Province of the
EASTERN CAPE
EDUCATION

ASSESSMENT & EXAMINATIONS
Bundy Park, Schornville, KWT * Private Bag X 4571, KWT, 5600
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NSC 2011 CHIEF MARKER'S REPORT

SUBJECT	LIFE SCIENCES

PAPER	2 (VERSION 2)

DATE OF EXAMINATION:	21.11.2011	DURATION:	2½ hours

SECTION 1:

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

The general overview of learner performance is very poor. From a random sample of 100 scripts the total mark is 47.5/150(31.6%-Level 2).The part-time learners thus performed very poorly in this question paper. Possible reasons for this poor performance are:

- Many are most probably working
- These learners are not taught
- They seek help from their ex-teachers
- They most probably study very close to the exams
- They are not well-prepared
- The environments they come from may not be conducive to them achieving good results

The following Section 2 provides a detailed analysis of each question and possible reasons why these learners are not performing to the desired standard .

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?
Learner performance in this question (sample of 100 scripts) ranged from 4/50 to 38/50. The average mark is 18.8/50(37.6%).The question was poorly answered by the majority of our part-time candidates
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.

1.1 These multiple-choice questions were fairly straight forward but many learners did not know the correct answers. The module on Diversity, Change and Continuity including Evolutionary Theory remains largely misunderstood by the majority of learners

- 1.1.4/1.1.5 when many possibilities and a sketch were given respectively was poorly answered by many learners. Interpretation of the sketch in 1.1.5 was sedimentary disappointingly lacking with most learners.

1.2 Expected learners to give biological terms for five different descriptions .It is obvious that terminology remains a problem Language usage for the descriptions could be easily understood but many candidates got it incorrect .Many learners gave the answer "population" for 1.2.3 and "speciation" for 1.2.5 and "pollutants" for 1.2.2

1.3 Needed learners to respond to Column I/ Column II type questions but most of them probably did not even understand the instructions given. A very fair question was thus not clearly understood by most learners

1.4 Expected Learners to glean information from a graph and apply their knowledge to answer questions 1.4.1 to 1.4.4 The interpretation of graphs is problematic for most candidates that sat for this exam. Some learners did, however, did fairly well in this question

1.5 Is a very good question Learners had to use graph and a result table to draw a comparison between oxygen and waste in water samples within a river. Question 1.5.2 was very poorly answered as learners had to apply content knowledge on prescribed investigations in order to give the correct answers. Many learners lack the necessary investigative skills. Common mistakes made by the learners in this question was the name the two substances "oxygen and waste" as the answer 1.5.4 was also poorly answered as learners could not describe the relation between the amount of the two substances from the graph

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

Suggestions to improve learning and teaching are :

- Lists of biological terms with definitions/descriptions to be given to learners to study
- Graphs taught to learners giving both variables and drawing the correct axes
- Learners have to look at diagrams and questions with two variables in order to apply the correct content knowledge
- Evolutionary theory has to be taught with the use of DVD's or CDs

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

Most of learner responses are found in (b)

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

- School based assessment should follow curriculum guidelines strictly
- Cluster meetings should take place regularly to share "best practices"
- Subject information sharing is critical due to periodic curriculum changes

QUESTION 2

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

This question was very poorly answered. More than 90%(in a random sample of 100scripts) of the learners achieved less than 10/30 for this question. The average mark is 4.2/30(13.9%).

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

themselves properly in answering 2.1.1and 2.2

2.1 A very interesting question that tests learner understanding of evolution. The answers of learners should reflect a logical sequence of events over a time period

- 2.1.1 Many learner answers included global warming, continental drift and natural selection
- 2.1.2 Descriptions by many learners were very unclear with common answers being that "the water level was high 250 million years ago and low 100 million years ago"

2.2 Expectations from learners to this easy question did not materialise. A concrete understanding of random assortment/arrangement of chromosomes was seriously lacking.
The mark allocation for this question(10 marks) was probably too much as learner explanation demanded more information. The part-time candidates could not express themselves properly in the English language(mainly second language part-time candidates adversely effected the way they express themselves in answering question 2.2.1 and 2.2) Question 2.2.2 was totally not understood by many learners and these answers were very poor

2.3 Many learners would give one difference between Lamarck and Darwin's theory but not the second difference. Many learners gave a lot of examples of snakes and giraffes which did not make much sense

2.4 Most learners did very poorly in this question. Some attempted to answer this question but were unsuccessful. Many learners did not even attempt to answer thus indicating a lack of study.

2.5 This question was answered very poorly. Learners exhibited very little or no knowledge of inbreeding.

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

More emphasis should be placed by Life Science teachers on learners knowing biological terms and interpreting data in any form e.g. diagrams, sketches,flowcharts,tables,graphs etc.

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

- Many of the learner responses are in (b)

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

- Teachers should be developed in forms of workshops, joint brainstorming sessions, sessions with subject experts and further studies in this subject
- Teachers must try to do much more work related with planning for an investigation with the learners.

QUESTION 3

On a more specific level, when delving into the reasons for poor learner performance in this question, one sees that:

3.1 This question is a very simple one. The most learners drew a table (3.1.1) and could determine one or two visible differences between the two skeletons. More visible (especially those of the teeth) were not part of the final memorandum which could have disadvantage learners with a few marks

- 3.1.2 Also saw learners successful with one or two characteristic we share with other primates

3.2 A fair question which many learners could answer properly. Definitions of gene mutations neutral and lethal mutations were not answered well by the majority of our learners

3.3 A practical investigative question very poorly answered by most learners. Learners have very little knowledge on what a dependant and an independent variable . As a result the formulation of a hypothesis is not easily expressed by most part-time learners. Most learners are unfamiliar with practical experiments and thus could not answer 3.3.2/3.3.3 and 3.3.4.

(c) Provide suggestions for improvement in relation to Teaching and Learning
1. Formulation of the hypothesis has to become a reality in the majority of our schools 2. Many different examples of hypothesis type questions has to be provided in schools where this problem persists 3. Language improvement is a necessity so that learner can begin to read and understand what is expected from them 4. Group teaching can be initiated with schools close to each other to share “best practice techniques”
(d) Describe any other specific observations relating to responses of learners
Examples includes those quoted under (b)
e) Any other comments useful to teachers, subject advisors, teacher development etc.
• Subject advisors to run workshops around planning for an investigation, stating of the hypothesis, identifying variables and stating which one is the dependant and independent variable. • Many comparative diagrams should be provided to allow learners more practice with the application of these questions.
On a more specific level, when delving into the reasons for poor learner performance in this question, one sees that: 3.1 This question is a very simple one. The most learner drew a table (3.1.1) and could determine one or two visible differences between the two skeletons. More visible (especially those of the teeth) were not part of the final memorandum which could have disadvantages learners with a few marks. • 3.1.2 Also saw learners successful with one or two characteristic we share with other primates 3.2 A fair question which many learners could answer properly. Definitions of gene mutations neutral and lethal mutations were not answered well by the majority of our learners 3.3 A practical investigative question very poorly answered by most learners. Learners have very little knowledge on what a dependant and an independent variable . As a result the formulation of a hypothesis is not easily expressed by most part-time learners. Most learners are unfamiliar with practical experiments and thus could not answer 3.3.2/3.3.3 and 3.3.4.
(c) Provide suggestions for improvement in relation to Teaching and Learning
5. Formulation of the hypothesis has to become a reality in the majority of our schools 6. Many different examples of hypothesis type questions has to be provided in schools where this problem persists 7. Language improvement is a necessity so that learner can begin to read and understand what is expected from them 8. Group teaching can be initiated with schools close to each other to share “best practice techniques”
(d) Describe any other specific observations relating to responses of learners

QUESTION 4
(a) General comment on the performance of learners in the specific question. Was the question well answered or poorly answered?
Learner performance in this question ranged from 0/40 to 31/40.Most learners achieved marks ranging from 12/40 to 19/40. The average mark is 16.7/40(41.7%). Question 4.1 was fairly answered but 4.2 and 4.3 was poorly answered. One has to commend many of our teachers who are teaching part-time candidates on drawing graphs from a tabular set of results Many learners thus answered question 4.1 and 4.1.4 fairly well but not questions 4.1.2 and 4.1.3
(b) Why was the question poorly answered? Also provide specific examples, indicate common errors committed by learners in this question, and any misconceptions.
4.1 Many learners answered 4.1.2 and 4.1.3 very poorly. Learner understanding of the dependant variable is seriously lacking. Many learners could not draw a comparison between population size and the amount of pollution 4.2 Many learners did poorly in 4.2.1 and 4.2.4. Both these questions expected candidates to use content knowledge and apply it directly to finding an answer. They did not know the meaning of biodegradable and non-biodegradable products as well as examples .Most learners did not know the consequence of dumping waste into our environment 4.3 A good essay question poorly answered by most learners. Essay writing for second language learners remains a problem. Choices in the memorandum for management strategies were limited and learners did not know how to express themselves in a way reflected in the memorandum. They thus lost marks as a result. Many learners could only provide one source of water pollution and one effect of water pollution.
(c) Provide suggestions for improvement in relation to Teaching and Learning
1. Applying learner knowledge to the different data type and essay type questions must be emphasised 2. Learner support material, being provided to a certain extent in the Province currently, with common types of questions and answers(examination emphasis) has to be given in poorly performing schools and districts 3. Language improvement is a necessity as to ensure that our learners can begin to read and understand what is expected from them
(d) Describe any other specific observations relating to responses of learners
Specific observations are mentioned previously in (b)
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SIGNATURE OF CHIEF MARKER: _____