correct response to the question instead they gave responses like “information”. This could be due to the fact that they could not relate the statement in the question to any particular term or concept.

Question 1.4.2 :

Very few learners gave “Mass” as the correct response to the question. Instead they gave “Multi segment, “Free marketing” and “Cooperative marketing” as the answer. This could be attributed to the fact that the content could not be correlated to the question.

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

Educators have to identify the key words, concepts and terms in all topics they teach, make a summary of the new concepts and explain the words in context to bring out their meanings. E.g. the concept “entrepreneur” could mean a farmer or a manufacturer, depending on the context in which it is used. In question 1.4.5 (A farm **engineer** spends most of his/her spare time on planning, motivation, administration, marketing and supervisory task). The word **farmer** does not fit in because of the context of the question.

Educators must differentiate between Genetics and Heredity because these seem to be difficult in understanding the difference between the two concepts e.g. Genetics is the **study** of how characteristics are passed from parents to the offspring. Heredity is **the passing** on of genetic characteristics from parents to offspring.

Educators need to address the concepts in detail and expose learners to different assessment strategies e.g. Jig-saw-puzzles, sketches, diagrams, differentiation of glossaries in the learners’ text books.

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

There was double crossing of responses in same questions in question 1.1

and this made learners to lose marks as neither of the crosses was marked as correct. Other questions were not crossed at all.

Learners were giving more than one response in some questions and as such losing marks because only the first response was marked. E.g. 1.3.2 Pool system and cooperation. Pool system was marked wrong

(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators should insist on the use of ideal answer sheets during the September trial examinations, June examinations and controlled tests as a way of introducing learners to how to answer questions on N.S.C answer sheets. Educators should set multiple choice, one word, matching type and incorrect word questions in their monthly test so that learners could get used to this format of questioning.
QUESTION 2
(**a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?**
General performance of learners was not good. The marks ranged from 3 to 33 marks out of 35. 48% of the sampled learners got 14 marks and above and 53% of learners got less than 14marks. Although learners did not perform well in question 2, but performance in the following questions 2.1.2, 2.1.3, and 2.2.1 was very impressing. E.g. in questions 2.1.2 48%learners obtained full mark and in question 2.2.1 60%of the sampled learners managed to obtain full marks.
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
Poor performance was observed in the following questions: - 2.1.4, 2.1.5, 2.2.2, 2.3.4, 2.4.3 and 2.4.4. 2.1.4 and 2.4.1 – learners failed to make deductions from the scenarios. 2.1.5 and 2.4.3 and 2.4.4 – The learners were unable to analyze and interpret the graphs
Question 2.2.2:- The learners failed to identify the entrepreneurial skills in the context of the manufacturer. The learners gave managerial skills as the response to the question.
Question 2.3.4 The learners failed to relate the success factors with the description provided
Common errors: Question 2.1.4: Learners were writing different ways by which the farmer could motivate labourers instead of deducing the incentives the farmer used from the data in the Table given.
Question 2.1.5 The learners gave types of capital as response. E.g. Fixed capital, movable capital instead of identifying the ways in which the farmer generated the capital from the data in the table given.
Question 2.2.2: Learners gave general managerial skills and failed to give entrepreneurial skills that were used by the manufacturers of the security system. The entrepreneurial skills

required in this case differed much with some general management skills.
Question 2.3.4: Learners linked or related motivation and appreciation with the description given instead of linking leadership with the description. Question 2.4.1 Some learners gave the definitions of supply and demand and others were showing the relationship between the prices, supply and demand and therefore could not give the correct interpretation to the question on the graph. Question 2.4.4 Learners were writing the money and not the quantities as the question demanded. Others were giving the responses in units and not in hundreds E.g. R200.00 or 2 instead of writing 200 or 2(100)
(c) Provide suggestions for improvement in relation to Teaching and Learning
Educators should make use of case studies, graphs, tables where emphasis will be on reading and also to drill learners in the interpretation of concepts as used in different context E.g. identification of entrepreneurial skills in Question 2.2.2. This also applies to questions 2.4.1 and 2.4.4. Educators should assist learners on how to answer questions as per instructions e.g. in question 2.1.4, learners failed to follow the instructions. They gave general responses to the questions, though the question was instructing them to deduce from the case study. Again in question 2.1.5, learners gave types of capital instead of ways of generating capital.
(d) Describe any other specific observations relating to responses of learners
Learners failed to relate the question to the topic assessed and they gave completely different answers. E.g. question 2.1.4.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Subject advisors should support educators by developing assessment tasks that encourage learners to read, analyse, interpret data in the form of graphs, tables, scenarios, flow charts during teaching and learning sessions. Educators should be capacitated during workshops on how to design the afore mentioned assessment tasks.
QUESTION 3
(**a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?**
Learners performed very well in this question. 70% of the sampled learners scored 14 marks and above out of the 35(40% and above). Although performance was good as compared with other questions, learners could not perform as expected in the following questions:-3.1.1, 3.1.2, 3.1.3, 3.2, 3.3.1, 3.3.5 and 3.6

(**b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.**
Question 3.1.1 Learners simply listed all the assets on both columns haphazardly without identifying the two fixed and two movable assets as requested in the question. They were writing movable assets under fixed assets and vice-versa. Marks were allocated only to the first two responses written under fixed and movable assets. All subsequent responses were not considered for marks. Question 3.1.2 Learners could not suggest sources of capital,(commercial bank, land bank etc) . Some learners were writing types of capital instead. Others were giving money lenders or loan sharks as responses; whiles others were giving problems of capital. Question 3.1.3 Answers given were an indication that they did not understand the concept "*NET WORTH".* They gave responses such as "liabilities plus assets", "list of assets in a farm" etc. Question 3.2 Learners were giving the economic characteristics of land, instead of functions of land. This is an indication that learners were confusing functions of land as a production factor with functions of land as a resource and with the economic characteristics of land (durability, indestructibility etc). Question 3.3.1 Learners failed to deduce the responses from the scenario. Responses given like "good management" or "poor management" could not accurately describe the management approach by farmers A and B. E.g. Some wrote "farmer B was using scrape metals" and "farmer A was building homes for the labourers" This meant that they could not deduce that farmer B was saving money and farmer A was caring for labourers. The question required specifications of what made farmer A to be different from farmer B.
Question 3.4.2 Learners could not correctly identify the specific management principle as indicated in the illustration. They gave "financial skills", "hard working"," decision making" as a response, instead of "supervision/control". They did not know the management principle to identify as used in context.
Question 3.5.5 Most learners gave C as the correct response and did not take notice that person labeled "C" is unsuitable for normal farm labour, though he /she has an experience in Agric knowledge.
Question 3.6 Very few learners got correct answers. Those who got marks they misinterpreted the law as "it gives workers the right to strike instead of governing it.

(c) Provide suggestions for improvement in relation to Teaching and Learning
Educators should use physical objects such as buildings, fences in the school; bore holes etc to identify fixed capital and wheelbarrows, animals, tractors etc as movable capital. Educators should draw all the concepts centered around capital e.g. net-worth, assets, liabilities etc and assist learners to make distinction between those concepts. Educators are advised to solicit help from educators who are teaching accounting. Legislation issues are still a great challenge to our learners. Educators are advised to invite officials from the Department of labour to address these issues in their schools.
(**d) Describe any other specific observations relating to responses of learners**
Learners ignored the data and gave their own answer. E.g. question 3.4.2
(e**) Any other comments useful to teachers, subject advisors, teacher development etc.**
Educators in consultation with their subject advisors should work in collaboration with other stakeholders such as the Department of labour, Department of Agriculture etc to address issues that are challenging for the classroom educators to deal with. E.g. the issue of different interpretations of the labour laws.
QUESTION 4
(**a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?**
The performance of learners in this question was generally good. 55% of the learners obtained 14 marks and above, out of 35(40%and above). The performance of learners in the following sub questions: - 4.1.1, 4.3.2 and 4.6.3 is highly commendable. More than 60% of the sampled learners who answered those questions got the total in the questions. 4.1.1 Although the performance of learners in this question was good, some candidates got the genotypes of the parents wrong. The reason could be that they did not know the genetic symbols (For male and for female). Question 4.3.2 and 4.6.3.These were the most popular questions. The outstanding performance of the two questions could be attributed to the fact that learners drew answers directly from the scenario.

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

The following questions were challenging to learners: - 4.1.2, 4.1.3, 4.1.4, 4.2.3, 4.3.1, 4.4.1, 4.4.2, 4.5, 4.6.2.

Question 4.1.2

Most learners got this question wrong. They were giving “co-dominance” as a response instead of “incomplete dominance”. This was an indication that learners could not differentiate between co-dominance and incomplete dominance.

Question 4.1.3

Learners could not provide the reasons for incomplete dominance even though they wrote co dominance in question 4.1.2 above, but they could not motivate for the type of dominance they have chosen.

Question 4.1.4

The majority of learners gave sex cells, ovum, and gametes as a response to this question. They failed to identify that the question was asking for an organ and not the sex cell.

4.2.3 Most learners failed to identify the heterozygote offspring, hence they could not calculate correctly.

4.3.1 Most learners failed to identify that the heading or title of the scenario was the answer and the” word “re-introduce” as the key word to the other alternative response. It was evident that, reading, analysis and interpretation of scenario is still a challenge to our learners.

Question 4.4.1

Most learners could not interpret the illustration correctly as a result they failed to identify the three ancestors ;-5, 7 and 13. Failure to read, analyze and interpret the data provided is the main reason for poor performance in this question.

Question 4.4.2

Learners were confusing advantages of upgrading with those of other breeding systems E.g. hybrid vigour in cross breeding,

Question 4.5

Most learners did not know the methods of selection but gave methods of breeding as the response. E.g. family breeding for family selection. Some learners also gave different breeding methods E.g. line breeding, inbreeding as responses to the question.

Question 4.6.2

Learners failed to identify the correct responses applicable to the questions from the scenario. They gave responses that were applicable to only 4.6.1.E.g. improved cultivars instead of vitamin enriched.

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

Question 4.1.2
Educators should design practical activities where these concepts would be applied. E.g. making models with colour or paintings to demonstrate a clear difference between incomplete dominance, co-dominance and complete dominance.

Question 4.1.4
Educators should assist the learners to differentiate between cells, organs, tissues and systems through drawings, labels etc.

Question 4.3.1
Educators should emphasize that, headings of scenarios are part of scenarios and that questions and correct responses could be based on them.

Question 4.4.1
Educators should assist learners by drilling them to interpret flow charts, identifying the sources of movements, direction of movements and end of movements.

Question 4.4.2 and 4.5
Educators should make classroom posters showing the differences in breeding systems and selection methods. E.g.

BREEDING SYSTEM	SELECTION METHOD
Cross breeding Line breeding	Family selection Pedigree selection

Question 4.6.2
Educators should drill learners in different situations to identify correct responses from different scenarios.

Educators should enforce compulsory reading for each lesson. E.g. it could be analysis of case study, scenario related to the topic under discussion.

The only way to improve performance on genetics is for educators to implement strategies they have gathered in workshops.

Educators of neighboring schools to help one another on specific topics and this will promote team teaching. E.g. sharing of problems and good practices.

Educators should use a variety of textbooks, journals, magazines to develop different assessment tasks.

Excursions to neighboring farms, Agric schools and universities may expose both learners and educators to various breeding systems

(**d) Describe any other specific observations relating to responses of learners**
Educators should refrain from outsourcing the section on genetics to Life Science educators and there are differences in terminologies used in the two learning areas. It was observed that educators failed to complete the syllabus because learners performed poorly in last topics in the work schedule. Educator should cover the syllabus and do effective revision in order to improve performance.
(e) Any other comments useful to teachers, subject advisors, teacher development etc.
Educators should use any of the following activities to consolidate classroom lessons when and where they fit in:- practical illustrations, clay modelling, visits to breeding depots . Educators to be workshoped on specific genetic topics e.g. G.M.O , Mendel's principles e.g. incomplete, complete and co-dominance.

SIGNATURE OF CHIEF MARKER: _____