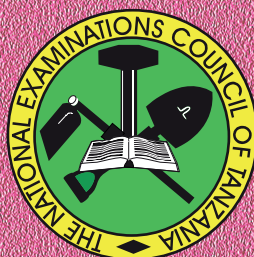


THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



**EXAMINERS' REPORT ON THE PERFORMANCE
OF CANDIDATES CSEE, 2012**

**033 BIOLOGY
(School Candidates)**

THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA



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FOREWORD

The examiners' Report on the Performance of Candidates in Biology subject in the Certificate of Secondary Education Examination (CSEE) 2012 was prepared in order to provide a feedback to students, teachers, parents, policy makers and the public in general, on the performance of the candidates.

The Certificate of Secondary Education Examination marks the end of four years of secondary education. It is a summative evaluation, which among other things shows the effectiveness of the education system in general and the education delivery system in particular. Essentially, the candidates' responses to the examination questions is a strong indicator of what the education system was able/unable to offer to the students in their four years of secondary education.

The analysis presented in this report is intended to contribute toward the understanding of some of the reasons behind the performance of the candidates in Biology subject. The report highlights some of the factors that made the candidates fail to score high marks in the questions. Such factors include: failure to express themselves clearly in English language, lack of the basic knowledge on Biological concepts and poor essay writing skills. They also experienced difficulties in answering the questions that required practical experience as observed in questions 3 and 9. Furthermore, some of the candidates were unable to identify the demand of the questions. The feedback provided will enable the education administrators, school managers, teachers and students to identify proper measures to be taken in order to improve the candidates' performance in future examinations administered by the Council.

The National Examinations Council of Tanzania will highly appreciate comments and suggestions from teachers, students and the public in general, that can be used for improving future Examiners' Reports.

Finally, the Council would like to thank all the Examination Officers, Subject Teachers and all who participated in the preparation of this report. We would like also to express sincere appreciation to all staff members who participated in analyzing the data used in this report.



Dr. Charles E. Msonde
Ag. EXECUTIVE SECRETARY

1.0 INTRODUCTION

The report on the Certificate of Secondary Education Examination (CSEE) 2012 033/1 Biology paper 1 is based on analysis of the candidate's performance in the examination. The examination assessed candidates' biological competences as stipulated in 2010 syllabus.

The paper is comprised of thirteen (13) questions categorized into three sections namely section A, B and C. Section A was composed of multiple choice and matching items, each carried 10 marks. Section B contained 8 structured short answer questions each with parts (a) and (b) and section C consisted of 3 essay type questions. Questions in sections A and B were compulsory while in section C candidates were required to attempt 1 question only.

The total number of candidates registered for Biology examination CSEE 2012 was 408,542, of which 393,743 sat for the examination. Results showed that the general performance of candidates in Biology was poor, as only 120,286 (32.71%) of the candidates passed the examination as compared to CSEE 2011 where 339,330 candidates sat for 033/1 Biology paper 1 and 156,085 (46.41%) passed the examination.

This report highlights candidates' performance in relation to examination questions requirements and indicates errors made by the candidates in answering these questions. It also analyses the performance of candidates in each question. Sample of extracts of candidate's answers are provided to illustrate respective cases. It is expected that this report will provide a useful feedback to teachers, students and other education stakeholders to enable them identify areas where candidates have learning difficulties and also, to take appropriate measures in improving teaching and learning of Biology subject.

2.0 ANALYSIS OF THE CANDIDATES' PERFORMANCE PER QUESTION

2.1 SECTION: A

2.1.1 Question 1: Multiple Choice Items

The question was consisted of ten multiple choice items carrying a total of ten marks. The question items were drawn from various topics including Movement, Excretion, Concept of Health and Immunity, Classification of living things, Growth, Gaseous exchange and Respiration, Nutrition and Regulation.

A total of 393,807 candidates attempted this question, of which 2.8 percent scored 0, 75.6 percent scored between 1 and 5 and 21.6 percent scored between 6 and 10 out of 10 marks allocated to this question. This implies that the performance of the candidates in this question was poor.

The items that were not answered well by the candidates included items (v), (ix) and (x). Item (v) required the candidate to select the correct parts of the plant in which the most active growth regions are found. Most of the candidates selected “stems and root hairs” instead of choosing “stem and root apices” which was the correct answer. This shows that the distinction of the two terms that is root hairs and root apices were not clearly understood by the candidates. This indicates that they either lacked enough knowledge on plant growth or did not revise on this topic. Root hairs are out growth of the root concerned with increasing surface area for water and mineral salt absorption; and root apices are tips of roots which undergo cell division to enhance growth.

Item (ix) required candidate to select the correct type of vitamin, synthesized due to sunlight energy stimulation in human skin. Few of the candidates selected “vitamin A” which was an incorrect alternative. The correct answer was “vitamin “D”. Vitamin A deals with eyes vision while vitamin D deals with calcium and phosphorus absorption necessary for the formation of bones.

Item (x) required candidates to select the mechanism used to correct the rise of human body temperature. The correct answer was “dilation of the skin arteries and sweating”. Few candidates selected “constriction of the skin arteries and sweating”. The failure of candidates to select the correct answer was due to misconception between constriction of skin arteries and dilation of the skin arteries thinking that they represent the same mechanism but this was incorrect. Constriction of the skin arteries means skin arteries’ lumen is reduced and little blood passes through it while dilation of the skin arteries means skin arteries widen and more blood pass through it.

2.1.2 Question 2: Matching Items

The question was consisted of ten matching items carrying a total of 10 marks. Candidates were required to match the biological phrases given in List A with the corresponding terms in List B.

A total of 393,807 candidates attempted this question, of which 36.2 percent scored 0, 60.4 percent scored between 1 and 5 and 3.4 percent scored between 6 and 10 marks out of 10 marks allocated to this question. This implies that performance on this question was very poor.

Items which were not answered correctly by most of candidates were (v), (vii) and (ix). Item (v) required the candidates to find the correct term in List B which matched with the following phrase ‘Control the intensity of the light entering the eye’ in List A. Most candidates matched it with the term ‘cones’ instead of ‘iris’ which was the correct answer. This implies that the candidates could not differentiate the role of ‘iris’ from ‘cones’ since ‘cones are sensitive to light of high intensity’ whereas ‘iris controls the intensity of light entering the eye’.

Item (vii) required candidate to match the term ‘correct short sight’ with ‘Diverging lens’, but most of the candidates matched it with the term ‘Rods’ which was wrong. This answer suggests that, candidates did not know the meaning of a word ‘Rods’, these are cells sensitive to light of low intensity and they have nothing to do with short sightedness.

Item (ix) required candidates to find a word in List B which matched with the phrase “Helps to refract the light into the eye”. The correct match was “cornea”. A good number of candidates provided variety of wrong matches. The failure of candidates to pick the correct answer indicates that, candidates had inadequate knowledge on the parts of the eye and their functions.

2.2 SECTION: B

2.2.1 Question 3: Introduction to Biology

The question was comprised of two parts (a) and (b). In part (a) candidates were required to outline four features which distinguish a Biology Laboratory from other school facilities. Part (b) of the question required the candidate to outline four steps involved in using a microscope. The question carried a total of 8 marks.

A total of 393808 candidates attempted this question of which 68.1 percent scored 0, 31.4 percent scored between 1 and 4 marks and 1.5 percent scored between 5 and 8 marks out of 8 marks allocated to that question. This implies that the question was poorly performed.

Candidates who performed poorly failed to understand the question’s demand. For example in part (a), instead of outlining features which distinguish a Biology laboratory from other school facilities they outlined laboratory rules which were out of the question’s demand. Also, in part (b) some candidates outlined the parts of the microscope, some stated the use of microscope and how to keep the microscope while some drew the diagram of the microscope

instead of outlining four steps involved in using a microscope. The extract 3.1 is the sample of the poor response.

Extract 3.1

03a	i/ Don't many any noise in the biology Laboratory.
	ii/ Don't make smooking in the biology Laboratory.
	iii/ Don't make any drink in the biology Laboratory.
	iv/ Don't many eat in the biology Laboratory.
3b	i/ Microscope were used in heighat air.
	ii/ Microscope are used in heighat air.
	iii/ Microscope are used in the schools.
	iv/ Microscope are used in heighat as many any things.

Extract 3.1 shows a sample answer of a candidate who scored poorly in this question. The candidate stated laboratory rules which were out of question demand. In addition, the language used by the candidate was not clear. Thus the candidate scored zero marks.

However, 0.2 percent of the candidates was able to meet the demand of the question and scored between 7 and 8 out of 8 allocated marks. The extract 3.2 is the sample of a good answer.

Extract 3.2

- 3 (a) The features are;
- (i) Biology Laboratory have microscopes while other school facilities have no microscopes.
 - (ii) Biology Laboratory have specimens.
 - (iii) Biology Laboratory have Models. For example a model of human skeleton.
 - (iv) Biology Laboratory have Specific Chemical reagents. For example the millon reagent, benedict solution, Sudan III and also Iodine solution.
- 3 (b) i) Put a specimen to be observed in the microscope stage.
- ii) ~~Rotate~~ Replace the eye piece lens in position so as to have the focus of a specimen.
 - iii) ~~Rotate~~ move the coarse adjustment knob in order to have a view of a specimen.
 - iv) Finally rotate/move the fine adjustment knob so ~~has~~ as to have a fine focus of a given specimen.

Extract 3.2 shows responses of a candidate who outlined the four features which distinguish Biology laboratory from other school facilities clearly and correctly. The candidate also outlined correctly the four steps involved in using the microscope. The correctness of the answers made the candidate to score eight out of (8) marks.

2.2.2 Question 4: Safety in Our Environment

The question was divided into two parts (a) and (b). In part (a) the candidates were required to define (i) First Aid Kit, (ii) Risks (iii) An accident (iv) Poisoning. Part (b) required the candidates to outline four procedures of giving First Aid to a person who has been stung by a bee. The question carried a total of 8 marks.

A total of 393,808 candidates attempted this question of which 48.1 percent scored 0, 49.5 percent scored between 1 and 4 and 2.4 percent scored between 5 and 8 marks out of 8 marks allocated to this question. This implies that candidates' performance in this question was very poor.

Candidates who performed poorly in this question lacked enough knowledge about the question and provided wrong answers. For example, in part (a) some wrote "Risk is bad behavior in the society", and others wrote "Risk is drug abuse, alcoholism". However, the correct definition for the term 'Risks' is a possibility that something bad or dangerous may happen.

In part (b) the candidates lacked enough knowledge about the question asked. The candidate ended up outlining one out of the four required procedures of giving First Aid to a person who has been stung by a bee such as "sending the person to the hospital"; while others failed to provide any response. Extract 4.1 illustrates candidate's sample of poor responses.

Extract 4.1

4a	i) First Aid kit is the small box which 2 biological equipment are kept.
	ii)
	iii)
	iv)
	v)
	vi)
4b	i) To lay down the victim straight.
	ii) shake place where stung.
	iii) When is on the hands or legs or fingers - shake and type the piece of lamina left and right of the place to minimize the movement of poison.
	iv) Wash the wound with the iodine tincture and go with the victim to the hospital to see more.

In extract 4.1 the candidate lacked enough knowledge about the question. The candidate provided wrong definitions for all terms in part (a). In part (b) the candidate outlined wrong procedures for providing first aid to a person who has been stung by bee and scored 0 mark out of 8 marks which were allocated for question.

However, 0.2 percent of the candidates were able to meet the demand of the question and scored between 7 and 8 out of 8 allocated marks. The extract 4.2 is the sample of a good answer.

Extract 4.2

4a/	i/ First Aidkit is the small box that contain all instrument used in first aid including antibiotic medicine and other necessary equipments such as bandage.
	ii/ risks - is the behaviour that is not accepted by people in the society, this include alcoholism, drug abuse, prostitution.
	iii/ An accident: - is a sudden injury that is unexpected to happen to a person, and it can not be prevented such as snake bite, bone dislocation, fire.
	iv/ Poisoning. - is the action of harmful chemical substance to have negative effect in the cell and may easily cause death.
b/	First Aid to a person who has been stung by a bee.
1/	Press around the stung area with two fingers to remove the sting that has poison.
2/	Neutralize the stung area by running sodium hydrogen carbonate (Alkaline) to remove the poison for some seconds.
3/	close/cover the wound with a pad accompanied with a pressed cold ice, in order to prevent further effect.
4/	Take a person to the hospital for medical checkup if signs like vomiting and swelling appear on his/her body.

In extract 4.2 the candidate gave wrong response in part (a) (ii) by defining risk behavior instead of risk. Despite this response the candidate had enough

knowledge about the topic and used clear language to defined First Aid kit, an accident and poisoning correctly in part (a). In addition, the candidate systematically and accurately outlined the four procedures of giving First aid to person who has been stung by a bee and hence managed to score seven (7) marks out of 8 marks allocated to this question.

2.2.3 Question 5: Balance of Nature

The question was comprised of two parts (a) and (b). In part (a) the question required the candidates to describe (i) Decomposers, (ii) Producers and (iii) Parasites. For part (b) the candidates were required to use examples to explain briefly on how comparative embryology supports the idea of organic evolution. The question carried 6 marks.

A total of 393,807 Candidates attempted this question, of which 77.8 percent scored 0, 21.5 percent scored between 1 and 4 and 0.7 percent scored between 5 and 6 marks out of 6 marks allotted to this question. This implies that candidates' performance in this question was very poor.

Candidates who performed poorly had inadequate knowledge about the question so they failed to describe the ecological terms provided. Also, the candidates failed to explain how comparative embryology supports the idea of organic evolution. For example in part (a) they wrote “decomposer is lion, parasite which suck blood e.g. Malaria parasite”, “producer is animal which give new one”. The expected correct answers were: decomposers are saprophytic bacteria and fungi that break down the remains of dead organic matter into simple inorganic substances; Producers are organisms that are able to make their own food using simple inorganic substance; Parasites are organisms that depend on shelter and/or food from the host organisms. Extract 5.1 illustrate candidate's sample of poor answer.

Extract 5.1

5a: Decomposers are the organism that which are here
so as to gain back something
ii Producers are the organism which are here as food
material to other
iii Parasites are small microscopic organism

b Comparative embryology support the idea of organic
evolution by on how the offspring are made and
how they live independing embryo embryo for example
human being give birth after nine month so the child which
is in the stomach is getting the food through embryonal cord

In extract 5.1 the candidate lacked knowledge on both ecology and evolution thus, provided unclear and incorrect responses. In part (b) the candidate explained how embryo feeds before birth. This shows that the candidate did not understand the concept of comparative embryology

However, 0.2 percent of the candidates scored 6 out of 6 marks allocated to this question. These candidates were able to respond according to the demand of the question. Extract 5.2 illustrates candidate's best answer.

Extract 5.2

5(a) I. Decomposers are organism in the ecosystem which break down the dead organic matter.

II. Producers are organism in the ecosystem which manufacture their own food by using simple substance like carbon dioxide and water in the presence of sunlight. Normally are green plants.

III. Parasites are organism which depend on the tissue of another organism to get its basic needs like food and shelter. e.g. Tapeworm

5(b) Comparative embryo embryology is the evidence which use the growth of embryo to support the idea of organic evolution.

During the embryo stage, all embryo of chordata are similar. Both have gill cleft and anal tail.

But when the growth continues the differences start to be observed. In other organism like man the gill cleft and anal tail start to disappear.

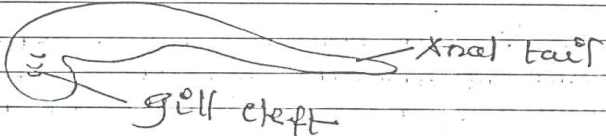
But others like cow remain with anal tail together with fish which remain with gill cleft.

This is the evidence that once upon organism was the same. And also proof that these organism have the same origin.

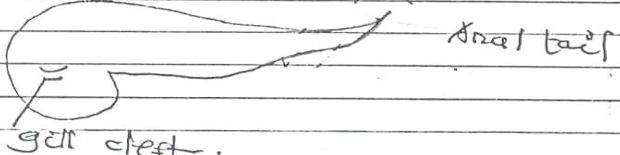
But due to organic evolution appear different as shown in the growth of embryo.

STRUCTURE OF EMBRYO

Man



Whale



In extract 5.2 the candidate scored full marks. The candidate had adequate knowledge about the question and good understanding of the question demand, therefore described the ecological terms provided correctly and provided correct explanations on evidences of organic evolution.

2.2.4 Question 6: Transportation of Materials in Living Things

The question was comprised of two parts (a) and (b). In part (a) candidates were required to outline three factors affecting transpiration and in (b) to state three significance of transpiration. The question carried 6 marks.

A total of 393808 candidates attempted this question, of which 54.4 percent scored 0, 37.4 percent scored between 1 and 4 marks and 8.2 percent scored between 5 and 6 marks out of 6 marks allotted to this question. This implies that candidates performed poorly in this question.

In part (a) candidates who scored poorly failed to identify the question demand, instead of outlining the factors affecting transpiration; they outlined the factors which affect photosynthesis and respiration. In part (b) the candidates failed to state the significance of transpiration for that case they skipped the part. Some who tackled this part mixed concepts of transpiration with that of transportation. For example one of the significance wrote was 'transport of food'. Extract 6.1 illustrates the candidate's sample of poor answers.

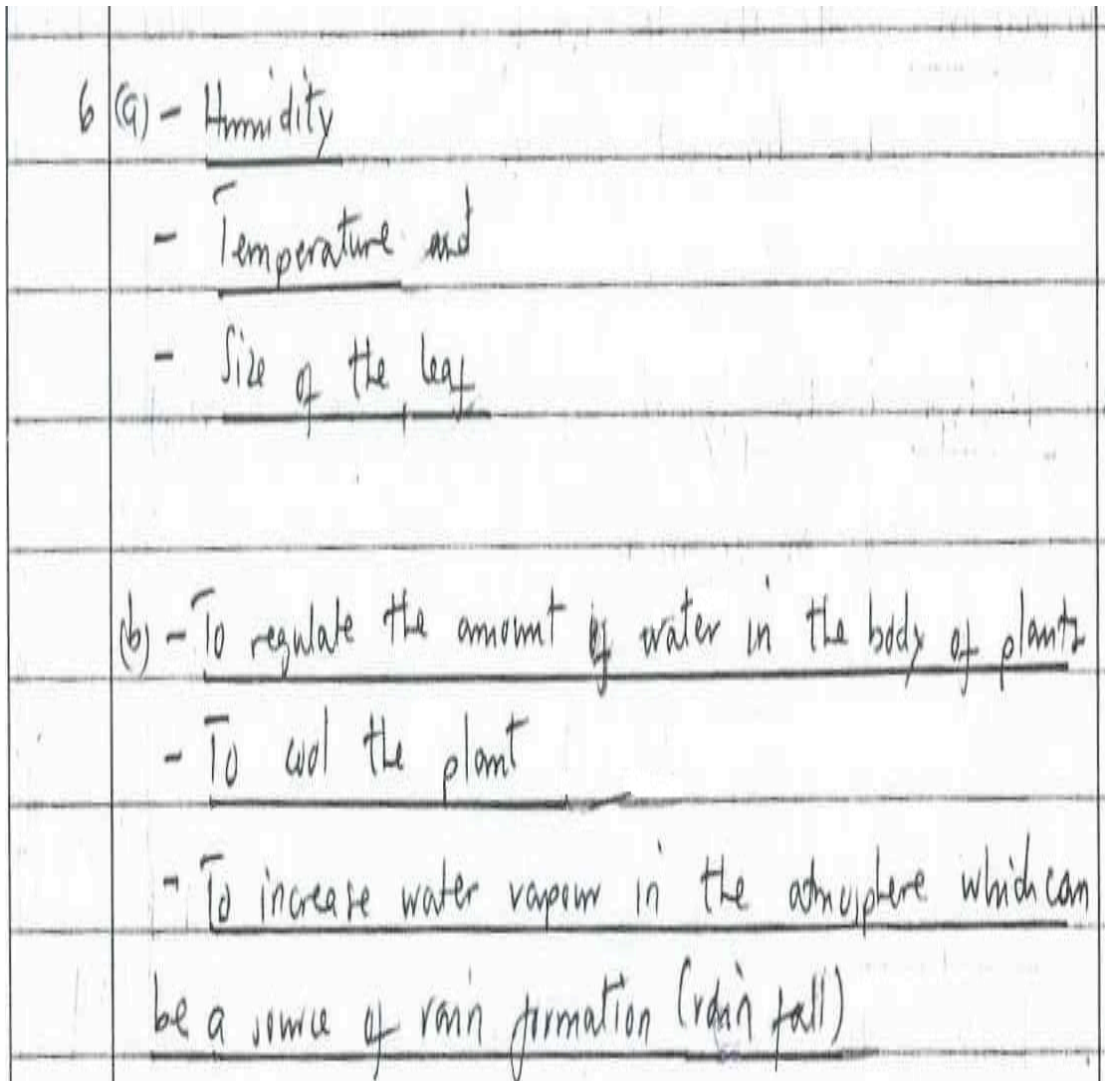
Extract 6.1

6.	(a)
	(i). Lack of water
	(ii). Diseases
	(iii). Genetic disorder
	(b).
	(i) Transpiration helps to transport and food substance to all parts within the body.
	(ii) Transpiration helps to provide the energy within the body through transported food.
	(iii) Transpiration helps to repair the damaged parts of the body.

In extract 6.1 the candidate failed to understand the question's demand and mixed up the concept of transpiration with that of transport. For example in part (b) the candidate wrote 'transport of food substance in the body' as one of the significance of transpiration.

There were few candidates (0.7%) who had the highest score of 6 marks. Those candidates met the demand of the question. Extract 6.2 illustrates candidate's best answer.

Extract 6.2



In extract 6.2 the question was excellently done. The candidate was brief and precise in providing the demanded points. For example factors which affect transpiration were humidity, temperature and size of the leaf in part (a); In part (b) the candidate managed to state well the significance of transpiration.

2.2.5 Question 7: Genetics

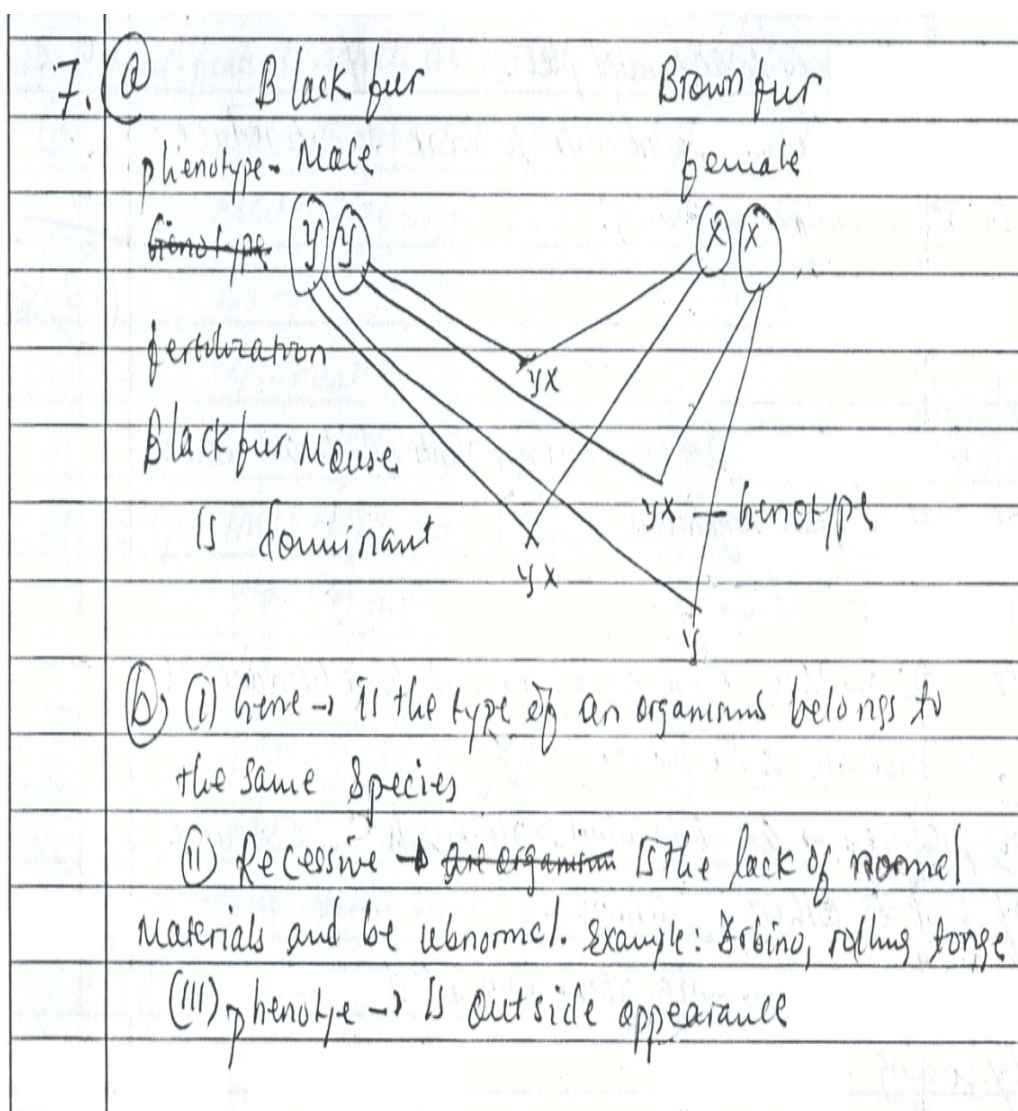
The question was composed of two parts (a) and (b). In part (a) the question stated, that; “in the experiment, pure breed (homozygous) black fur mouse (male) was mated with a pure-breed brown fur mouse (female). The gene for black fur colour was dominant over the gene for brown fur colour”. The candidates were required to use crosses to show the possibilities of the results

in the first filial generation. In part (b) the candidates were required to explain the meaning of (i) Gene, (ii) Recessive and (iii) Phenotype. The question carried 8 marks.

A total of 393,809 candidates attempted this question and the general performance was poor as 58.8 percent scored 0, 28.4 percent scored between 1 and 4 marks and 12.8 percent scored between 4 and 8 marks out of 8 marks allocated to this question.

Candidates who scored low marks had partial knowledge about Genetics. Thus, the crosses that the candidates illustrated were not proper. Some of them used punnet square chart instead of diagramming crosses as the question required while others used wrong labels on diagramming crosses in part (a). In part (b) some of wrong definitions were provided by candidates. For example they wrote (i) Gene is study of Genetics, and some wrote “Gene are gamete from male during reproduction. The responses indicated that the candidates lacked knowledge on genetics. Extract 7.1 illustrates candidate’s sample poor answers.

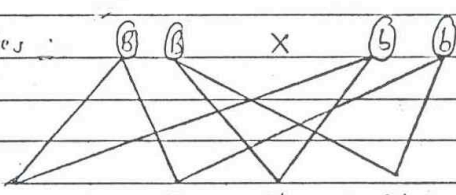
Extract 7.1



Extract 7.1 shows a sample of poor response where the candidate lacked enough knowledge of genetics and therefore used wrong genetic symbols and wrong labels in part (a) of the question. In part (b) all answers provided were wrong.

Candidates who scored 8 out of 8 marks were 1 percent. These candidates responded to the question accordingly. Extract 7.2 illustrates this.

Extract 7.2

7	<p>(a) <u>solution</u>;</p> <p>- Let "B" being the gene for black fur colour and "b" the gene for brown fur colour.</p> <p>∴ Homozygous black fur mouse is represented by "BB" and pure breed brown fur mouse by "bb".</p> <p>Parents : (BB) × (bb)</p> <p>Gametes : B B × b b</p>  <p>F₁ : Bb Bb Bb Bb</p> <p>∴ From the crosses we see that the first filial generation all the mouse are of black fur because the gene of black fur is dominant over the gene of brown fur colour.</p>
7	<p>(b)</p> <p>(i) Gene - This is the unit of inheritance of organism located in the chromosome.</p> <p>(ii) Recessive - This is the gene/trait which fails to express itself in the presence of other gene/trait.</p> <p>(iii) Phenotype - This refers to the physical/body appearance of an organism.</p>

Extract 7.2 shows a sample of good response of a candidate who had adequate knowledge about the question and therefore managed to use perfect crosses to show the possibilities of the results in the first filial generation. In addition the candidate was so smart and accurate on defining the terms gene, recessive and phenotype.

2.2.6 Question 8: Growth

The question was composed of two parts (a) and (b). In part (a) the candidates were required to define (i) Growth and (ii) Intercalary growth while in part (b) the question required the candidates to explain briefly the three factors that affect growth and development in humans. This question carried 8 marks.

A total of 409,526 candidates attempted this question and the general performance was poor as 42.8 percent scored 0, 49.1 percent scored between 1 and 4 marks and 8.1 percent scored between 5 and 8 marks out of 8 marks allotted to this question.

For those candidates who performed poorly some of them lacked knowledge on growth and provided wrong responses. Examples of wrong responses were (i) “Growth is a movement of organisms from time of birth to death”. In part (b) the responses written by most of candidates were wrong as they failed to identify the demand of the question. The question was specific to human beings but the candidates generalized their answers to both animals and plants. For example, they mentioned the wrong factors which affect growth and development in humans such as “PH, Temperature, soil condition, air, climatic conditions and sun light”. Extracts 8.1 illustrates candidate’s sample of poor answer.

Extract 8.1

Q(a)	To define the following. i) Growth. Refers to the changes from low to high level whereby an organism grows due to the availabilities it gets. This quantity of growing gives the chance to the individual to obtain it needs.
	ii) Intercalary growth. This is the kind of growth whereby it is done internal the body due to the growing up of some organs in the body.
(b)	Three factors affecting growth. Food taken in the body. There is some kind of food which is taken in as the result it is harmful in the body. So growth is affected in that way. Environment. This affects the growth and development of an organism, whereby the environment choose and select the organism for habitat. Weather Condition. This also affects the growth of an organism and its development. Some organisms face the problem of weather it can be coldness, hotness. So an individual tries to accommodate the situation which affects its development.

In extract 8.1 the candidate lacked enough knowledge about growth and therefore wrote wrong responses in all parts of the question. The candidate defined growth as the "change from low to high level where by an organism grows due to the availabilities it gets". The response was totally wrong. In part (b) the candidate failed to mention and explain factors which affect growth and development in humans.

Few candidates (1.7%) were able to mention and explain the factors that affect growth and development in human. Some of those factors were nutrition, general health of the individual and the quality of life, age, growth hormone, psychological factors such as stress and gene inheritance. These candidates score between 7 and 8 out of 8 marks allocated to this question. Extract 8.2 illustrates a sample of candidate's good answer.

Extract 8.2

8	A. i/ Growth is the irreversible increase of the size and weight of an organism.
	ii/ Intercalary growth is the type of growth which takes place in the whole over the body of an organism.
	B. Factors affecting growth and development of humans.
	(i) Genetic factors
	Is the factor which caused by genetic constitution of the generation. If the organism carry the gene of dwarf, he/she will be dwarf.
	(ii) Hormonal factor.
	The growth hormone determine the growth of an organism. That hormone when pituitary secrete it in large amount in young man. The young will be giant. While when excreted in small amount will be a dwarf.
8	(iii) Environmental factor.
	These are factors such as food. If the organism get balanced diet he/she can grow faster than who does not.

Extract 8.2 shows candidate's good answer. The candidate had enough knowledge about this question and understood the question demand. The candidate was therefore able to give clear definition of the terms growth. The same applied in part (b) the factors which affect growth and development in human was well clarified. However, for the term intercalary growth the response was incorrect in part (a). Intercalary growth is growth due to the activity of intercalary meristems, located at the base of internodes in stems.

2.2.7 Question 9: Nutrition

The question was comprised of two parts (a) and (b). Part (a) of the question required the candidate to study a diagram of the alimentary canal of a human being and then to (a) Name the parts labeled A – K. Part (b) required candidates to (i) Name the digestive juice which is produced in organ labeled B; and (ii) to mention the substances contained in the digestive juice named in (b) (i). The question carried a total of 8 marks.

A total of 393,809 candidates attempted this question, of which 26.7 percent scored 0, 63.3 percent scored between 1 and 4 and 10.9 percent scored between 5 and 8 marks out of 8 marks allotted to this question. This implies that candidates' performance in this question was very poor.

The few (26.7%) candidates scored zero due to the language problem, this was proved by their wrong spelt labels of the alimentary canal in part (a) of the question. For example; 'A' which was oesophagus/gullet was labeled as "Osophagus", Appendix was labeled as "appendex" and duodenum was labeled as "dodenum".

In part (b) (i) the digestive juice which was produced in organ labeled B was gastric juice but instead they wrote "Gastic" and (ii) the substances contained in the digestive juice named in (b) (i) were hydrochloric acid, rennin, mucus, pepsin/pepsinogen and enzymes but instead they wrote food juice and protein, which were wrong. Extract 9.1 illustrates candidate's sample of poor answers.

Extract 9.1

(9)	
	A - Oesophagus
	B stomach
	C small intestine
	D colon
	E Appendix
	F Anus
	G large intestine
	H small intestine / ileum
	I Denudation
	J Pancreatic tube
	K Anus Bladder
9(b)	Food juice
(ii)	Hydrochloric acid, water, glucose, protein

Extract 9.1 shows a sample of poor answer where by a candidate labelled the parts of the diagram of the alimentary canal wrongly with a lot of spelling mistakes. In part (b) (ii) the candidate failed to spell the contents of gastric acid correctly; e. g instead of writing hydrochloric acid he/she wrote hydrochloric acid.

However, 0.4 percent of the candidate scored 8 out of 8 marks allocated for this question due to their competence in language and knowledge on the subject matter. Extract 9.2 illustrates a sample of the best answer.

Extract 9.2

9	(a)	A - Oesophagus
		B - stomach
		C - Ileum (small intestine)
		D - Rectum
		E - Appendix
		F - Anus
		G - Colon (Large Intestine)
		H - Duodenum
		I - Pancreatic duct
9	(a)	J - Pancreas
		K - Bile duct
	(b) (i)	Gastric juice
	(ii)	- Pepsin (enzyme digest protein to peptides)
		- Mucus
		- Hydrochloric acid
		- Water

Extract 9.2 shows a sample of the best answer where the candidate had enough knowledge about the question and provided correct spelt labels to all parts of the alimentary canal with correct spellings. This candidate was able to correctly name the digestive juice which was produced in organ labeled B in (i) correctly that was "gastric juice, as well as the substances contained in the digestive juice named in (b)(i) above, which were pepsin, mucus and hydrochloric acid.

2.2.8 Question 10: Movement

The question was composed of two parts (a) and (b). In part (a) the candidates were required to explain briefly the three importance of movement in plants and animals while in part (b) the candidate were required to state any five functions of the skeleton. The question carried a total of 8 marks.

The question was answered by 393,808 candidates. Generally the performance in this question was poor as a good number of the candidate 40 percent scored 0, 43.8 percent scored between 1 and 4 marks and 16.2 percent scored between 5 and 8 marks out of 8 marks allotted to this question.

Candidates who performed poorly failed to understand the question demand. The question demanded candidates to explaining the importance of movement in animals and plant, but some candidates differentiated movement in plants from the movement in animals. For example, one stated that, movement in plants involves some parts of the body while in animals it involves the whole body. Extract 10.1 illustrates candidate's sample of poor answers.

Extract 10.2

10.	<p>Help the organism to depend themselves from the environment surrounding, according to the movement of plants and animals help to the organism to depend themselves from different organism surrounding especially plant and animals.</p> <p>Help the organism to adapting the environment surrounding, this movement of organism especially plant and animal help to be care with environment which already adapt for the search of food or pastures.</p> <p>Generally, this are the importance of the movement means the plant and animal from one place to another it help to adapting the environment, to depend themselves and also to help the organism to search the pastures and food from the movement situation.</p>
10(b)	<p>The function of the skeleton.</p> <ul style="list-style-type: none">(i) Head(ii) Limbsiii Hands(iv) Eye lids(v) Iris

Extract 10.1 shows a sample of poor responses of a candidate. In part (a) responses of the candidate were confusing as language used was not clear. In part (b) of the question the candidate failed to state the functions of the skeleton. Instead the candidate mentioned "Head, limbs, hands, eye lids and iris. These answers were quite wrong. The correct functions of the skeleton were to maintain shape, protection, allow movement, storage of minerals and the bone marrow produces red blood cells and white blood cells (granulocytes).

There were 1.2 percent of the candidates who scored full marks. Those candidates were able to meet the demand of the question. Extract 10.2 is the sample of the good answer.

Extract 10.2

10.	a) - It brings both plants and Animal to a good site of breeding (mating).
	- it directs the plants towards unilateral stimuli like photosynthesis, phototropism.
	- it helps plants and Animals to move away from negative stimuli for instance the area of shortage of water.
	b) - it protects vital organs like Heart and brain.
	- it used to store minerals like potassium and calcium.
	- It is used in formation of cells for example Red blood cells in the bone marrows.
	- it gives support in movement by attachment of other bones.
	- it gives definite shape of the body, example Compact shape of the human body.

Extract 10.2 shows a sample of good answer where candidate's responses were correct.

2.3 SECTION: C

2.3.1 Question 11: Gaseous Exchange and Respiration

This was an optional question which carried a total of 20 marks. The question required the candidates to describe the breathing mechanism in human beings. Diagrams were not necessary.

A total of 85,732 (20.9 %) candidates attempted this question, out of which 89.8 percent scored 0, 10 percent scored between 1 and 14 marks and 0.2 percent scored between 15 and 20 marks out of 20 marks allocated to this question.

Candidates who performed poorly lacked essay writing skills as they just outlined their points which were not correct. Some failed to understand the question demands as their responses were centered on the features of respiratory system. For example, some wrote that ‘it is smooth, moist and well supplied with blood’ instead of explaining the mechanism of breathing in human beings. Extract 11.1 illustrates candidate’s sample of poor answers.

Extract 11.1

11 Breathing is the process of carry oxygen and remove Carbondioxide through respiration.

There are two type of respiration which make a mechanism of respiration which are Inspiration and Expiration.

The following are the mechanism of breathing.

Rib Cage and Sternum; is contract while a relax and return to the original shape.

diaphragm; was contract - when a person taken a air while it-removes out diaphragm was relax and return to the original shape.

Volume; was increase in the- inspiration is order to make well- efficiency of air transport while

Volume was decrease in the- expiration and make a body

to turn into original shape and size

Pressure was decrease when a inspiration in order to make a well process of diaphragm and rib cage, sternum to return it the original while in the expiration pressure was increase in order to make well a process of taken and remove outside the body of Carbon dioxide

blood vessel; a blood vessel was allow a absorption of oxygen in order to transport to the body and return to the lung in order for make a well

All the above are the mechanism of breathing in order to make a well body to support live.

Extract 11.1 shows the sample of a poor response where the candidate scored 00 marks out of 20 marks allocated to this question. The candidate had misconception on breathing and respiration. Thus he/she failed to describe the mechanism of breathing in human beings. Also the candidate had poor command of English language and all explanation provided were not correct.

Few candidates (0.2%) managed to follow the format of essay writing hence scored between 15 and 20 out of 20 allocated marks. Those candidates managed to describe the breathing mechanism in human beings. Extract 11.2 illustrates a sample of a good answer.

Extract 11.2

11.	<p>Breathing is the act of taking in and out of air into the lungs and out of the lungs. Breathing enables exchange of gases in the respiratory surfaces in which through breathing in oxygen from the environment is taken into the lungs and in breathing out carbon dioxide is removed from the lungs to the environment. The mechanism of breathing in man involves inhalation and exhalation in which there are different ^{changes} events which facilitate the two processes. These process and changes that occur are described as follows.</p> <p>The following changes occur during inhalation:</p> <p>The external intercostal muscle contracts: These muscles are found in between the ribs in which they contract so as to allow movement of the ribs so as to allow air to enter the lungs.</p> <p>Relaxation of the internal intercostal muscles: These work antagonistic with the external intercostal muscles so as to also allow movement of the ribs so as to allow air to enter the lungs.</p> <p>The diaphragm contracts and flattens: This is because of the extension of the ribs outwards and so help to increase the area in the thoracic cavity so as to allow air to enter the lungs.</p> <p>Ribs move upward and outwards: This movement of the ribs enables to provide a large area for air to enter the lungs in which it is aided by the contraction and relaxation of the intercostal muscles both external and the internal.</p> <p>The volume of the thoracic cavity increases. This is due to the movement of air in the lungs in which the pressure in the lungs decreases due to the increase in volume.</p>
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11.	<p>And finally air particularly oxygen enters the lungs, and so the process of breathing in is achieved through that manner to enable the whole process of respiration in order to release energy.</p> <p>The process of breathing out in man is aided by the following changes in the respiratory surfaces:</p> <p>Relaxation of the external intercostal muscles: The relaxation enables the ribs to move inwards and downwards thus enabling air particularly carbon dioxide to be removed from the lungs that is exhaled.</p> <p>The internal intercostal muscles contract: These at muscles also enables the ribs to move inwards and downward in order to facilitate the exhalation of carbon dioxide. These 1 muscles work in an pair antagonistic so as to allow movement of the ribs.</p> <p>Ribs move downward and inwards: This is aided by the contraction and relaxation of the in intercostal muscles in which they allow carbon dioxide to move out from the lungs.</p> <p>Diaphragm relaxes and moves to its original shape. Through the relaxation of the diaphragm air which is carbon dioxide will be forced to move from the lungs.</p> <p>Volume of the thoracic cavity decreases thus leading to the increase of pressure inside the lungs and so due to this carbon dioxide is forced out of the lungs.</p> <p>And finally carbon dioxide is expelled from the lungs to the atmosphere whereby it is then used by plants to manufacture their own food.</p>
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11.	In general breathing in human beings facilitates the exchange of gases for effective functioning of the body because of the removal of waste gases like carbondioxide so that it can not interfere the normal functioning of the body, and also getting oxygen which is used for respiration.
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Extract 11.2 shows a representative sample of good responses where the candidate had good knowledge about the question and managed to describe the mechanism of breathing in humans. The candidate used clear language and cited relevant points that enable him/her to score all the 20 marks allocated to the question.

2.3.2 Question 12: Co-ordination

This was another optional question. It required the candidate to elaborate the causes of drug abuse to young people and advise the Tanzanian Government on the ways of combating drug abuse in the country. The question carried a total of 20 marks.

A total of 238,297 (58.2%) candidates attempted this question, of which 13.6 percent scored 0, 76.1 percent scored between 10 and 14 marks, while 10.3 percent scored between 15 and 20 out of 20 marks allocated to this question. Generally the performance in this question was poor.

Candidates who performed poorly diverged from the demand of the question as they did not respond correctly. Instead of explaining the causes of drug abuse some of them explained the effects (outcome) of drug abuse. For example some wrote 'brain damage' as one of the causes of drug abuse. Extracts 12.1 illustrates candidate's sample of poor answer.

Extract 12.1

12 Drug abuse to young people and advise the Tanzania Government on the ways of combating drug abuse in the country.

Drug abuse is the process which can be affected the young people and other people to broken the brain. Drug abuse can be affected the brain.

When the young people can use this drug abuse are very bad to the young people so can causes many problems in our brain. So every parents must be care for the children or young people when the young people to be the street children is very badly than the others, so teachers make sure that to take the education well and effectively in order to understand the drug abuse is the one of dangerous for the young people when affected to the brain for any sector. Myself I need education about the drug abuse can be effectively for the benefit well when the drug abuse can affected to the observation can be horizontal well than others successfully of this drug abuse of the well so if the every body must be to know the drug abuse can be affected the our brain and refuse I think the young people can don't uses the drug abuse but also others there are no education to know that and other is know that so if others there are no educated for that must be to find which ways can use to educate about the drug abuse, so drug abuse is very bad to the people when you selection to say that the young people can affected to the drug abuse is ok. but education is very important for all young people uses the drug abuse every time or every day.

Extract 12.1 represents a sample of candidate's poor responses which shows that the candidate did not understand the question demand. Instead of explaining the causes of drug abuse, the candidate explained the effect/outcome of drug abuse that is 'brain damage'.

Few (0.3%) candidates who scored between 15 and 20 marks had enough knowledge to explain the causes of drug abuse such as social pressure, weak family structure, to get relief from anxiety, mismanagement of drugs, curiosity, Globalization and lack of education. They were also able to explain the ways of combating such as providing education, drugs management, to enforce the laws, involving the community and establish youth centers. Extract 12.2 illustrates a sample of candidate's good answer.

Extract 12.2

12.	<p>Commercial advertisements aiming at the promotion of certain drugs such as nicotine, caffeine may influence some people to take drugs. Some advertisements of certain drugs may motivate people especially young people to ^{become} use drugs abusers.</p> <p>Some take people take drugs in order to as a matter of curiosity. They take drugs in order to know the effects and reaction such drugs in their body. This may lead to drug abuse as well.</p> <p>Others to Drug abuse can also be caused as a result of taking drug in order to avoid obey the rules of certain group. This is common to many youth, they take drug so as to follow the rules of certain group, in many cases there are illegal groups e.g.</p> <p>Peer pressure may also be one of the cause of drug abuse. Many youths are motivated by others so that they may engage in illegal activities such as drug abuse.</p> <p>Weak family structure may also be a cause of drug abuse. Unproper upbringing of children may cause children to engage in immoral acts, one of them being drug abuse; due to lack of proper morals.</p> <p>Some of ways in which I would advise the Tanzania Government in order to combat the drug abuse in the country are:-</p> <p>Enactment of strict laws ^{by the government} as well as to punishments in order to restrict the drug problem of drug abuse in the country. Laws should enacted and enforced in order to limit the drug abusers as well as to stop drug abuse in the country.</p>
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12.	<p>Mass education is also important in order to fight against drug abuse. The government as well as other institutions and NGOs (Non-Governmental Organisations) should educate the mass on the any effects of drug abuse.</p> <p>Young people (youth) should in other be encouraged by the government to engage in different at productive activities. The government should also diversify the economy and provide employment opportunities to people in order to keep them busy and not remain idle and engage in drug abuse.</p> <p>Crops producing drugs such as tobacco should strictly prohibited by the government of Tanzania in order to stop the production of harmful drugs which may lead to drug abuse.</p> <p>The government should open up rehabilitation centre for those who are already involved in drug abuse activities at in order to stop the spread of drug abuse effect.</p> <p>These are some of the causes as of drug ^{abuse} as well as the ways in which the government can use to combat the problem of drug abuse. At lower levels like at family level proper upbringing of the children is very important as well.</p>
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Extract 12.2 shows a sample of a candidate's best answer that scored 20 marks. The candidate managed to explain the cause of drug abuse and the ways of combating it.

2.3.3 Question 13: Reproduction

The question required the candidates to explain five factors which contribute to irresponsible sexual behavior among young people and their effect in the community. This question was allocated 20 marks.

Only 17 percent of the candidates opted for this question, of which 25.8 percent scored 0, 65.2 percent scored between 1 and 14 and 9.0 percent scored between 15 and 20 out of 20 marks allocated to this question.

Candidates who performed poorly in this question had poor communication skills. The candidates used unclear language with mixed up concepts. Also, some candidates lacked enough knowledge about the question and therefore failed to explain the factors which contribute to irresponsible sexual behavior among young people and their effect in the community. Extract 13.1 represents a sample of candidate's poor responses.

Extract 13.1

13.

Sexual irresponsible behaviours are behaviours which are not acceptable by the society. Examples of irresponsible behaviours are like alcoholism, sexual intercourse due to those they also have bad effect to the ^{community} of today we are living this can be discussed as follows

Alcoholism. This is the bad irresponsible behaviours because their behaviour some one can eager from another and this which is very bad and people say by drinking alcohol someone refresh his mind why he/she is developing are badly either by being drunk and other bad behaviours and a person like this is always not acceptable by the society and he/she is a source of conflicts in the society.

Abusive languages. This is also the bad irresponsible behaviours because you find in our society today many people have bad abusive languages and this may lead ~~to the society~~ to be not loved by the society and no one will be cooperating with you.

Prostitution. This is one of the irresponsible behaviours because you see many girls are found in streets selling their bodies at the aim of getting money for their survival needs and this which is very bad this may lead to the transmission of sexual diseases which is ~~HIV AIDS~~ HIV AIDS.

Corruption. This is also a bad irresponsible behaviours because it affects mostly the country and this is too bad and it hurts a lot of Tanzanians and bad behaviour may lead to be a thief and also the society will declare you and even hate you.

13.	<p> <u>Polygamy</u> is the tendency of having many wives. This is a bad irresponsible behaviour which the society can't accept them. This behaviour may lead to family conflicts like the man can have only one wife more than others and this may lead to sexual diseases like HIV AIDS. Example a woman staying with you sleeping with another man and may be is having HIV disease that wife will transmit to all of them and also this may also lead to early marriage. </p> <p> <u>In conclusion</u> I would like to advise the society to be strict on those bad behaviours if someone is caught practising the bad behaviour he/she should be taken strict law and also give a piece of advice to the government to provide education everywhere when it is necessary need. </p>
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Extract 13.1 represents a sample of candidate's poor responses. The candidate performed poorly because he/she failed to understand the requirements of the question. Instead of explaining irresponsible sexual behaviors, the candidate's answer based on general irresponsible behaviors such as abusive languages, corruption.

Few (10%) candidates who answered this question well were able to explain the factors which contribute to irresponsible sexual behavior among young people and their effect in the community using clear language. Extract 13.2 is a sample of candidate's good response.

Extract 13.2

Lack of counselling and guidance in the society starting in the family level contributes into irresponsible sexual behaviour to be done by the young. Young people always needs support and to be guarded by the elder people in the society and since the lack this they engage themselves into these acts.

The irresponsible sexual behaviour always affects people who engage into these acts. The followings are the effects of irresponsible sexual behaviours.

Sexual transmitted disease such as syphilis and HIV/AIDS, ~~are~~ the effect of engaging into irresponsible sexual behaviours such as having many sexual partners.

Losing personality in the society is the result of engaging into irresponsible sexual behaviour like prostitution. The society does not like people who are engaging into evil acts so it degrades their personality.

Unwanted pregnancy is the bad big problem to many young people (girls) and it is the result of the irresponsible sexual behaviours as prostitution and having many sexual behaviour.

Conflicts in the society can be caused by the irresponsible sexual behaviour, and these can even cause death. The behaviour such as taking another man's wife or another woman's husband ~~can~~ or another person's partner, causes conflict and even can cause death.

Street children and orphans increase in the society due to the irresponsible sexual behaviour. The youth who are separate and one have no ability to feed children or death of all cause orphan to increase in the society.

~~Due~~ Bad performance in school and even dropout from the school caused by irresponsible sexual behaviour to the young people who are in school. Many schools dislike evil sexual acts so the schools punish or remove those who engaging in these acts.

Lastly, the cause of underdevelopment within the society and country at large can be contributed by the irresponsible sexual behaviour. Since young people also can contribute in economic activities and raise the economy, but involving into sexual ^{evil} acts remove their part of contribute very small into raising development. But also due to the disease and death of young people their space in contributing into raising economy is empty and hence underdevelopment is unavoidable.

Conclusively, I advice the young people to avoid irresponsible behaviours because this affects themselves and also the nation. And to the society and government they should provide education, counselling the young ^{people} and guarding them to prevent them from the irresponsible ~~sexual~~ sexual acts. By considering this the young people will be saved and also society and the nation at large since the young people are the future builder of the nation.

Extract 13.2 shows a sample of candidate's best response. The candidate started the essay with introduction and arranged the work in paragraphs. The candidate managed to explain the factors which contribute to irresponsible sexual behavior among young people and their effect in the community using clear language.

3.0 CONCLUSION

The general performance of the Biology paper 1 for CSEE 2013 was poor. The conclusion drawn from the question analysis is that, some candidates failed to express themselves clearly in English language and some explanation of the concepts were not understood by markers or brought about different interpretations. It was also found that candidates lacked the basic knowledge on Biological concepts. Also, the analysis indicates that besides the problems that the candidates had in English language, majority of the candidates experienced difficulties in answering the questions that required practical experience as observed in question 3 and 9. Furthermore, candidates were unable to identify the demand of the questions, which made them to provide irrelevant responses and led the majority of the candidates to lose marks.

Thus this report will be helpful to students, teachers and other education stakeholders. It will enable them to take necessary measures to improve the candidates' performance in Biology examinations, particularly the Certificate of Secondary Education Biology Examination.

4.0 RECOMMENDATIONS

In the view of the analysis and conclusion made on the performance of the candidates in Biology paper 1, it is recommended that:

- (a) Students should speak English inside and outside especially during their group discussions in order to improve their English language proficiency and to be able to use it efficiently in constructing sentences and speaking fluently.
- (b) Moreover, candidates should be advised to make sure that they do a thorough revision on all topics across the syllabus of Biology before commencement of the final national examination so as to make sure they have enough knowledge and skills required to answer the examination questions.
- (c) Teachers should insist students to read the questions carefully and teach them skills to identify the demands of the questions before attempting them.

