

THE RELATIONSHIP BETWEEN THE PHRASING OF EXAMINATION QUESTIONS
AND CANDIDATES' INTERPRETATION AND RESPONSE WITH REFERENCE TO
GEOGRAPHY AND GENERAL SCIENCE CENTRALISED JUNIOR SECONDARY
EXAMINATIONS IN ZAMBIA

BY

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DECLARATION

I, **Obster Gorebrowne Nyirenda**, do hereby solemnly declare that this dissertation represents my own work and that it has not previously been submitted for a degree at this or another University.

Signed:

Date:

DEDICATION

To all Educationists, Educators, Examiners
and all Examinees.

Quotation

"In this work, when it shall be found that much
is omitted, let it not be forgotten that much
likewise is performed."

Dr. Samuel Johnson.

(On completion of his dictionary, 1955)

APPROVAL

This dissertation of OBSTER GOREBROWNE NYIRENDA is approved as fulfilling part of the requirements for the award of the degree of Master of Education by the University of Zambia.

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ABSTRACT

The dissertation reports an investigation of the relationship between the phrasing of examination questions and candidates' interpretation and response. The investigation emanated from a suspicion that the inappropriate phrasing of questions was one of the major causes of candidates' poor performance in examinations. This suspicion was supported by the identification of a large number of linguistically inadequate questions in the 1984-87 Junior Secondary School Examinations (JSSLE).

Specifically, the study sought to find out if the way an examination question is worded influences a candidate's thinking, interpretation and answer.

Two composite test papers, each with General Science and Geography questions (extracted from the 1984-87 national examination papers) were administered to a randomly selected sample of 100 Grade IX pupils in two Zambian Secondary Schools. In each School one group sat for a test of actual and linguistically inadequate questions, while the other sat for a corrected version of the same paper.

After the tests, the language of each paper was discussed with each group of pupils separately. The two papers were discussed with the teachers as well. The language use in examination papers and the preparation of examinations were discussed with Training Institutions and the Lusaka - based educational authorities.

The analyses of the data established, inter alia, four important findings:

1. Pupils who had sat the corrected version performed better than those who had sat the original test paper.
2. Pupils of both groups had difficulty interpreting the examination jargon.
3. There were great disagreements over the interpretation of the examination terminology among subject teachers and the University of Zambia educational experts.
4. Training institutions were not consulted on the preparation of examination questions.

In the conclusions, the report makes various pertinent and practical recommendations based on the analyses of the data.

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CHAPTER ONE

1.0 INTRODUCTION: THE NEED TO STUDY THE LANGUAGE OF EXAMINATIONS IN ZAMBIA

1.1 The Importance of Examinations

Every society prepares its young for their role in later life through the process of formal and/or non-formal education. Most societies have institutionalised this process. Whatever the form of education, at the end of every preparatory stage comes certification - a public acknowledgement of an individual's right to enter society (Sharma, 1975). Certification follows examination by which candidates' knowledge and skills gained are measured and assessed or evaluated.

In the Zambian educational system candidates are subjected to what are generally known as public, national or centralised examinations. Generally, national examinations are used as selection criteria for the limited number of places available in institutions of higher learning (Ministry of Education, 1977) and are also used for prediction (Ming, 1975). Another use is that of improving and monitoring education in the country, or as Sharma (1975) puts it, "teachers use them not only to sample the pupils' knowledge and skills but also to evaluate their (teachers) methods and abilities" (Min. of Educ., 1977).

Outside the educational system, examination results, especially public ones, form the basis for job procurement and placement (Lloyd-Jones and Bray, 1960). None of these functions of examinations can be achieved without the use of language (Farnham-Diggory, 1972: 383). The researcher feels that unless a pupil is prepared to cope with examinations, he/she will find himself/

herself cut off from the important economic, social and intellectual opportunities.

In view of these uses, it is understandable that many educationalists and educators associate pupils' academic achievement with performance in examinations. Hence the aim of an examiner should be to prepare an examination that will measure pupil's attainment as accurately as possible. There are, however, many factors that contribute to the preparation of such an examination. This study presumes that one such factor is how language is used in examination questions and, therefore, seeks to find out whether or not the wording or phrasing of an examination question influences a candidate's thinking interpretation and answer.

1.2 The Function of Language in Examinations in Zambia

Martinet (1968: 26), a linguist, advances the following definition of language:

A language is a medium of communication according to which human experience is analysed, differently in each community, into units (monemes) with a semantic context.

Smith and Adams (1972) and Lloyd-Jones and Bray (1986) regard an examination as a communicative device. Throughout this discussion language and examinations will carry a communicative implication.

The role of language in an examination can be understood from a pragmatic context. Generally, pragmatics is how language

is used in communication, i.e.: in interactional context (Rivers, 1981). In order to appreciate the problems associated with language use in examinations, four language issues confronting examinations need to be made.

First, Zambia uses English as both an official language and the medium of instruction throughout the educational system. Since its introduction into the country, English has developed certain formal and pragmatic idiosyncracies which are not found in British Standard English (BSE), but these variations have **not yet been** codified or officially recognised although various studies have been undertaken (Africa, 1983; Moody, 1984a; Chisanga, 1987). Since independence, as the Deputy Director of the Examination Council of Zambia (ECZ) explained, Zambian teachers have gradually assumed the responsibility of setting national examinations. The implication of this move is that examinees should find the examinations easier linguistically because the setters would be more aware of how the examinees used English.

Secondly, an examination presents a rather abnormal 'conversational' situation with many implications for communication between the interlocutors. The participants use the written medium to communicate with each other. If the examiner used the oral medium, he would have, at his disposal, many auxiliary devices to help to communicate his intentions to the examinees, e.g.: reformulations of questions, repetitions, tone of voice, gestural cues, interruption of questions or quizzical looks on the part of the examinees. However, because the examiner is using the written medium, he distances himself from

the examinees. He has of necessity to compensate for the missing components by making use of only such language levels or principles as pragmatics, grammar, syntax, lexis (vocabulary) semantics and cohesion. This is because, by its nature language is highly structured.

Thirdly, the notion of language as used by educationalists and educators is evaluated according to whether it is simple or complex, clear or vague, concrete or abstract (Giroux, 1984). This is important, especially in examination papers, because whereas complex, vague, abstract language impedes communication, simple, clear and concrete language facilitates it. The examination, especially when one considers its importance to national development and individual candidate's future, demands that the examiner should be sensitive to precision in expression, use of simple and concrete language so that the examinee understands clearly what he is required to do.

Fourthly, an examination situation is such that the examiner simultaneously gives a multiplicity of directives, on paper, to the candidate, who may give back a corresponding number of answers or performances on paper. Since the candidate cannot ask for clarification, the examiner's language must be specific. The examination situation also makes the examiner controller of the candidate as the candidate cannot say No to a directive. Besides, he asks questions to which he already knows the answers (Potts, 1984). The examiner should justify his position by asking questions in such a way that a candidate understands the implications of each question. Vaguely and trickily phrased

questions should be avoided (Smith and Adams, 1972).

The examiner may ask a question variously requiring completion, matching, free response, filling in/drawing a map, grid, table, diagram, calculating, composing, discussion, essay, etc., or a combination of these, according to the knowledge he wants to measure. The language he uses must be such that these directives are clear, choosing the words that drive home his intentions firmly and exactly (Potts, 1984).

In short, . . . failure by the examiner to deal with all these factors, may have a psychological effect on the candidate before and while he grapples with the task, e.g.: the anxiety, the fear, the memory lapses, and the cognition (thinking).

The present study is of the view that the examiners should take into account all these factors surrounding the use of language in examinations by setting linguistically simple, clear and concrete questions. Any problems arising from inappropriate use of language may render the examinee incapacitated and desperate even if he knows the answer.

Once the pragmatic and linguistic elements, highlighted thus far, are appropriately applied in constructing questions, communication between the examiner and examinee is facilitated.

1.3 Definition of Linguistic Principles

In this study the following **expressions will carry the following meanings:**

Cohesive Principle:- Unity between sentences (Halliday and Hasan, 1976). It refers to a logical sequence of sentences and also, in the context of this study, to the harmony between maps/diagrams and the questions based on these maps/diagrams.

Grammatical Principle:- Rules or conventions governing the use and usage, i.e.: function and form, respectively, of a language in a speech community. Here, it is related to structures, meanings, use and situations (Leech, 1983; Leech and Svartvik, 1973; McCrimon, 1963).

Lexical Principle:- Words and the way they are used in the examination subjects and contexts.

Semantic Principle:- Concerns the meaning and intentions of the examiners in the questions.

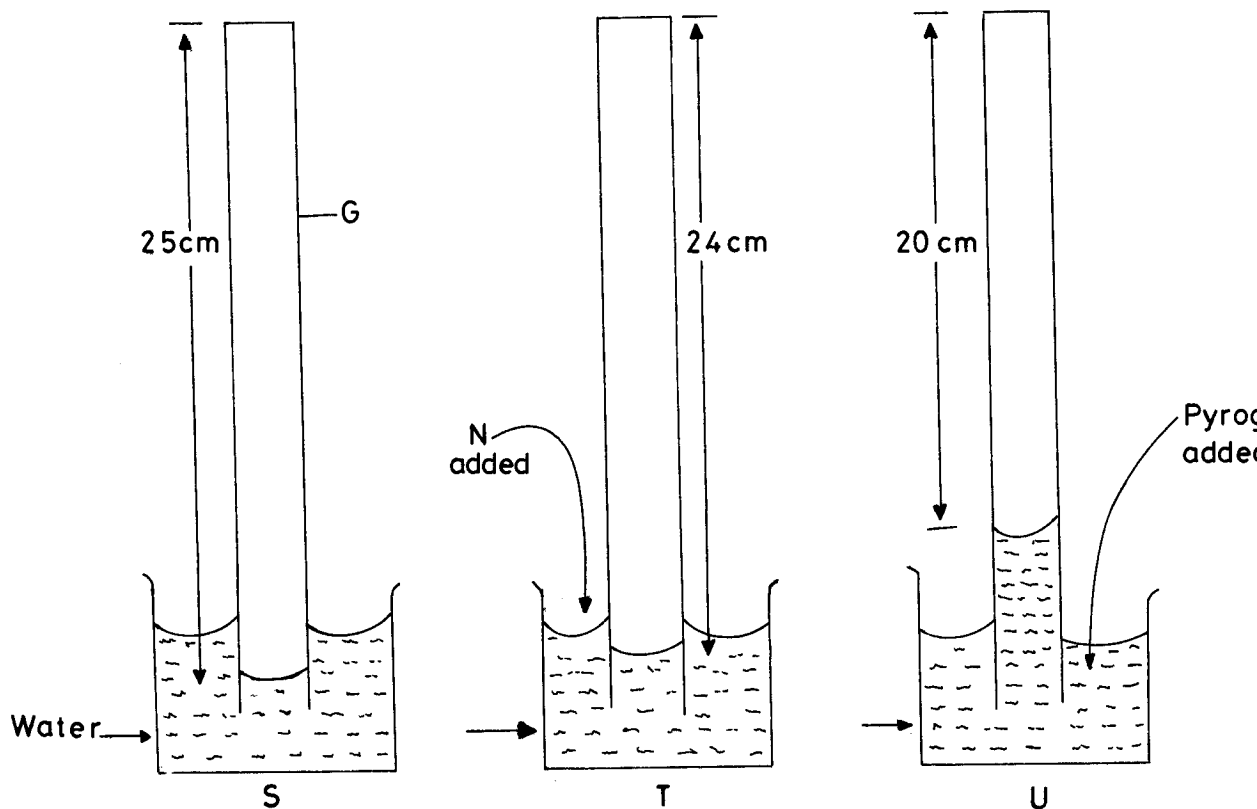
Syntactic Principle:- Refers to formal or structural combinations **of words to give a meaning.**

Pragmatic Principle:- Appropriate use of language in a speech community.

1.4 How Linguistic Principles Affect Communication in Examination Questions - Examples of Analysis

The following examples extracted from past national examination papers in Geography (G) and General Science (G.S.) [where G.1 and G.S.1 mean Geography Paper 1 and General Science Paper 1, respectively, and G.2 and G.S.2, Geography Paper 2 and General Science Paper 2 respectively] are analysed. The analyses help to illustrate how failure to come to terms with the four (pp 3-5) problems/issues can cause communicative difficulties.

Example 1. (G.S.2 1985 No. 3)



"G in the above diagram S is a thin glass tube sealed at one end and filled with a sample of air.

The flow diagrams T and U show what happened after certain substances were added to the water and the apparatus left for some time.

Answer the questions below:-

- (i) Substance N was added to the water to remove carbon dioxide. What substance could N be?

N could be

- (ii) What gas is absorbed by the pyrogallol?

.....

- (iii) How much carbon-dioxide was absorbed by the substance N?

.....

- (iv) What percentage of carbon-dioxide was in the air sample?

.....

- (v) Name the gas left in the tube in U.

.....

EXPLANATION:- Because of the misapplication of the following linguistic principles, this question is inappropriate for examination purposes:

GRAMMATICAL PRINCIPLE - In the report on the experiment, the expression, "and the apparatus left" requires the auxiliary was. This ellipsis is ungrammatical because the conjunction and joins the following parts:

- (a) substances were added.....
- (b) the apparatus left.....

(a) and (b) are unequal since the noun substances takes the same

plural verb were and apparatus cannot take the same form of the verb. It must take the singular verb was for concord. Ellipsis of the verb were is not possible in the second conjoin (Quirk et.al., 1985). This structure could confuse candidates, because they would not know where the apparatus went.

SYNTACTICAL PRINCIPLE - The expression "G in the above diagram S is a thin glass..." is semantically confusing. It is very difficult to interpret because it is unpunctuated. As a written piece of language, it must be punctuated with a comma after G and after "diagram", otherwise the verb is after 'diagram S' may well be taken to refer to 'diagram S'. Yet, the intended meaning is "G is a thin glass...". It must be punctuated: 'G, in the diagram S, is...' or restructured, "In diagram S, G is...".

PRAGMATIC PRINCIPLE - 1. The first sentence of the report is in the Present Simple Tense but the second one in the Past Simple. All but one question, (ii), are in the past. This is confusing because it is not easy to tell whether this is an example of similar experiments or a particular experiment. The question is not precise contrary to what Turk and Kirkman (1982: 100) say about the nature of scientific language. Widdowson (1979: 58) observes that in scientific language the choice of tense is based on how general the author believes the phenomenon to be, and not on time. He will use the present tense if he knows of a large number of cases, the present perfect if a few cases and the past tense if he knows of one case. But he also observes that the present and past tenses are used to describe or report permanent

and temporary experiments respectively. When the tenses in an experiment are confused, the examiner's intention becomes vague.

2. The report is in a structure that is too complex for Grade IX pupils. Even the examiner himself has failed to report the experiment lucidly: the incorrect ellipsis of the verb were in the expression, and left for some time. The English Language Syllabus for Grade 8 and 9 (Provisional) does not prescribe the teaching of:-

- (a) separation of subject and verb in "G in diagram S is a thin glass (where G= subject, is= verb)..."
- (b) the excessive embedding in the second part of the report as shown by the number of conjunctions (underlined):

The flow diagrams T and U show what happened after certain substances were added to the water and the apparatus left for some time.

According to the syllabus, at this level, a candidate can only handle simple and compound sentences, i.e., involving one or two clauses. Therefore the report is likely to be unintelligible to a Grade IX pupil.

3. The verb name is too imprecise for examination purposes as the candidate may, arguably, choose to give the substance (in question 5) any name he pleases. The examiner has in mind the name that the examinee has met in his science lessons. He would make it more specific as in (5) below. The question can be improved thus:

In diagram S above, G is a thin glass tube. It is sealed at one end and filled with a sample of air. The flow diagrams, T and U, show what happens after certain substances are added. The apparatus is then left for some time.

Answer the following questions:-

1. Substance N is added to the water to remove carbon-dioxide. What substance can N be?

N can be

2. What gas is absorbed by the pyrogallol?

.....

3. How much carbon dioxide is absorbed by the substance N?

.....

4. What percentage of carbon-dioxide is in the air sample?

.....

5. What is the name of the gas left in tube U?

.....

This latter version is, in this study, considered more appropriate as it is linguistically clearer, simpler and more specific. All the confusions caused by the ungrammaticality in the original question have been removed: the syntax has been simplified. The pragmatic difficulties have been cleared up.

Example 2

G.2, 1982, No. 41

After the seeds have been separated from the cotton, the cotton has to pass through other stages before finished cloth is made. Name two of these processes.

EXPLANATION:- This question is inappropriate for examination purposes because of the misapplication of the following principles:-

LEXICAL PRINCIPLE:- In this context, the setter uses words stages and processes as having the same meaning. But stages marks states which cotton reaches, in this context, in the process of being made into cloth.

SEMANTIC PRINCIPLE:- As a result the meaning of the explanation does not come out clearly because processes is semantically superordinate to stages. This can be illustrated thus:

$$P = [S1 S2 S3...]$$

where $P = \text{process(es)}$

$$S1 = 3... = \text{stages in the process(es) } P.$$

Therefore it would be illogical to state that

$$S1 = P$$

The question can be improved thus:

After the seeds have been separated from the cotton, the cotton has to pass through other stages before finished cloth is made. Give the names of these stages.

This question is more intelligible because now the pupil will think of stages as steps in the processing of cotton into cloth.

It should be borne in mind that often there are overlaps of these principles in examination questions as can be seen in lexical and semantic principles in the question above.

1.5 Language and Evaluation

A teacher can evaluate his pupils' knowledge and skills by

using two types of examination: the essay and the objective types, depending on what he wants to measure (Lindeman, 1967). Each type of examination has its own theories or principles. However, experts in educational measurement and evaluation agree that one of the basic principles is that the basis of good measurement and evaluation is the appropriate use of language (e.g., Smith and Adams, 1972; Karmel, 1966; Morse and Wingo, 1962; Thyne, 1974; Lloyd-Jones and Bray, 1986). It is difficult, almost impossible, to gauge the learner's progress and achievement without language. The teacher or the examiner communicates what knowledge or skill he wants the candidate to demonstrate. This is achieved by what is commonly regarded as questions.

In general, an examination question is a directive to the candidate to give a certain performance (Thyne, 1974). To construct such a question, an examiner must be able to write well. If a question is imprecisely or ambiguously worded, the candidate is likely to be in doubt as to the kind of response that is expected of him. Subsequently, this may cause the candidate to give a wrong answer even when he knows the right answer. This will, in turn, reduce the accuracy of the examiner's evaluation. This study makes a case for the need to use appropriate language in constructing examination questions for valid evaluation.

1.6 The Problem

The problem, therefore, is:

Does the wording or phrasing of an examination question influence the response a candidate gives to that question?

Although evaluation has received a lot of attention from educational theorists and researchers (Millman and Popham, 1974; Hambleton et.al., 1978; Hambleton, 1982; Hambleton and De Gruijter, 1983; Seddon, 1987), the present study is not aware of any relevant works that have investigated poor pupil performance associated with the misuse of language in examinations.

However, Cavendish (1983), who was also interested in the problem of evaluation, investigated the effect that the wording of a question has on the answer given. He phrased a question in several ways and each time he found that his sample changed answers according to what the sample thought the question wanted. In the light of this discovery, this study sought to explore linguistic inadequacies, in examination papers, that are likely to cause candidates to answer incorrectly even when they know the right answers.

1.7 Hypothesis

In order to answer the question (1.6 above)), the following hypothesis was tested:

There is a difference in the interpretation of the examiners' intentions between pupils subjected to appropriately-constructed questions and pupils subjected to the same but inappropriately-constructed questions.

1.8 Implications

Support for this hypothesis would show that pupils' interpretation of an examination question was influenced by the wording of that question.

Rejection of the hypothesis would show that there is no relationship between the appropriate wording of an examination question and the candidate's interpretation and response.

1.9 Assumptions

It was assumed that if examinees were asked questions in simple, clear and concrete language, they would tend to give accurate interpretations of the setter's intentions more often than if they were asked questions in complex, vague and abstract language.

1.10 Scope and Rationale of the Study

To test the hypothesis in 1.7, the 1984-87 Junior Secondary School Leaving Examinations (JSSLE) Grade IX Geography and General Science papers were used. The selection of Geography and General Science papers and the JSSLE papers does not imply that more errors were expected in these areas than in the others. These subjects are compulsory ones at junior secondary level. They were randomly chosen from the six basic subjects on the junior secondary school curriculum: English, Mathematics, Civics, General Science, Geography and Religious Knowledge/

Education. 1984-87 papers were chosen because the first JSSLE at Grade IX level were sat in 1984, and the latest papers at the time the research began (June, 1988) were the 1987 ones. The study, thus, embraced all the Grade IX public examinations sat so far.

As pointed out on p.56, the effect of inappropriate use of language in examination papers has already been identified and appreciated by the Lusaka-based educational authorities. However, they all admitted that no research on this problem had been done. As a result, during the discussion, the Deputy Director of the Examination Council of Zambia (ECZ) remarked, "... there is a chaotic system at the Ministry of General Education and Culture (MGEC) on the JSSLE".

In this study, use of language in an examination question is considered in-appropriate if the question:

- (a) is semantically or grammatically incorrect, resulting in misleading the candidate.
- (b) is imprecise, i.e. vague in the sense of unspecific or 'not well defined' (Kempson, 1977) despite it being correct or grammatical.
- (c) has forms of vocabulary or structure or both which are in advance of the candidate's linguistic competence, according to the junior secondary English language syllabus (MGEC, 1985).

As a result of this study, it is hoped, the educational authorities and examination setters will appreciate the need to think carefully about the wording of examination questions;

having seen how pupils' thinking is affected. It is further hoped that the research will serve as a reminder to examiners to be constantly aware of the misapplication of language principles as a possible factor in pupils' poor performance. The issues pursued in this study have relevance beyond the subjects and levels that have been investigated, e.g. internal examinations (tests) at all levels in the educational system, and in all disciplines, and employment sectors (Lloyd-Jones and Bray, 1986).

CHAPTER TWO

2.0 DESIGN OF THE STUDY

2.1 Introduction

According to Dunkin and Biddle (1974), before any change in educational practices is considered, there must be evidence for what is currently being done. Being interested in how the phrasing of examination questions affects candidates' thinking, interpretation and answers, this research looked at a sample of original questions taken from the JSSLE past examination papers. Pupils' difficulties with the language of examinations were determined by having them evaluate the language of examination papers and the answers to the examination questions as an indication of their understanding.

In order to enquire into the nature of communication between the examiners and examinees and investigate the possibility that incorrect, imprecise and too advanced use of language is a major cause of candidates' poor performance, the following method was used:-

2.2 Selection of Questions

One hundred (100) questions - fifty (50) in Geography and 50 in General Science were identified on the assumption that they were linguistically inappropriate for examination purposes. They were extracted from the Grade IX 1984-87 national examination papers.

Six (6) University of Zambia (UNZA) education experts were then consulted to confirm the assumption. These were:

Geography3 lecturers

Science1 lecturer (the only one in the department then)

English Methods 2 lecturers

After all the questions had been confirmed inadequate, ten (10) of them were randomly chosen, and then corrected on the basis of the comments, explanations and suggestions of the experts.

The English Language Syllabus for Grades 8 and 9 (Provisional)

also was used to correct the questions and formulate the wording of Group 2 questions (see p.106)to find out the structure level which ought to have been attained by the pupils.

Using the linguistic inadequacies indicated in each question by the experts, the researcher categorised the errors in each question according to the following linguistic levels (principles).

- | | |
|-------------------------------|----------------------|
| (i) Cohesion (Cn) | (iv) Semantics (Ss) |
| (ii) Grammar (Gr) | (v) Syntax (Sx) |
| (iii) Lexis (Vocabulary) (Ls) | (vi) Pragmatics (Ps) |

The following figure shows the linguistic principles and the frequencies of their misapplication in each question.

Fig. II.1: Categorisation of Errors in Groups 1 Paper Questions

| QUESTION | LINGUISTIC | | PRINCIPLE | | MISAPPLIED | | |
|------------|------------|----|-----------|----|------------|----|-----|
| | Cn | Gr | Ls | Ss | Sx | Ps | |
| 1 | - | 3 | 1 | 1 | 2 | | |
| 2 | - | - | 3 | 1 | 1 | 1 | |
| 3 | - | - | 1 | 2 | 1 | 1 | |
| 4 | - | 3 | - | - | 1 | 1 | |
| 5 | 1 | 1 | 2 | 1 | - | 4 | |
| 6 | 1 | 2 | 1 | - | - | 1 | |
| 7 | 1 | - | 1 | - | - | 1 | |
| 8 | - | 2 | - | 2 | - | 4 | |
| 9 | 1 | 6 | 1 | - | - | 2 | |
| 10 | 3 | 2 | - | 2 | - | 2 | |
| Fre. Total | 7 | 19 | 10 | 9 | 5 | 17 | 67 |
| Fre. % | 11 | 28 | 15 | 13 | 8 | 25 | 100 |

The linguistic principles were used for correcting and analysing the Group 1 questions (Chapter 3 and Appendix 12) and, later, rewriting the original to form two groups of question papers. The groups were:

Group 1... comprised the original (as they appear in actual examination papers) Geography and General Science Questions (Appendix 7: 92).

Group 2... comprised the revised versions of Group 1 (Appendix 8: 106).

The Group 2 paper was then validated by the UNZA experts. To do this, they examined each question in both papers to see which paper was simpler, clearer and more concrete linguistically (Appendix 12) and therefore, more appropriate for examination purposes. The experts unanimously decided that the Group 2 paper was more appropriate than Group 1 paper, but one of the experts felt that question 2 in both papers was inappropriate (see Appendix 3).

Finally, a composite marking key was made from the answer keys of 1984-87 question papers (Appendix 10: 122) for easy reference during marking and analysis of the answers to the Group 1 and 2 papers. They were used to compare the examiners' intentions and pupils' interpretations and answers. Schools indicated their willingness to participate in the research.

3.3 Selection of Pupils and Teachers

The population sample was Grade IX Term II pupils in Zambian boarding secondary schools and Geography and General Science teachers of these schools. Using random sampling, 50 pupils at Grade IX level in each of these schools were selected from the composite class lists in these schools.

Since a lot of time was needed for the testing and interview sessions, and considering the fact that pupils and teachers were soon to be engaged in mock examinations, the researcher felt that a short but intensive period of contact between pupils and him and teachers and him would be needed. This would be possible only in boarding schools, where pupils and teachers are accessible after school hours. Grade IX Term II pupils were chosen because at this stage, it is expected that they have covered most of the junior secondary curriculum and are closest in knowledge and skills to pupils who sit the JSSLE; this is why the mock examinations are sat at this time.

Given the limited amount of time for this research (3 weeks) the researcher randomly-selected only Kaoma, Nyimba, Mkushi and Isoka Secondary Schools from the schools with the following characteristics:

1. With a Grade IX population of 100+ pupils.
2. **Boarding school.**
3. Had to have had Grade IX by 1984.
4. Had to be accessible by bus (preferably daily) from the other sample schools.

Out of these four schools, only Mkushi and Isoka Secondary Schools indicated their willingness to participate in the research. From the point of view of pupil performance, therefore, the findings of this study may not be generalised to the whole country.

Using random sampling, 50 pupils at Grade IX level in each of these schools were selected from the composite class lists.

Then by systematic random sampling, they were assigned to two groups - Group A and B. The Group A pupils sat the Group 1 paper and the Group B, the Group 2 paper. The two groups of pupils were considered to be roughly of the same ability. They had both passed the Primary Leaving (Grade VII) Examinations; they were both at the same grade level, following the same courses in the subjects being investigated. Although their continuous assessments could have (better) confirmed the belief in pupils' equal ability, it was not possible to discuss them with their teachers because of a limited amount of time and also because the teachers were too busy with mock examinations.

For this research design, the researcher referred to Tuckman (1972: 130-1) using the Posttest-Only Control Group Design. According to this design, two groups are chosen randomly, in the present case, the population being the entire Grade IX class lists of the two schools. Since the classes were not streamed (according to ability) in any way, it could be said that they contained pupils of varying abilities such that random selection from the total lists, and **subsequently their** random assignment to two groups gave two groups which could be considered to be equal in ability. Neither group had been tested or instructed on the test papers.

Teachers participating in the study were chosen on the basis of their having taught the subjects being investigated to Grade IX, and having marked the Grade IX centralised examination answer-scripts at a marking centre since 1984. They were therefore familiar with all the questions (in the papers) and the answers.

2.4 Research Instruments

2.4a Group 1 and 2 Papers

Two papers were set: one, a composite of original questions sat by Group A pupils and one, a composite of rewritten ones sat by Group B pupils. They included written questions asking about pupils' attitudes towards language and examinations (Appendix 7 and 8). After the discussions with the pupils during pilot tests, it was found necessary to ask pupils to give their opinions about the Multiple Choice questions in addition to asking them to answer the questions. This gave them an opportunity to give their interpretations of these questions.

2.4b Interview Schedule A

These were open-ended questions to pupils for use in the discussion of the test papers to elicit their opinions about the questions in these papers and examination papers in general. Answers to these questions were given orally, and recorded on a cassette-recorder (Appendix I : 85).

2.4c Interview Schedule B

These were given as open-ended questions to teachers for use during the discussion of the question papers between them and the researcher. They were designed to elicit their evaluation of the Group 1 paper questions along with the Answer Key, and their general opinions of the JSSLE papers since 1984. The

answers were given orally except for part three (3) which required them to study the questions along with the Answer Key. They were asked to underline the word that best expressed their **opinion)(s)** about each of the 10 questions. The discussion was cassette-recorded. The following terminology in part 3 was explained to the teachers thus:

2.4c (i) CORRECT - the question is adequately (communicatively), clearly and simply phrased with a single expected answer.

2.4c (ii) INCORRECT - the question is uncommunicative because it is incorrectly phrased.

2.4c (iii) AMBIGUOUS - a question has two possible interpretations/answers.

2.4c (iv) VAGUE - a question has more than two possible interpretations/answers, i.e.: unclear intentions so that the candidate does not know what to do.

2.4d Supplementary Instruments

2.4d i. Interview Schedule D

These were open-ended questions to the English Curriculum Specialist (p. 89).

2.4d ii. Interview Schedule E

These were open-ended questions to lecturers in teacher-training institutions (p. 90).

The answers to these schedules were orally given except for Schedule E, which was sent by post to the Copperbelt and Nkrumah Teachers' Colleges. The UNZA experts were given the schedules by hand. Answers by all these interviewees were given in writing. These instruments enquired about the roles the interviewees played in the preparations and administering of the Grade IX examinations, and their opinions and impressions about the use of language in examination papers particularly the JSSLE. The information obtained was very useful in arriving at the recommendations made in this study. Had Nkrumah responded, the recommendations could have been more fully authoritative.

2.5 Conduct of Field Work

The field work lasted from 13 to 22 July 1988. At each sample school, both groups sat the tests in the same room for easy supervision. The teachers would come to assist the researcher whenever they were not running the mock examinations concurrently. The Explanation of Tests handout read, and the examples of how to do each section of the papers given, the pupils were instructed to start the tests. They had two hours in which to do them. However, since the pupils were required to attempt all the questions, they were allowed extra time.

Ten minutes after the tests were written, the discussions of the test papers with the pupils followed starting with Group A and ending with Group B. The discussions of the test papers were aimed at having the pupils evaluate the language of

the test questions with the guidance of Schedule A. The discussions lasted about 2 hours for each group. In the meantime, the teachers were studying and discussing the Group 1 paper and the Answer Key among themselves, away from the test-room. The Group 2 paper was withheld from them in order not to influence their ideas about the use of language in the Group 1 paper.

On the second and third days, both papers were discussed with the teachers in the same room at the same time. This was because some of the teachers taught both subjects to Grade IX. After the discussion of each question was exhausted or seemingly so, the teachers were asked to suggest a better construction of the question and then the researcher would discretely propose his Group 2 version, which was discussed before alternative reconstructions of the Group 1 question could, if necessary, be found and discussed. The teachers' views about the questions were reflected in the linguistic analyses of the papers in Chapter 3 and Appendix 12. Finally, the teachers were asked to evaluate the Group 1 questions (Table II.1).

Both papers were marked by the researcher, using the Answer Key (Appendix 10), for consistency. The results of the two groups (A and B) were compiled and then compared using the Standard Deviation(s), calculated by using the formula in Appendix 13.: 177). The means of the scores of the two groups were then compared, using the Z-test (Appendix 13: 177) as the results show in the next chapter.

CHAPTER THREE

3.0 DATA ANALYSIS

3.1.1 Introduction

In Chapter One, an attempt was made to explain how the understanding of linguistic principles can enhance communication in examination papers. In this chapter, the study exemplifies how linguistic inadequacy in examination questions can impede communication. A sample of 10 linguistically inappropriate questions are analysed.

3.1.2 Linguistic Analysis of Group 1 Question Paper

The analyses of Group 1 Questions (Appendix 7), were based on the views and suggestions of the UNZA experts', teachers' and pupils' views and opinions. They had three basic purposes:-

- (a) to substantiate the view that the language of examination papers in Zambia does cause communication problems.
- (b) to show how the misapplication of the linguistic principles (Chapter One) can actually cause communication breakdowns in examination questions.
- (c) to reconstruct alternative questions for Group B candidates (Appendix 8).

The study had presumed that inappropriately constructed questions affect adversely pupils' understanding, interpretation and, subsequently, answers more often than when they are appropriately worded (1.7).

Because of the scope of the study, it is not possible to include the analyses of all the 10 questions in 3.1.3. Only

Questions 2 and 8, therefore, will be discussed. They bring out the salient linguistic points of the analyses (of Group 1 questions). They will serve as examples of the other questions with language problems discussed in Appendix 12. Question 2 illustrates how Section A of Group 1 was analysed and Question 8, how Section B was analysed:

3.1.3 Analysis of Question 2

Q.2. A plantation has the following natural conditions.
"On gentle slopes of a mountain, rich soils retaining moisture, no waterlogging of soils, annual average temperatures between 17°C and 25°C annual rainfall varies between 1000mm and 2000mm with a dry season."

This plantation would be most suitable for the growing of;

- A. Oil palms and rubber
- B. Sisal and cotton
- C. Sugar cane and tea
- D. Coffee and tea
- E. Groundnuts and rice.

EXPLANATION:- This question is inappropriate for examination purposes because of the following inadequacies summarised from the oral discussions that the researcher had with both the English and Geography experts at UNZA:-

LEXICAL PRINCIPLE: The use of the words 'natural' and 'condition' in the first sentence is, according to the UNZA Geography experts logically inappropriate. It was argued that a plantation need not have natural conditions for it to be a plantation. They cited several plantations in Zambia, e.g.: Nakambala Sugar Estate (Mazabuka), which exist under unnatural conditions. They argued

that a plantation is a piece of land on which "crops are grown" (also Monkhouse 1965). In other words, a piece of land is only a plantation when there is/are a crop(s) growing on it. Hence, the word condition is inappropriate. For this reason, some UNZA experts felt that "features" would better collocate with plantation. It seemed to be a pragmatic issue rather than a lexical one. The lecturers seemed to have interpreted it denotatively, with a generic implication. The last sentence, where the problem is presented has a cohesive item this, which suggests that the examiner had a theoretical plantation in mind. Because of this, the word condition was retained. One would also argue that the word condition suggests "circumstances" while features suggests "appearances", which is misleading.

Some UNZA experts felt that the concept rich in the expression, "rich soils retaining moisture" was geographically a vague misconception: rich in what?— in humus? carbon? sulphate? minerals? or calcium? Namafe, an UNZA Geography expert, explained that the concept rich is very subjective in that it "involves" quantities and qualities of these nutrients". Different elements (nutrients) cause different alternatives (A-E) to grow better, and some of these would make the soil infertile. He gave this illustration of given plants with different amounts of calcium ions requirements (Ca⁺⁺):

Oil palms may require 3% of Ca⁺⁺.

Rubber may require 17% of Ca⁺⁺.

Sisal may not require Calcium because the element is too alkaline.

Sugar cane, etc., may require 25% of Ca⁺⁺.

This soil, then, is rich in calcium for each of the plants in varying degrees, but it cannot support sisal and cotton growth. In this case, the soil is rich in calcium but infertile for sisal and cotton. Therefore, the word fertile was considered appropriate because it means "the soils has all the nutrients necessary for plant growth". The present writer doubted the pupils' ability to make such a distinction especially when Namafe revealed that the argument had recently been raised in a Geography journal he could not trace. Thus, the word was reluctantly used.

SEMANTIC PRINCIPLE - Going by the definition, advanced by Monkhouse (1965), that a plantation is a one-crop cultivated piece of land, it would appear that the use of and in the alternatives A-E, is semantically ambiguous. It could imply simultaneously or not thus:

- A. Oil palm and rubber
- B. Sisal and cotton
- C. Sugar cane and cocoa
- D. Coffee and tea
- E. Groundnuts and rice.

NB. and may mean growing crops (in each alternative singly or simultaneously).

SYNTACTIC PRINCIPLE - Since The Junior Secondary School English Language Syllabus (Provisional) does not recommend the teaching of participles, as in the condition: "rich soils retaining moisture" and gerundial structures, as in the condition: "no waterlogging of soils", it was felt that the candidates would not know the meanings of the words underlined. Therefore, the participial structure was relativised and the gerund changed into an adjective.

PRAGMATIC PRINCIPLE - The presentation and structuring of the conditions: "on gentle slopes... a dry season" would cause pupils difficulty in interpretation because they are grammatically incoherent with the stem "A plantation has... conditions". None of them can be joined to this sentence to make sense. They were translated into sentence structures for them to have meaning. The question was recast thus:

A given plantation has the following conditions:
it is on the gentle slopes of a mountain; it has fertile soils that retain moisture; its soils are not waterlogged; the temperatures there average between 17°C and 25°C; it receives an annual rainfall that varies between 1000mm and 2000mm, and has a dry season".

This is a(n).....plantation.

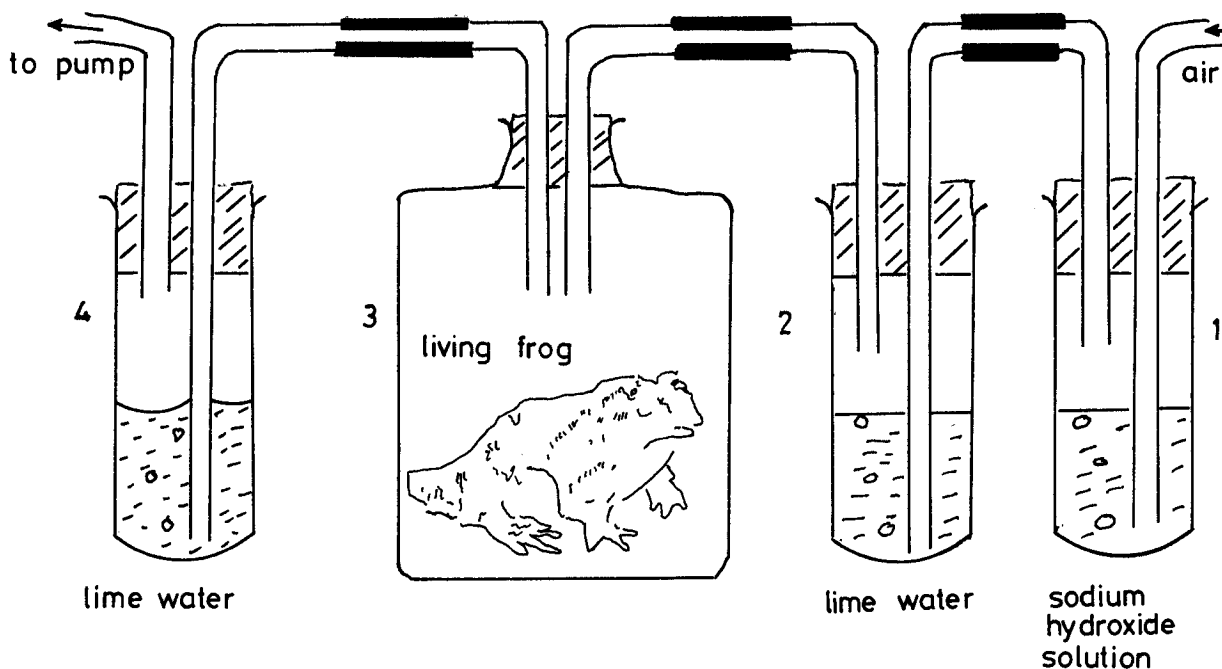
- A. Oil or rubber
- B. Sisal or cotton
- C. Sugar cane or cocoa
- D. Coffee or tea
- E. Groundnuts or rice.

COMMENT - This version is better since the format makes it relatively easier for pupils to think about the question than

does the original Group 1 question. The language is simpler, clearer and more concrete. The ambiguity in the options has been removed, making it specific that the examiner wants the candidate to think of a plantation as a one-crop piece of land. It is also a particular piece of land and not a generic one (use of "A given..."). According to Widdowson (1975: 59), the expression, "A given...", has two principal functions: exemplification and generalisation or as he puts it, "to express definiteness without commitment to specificity...". In this context, it has been used to show that this plantation is one of the plantations under same/similar growing conditions.

However, there was an objection to this version (Group 2) by an UNZA expert who felt that the question is "impossible" (i.e. the idea is inconceivable). All crops, he argued must have the same growing conditions in order to be paired or alternated. He proposed the use of one crop but he was unable to suggest which crops to use and which crops to discard.

Question 8.



Study the diagram and answer the questions below.

1. What do you think is the AIM of the experiment?
.....
2. What is the sodium hydroxide for in Tube 1?
.....
3. What is the purpose of Tube 2?
.....
4. DESCRIBE the differences in Tubes 2 and 4 you would expect to see after the experiment had been running a hour or two.
.....
.....
5. Explain your answer in 4.
.....

3.1.4 Analysis of Question 8

EXPLANATION - This is an inappropriate question for examination purposes because of the following inadequacies:

PRAGMATIC PRINCIPLE - When an examiner appeals to a candidate's intellectual state in such an examination question as Question 8 by asking him what he thinks, he loses his control over the candidate. Instead of directing the candidate to give the answer that he expects from him, he asks the candidate's personal opinion or judgement. The question becomes vague because it has subjective and **divergent** interpretations. The answers can be judged neither right nor wrong. In the light of the experiment presented, the examiner should ask questions that pertain to

the experiment - that is why he has drawn the diagram - questions that elicit the candidates' learning experiences or that will appeal to their logic. The expression: "What do you think" has a similarly vague illocutionary force to that of suggest in 7F and 7G in Group 1 Appendix 7: 92). The question was reworded thus:

8(a) What is the aim of the experiment? (Group 2).

COMMENT- The question leaves no room for 'wild' searching for answers. The candidate will have to use his learning experiences and logic. Judging his answer becomes easy and fair.

SEMANTIC PRINCIPLE - There is an element of ambiguity in question 8.4. This is because of the expression: "... the difference in tubes 2 and 4..." because there are four entities involved and the question requires grouping these entities into two (2) groups of 2 items each. The problem is how to group them, viz:

| | | TIME | |
|------------|--|------|----------------------|
| NOW | | | AFTER AN HOUR OR TWO |
| Tube 2 (A) | | | Tube 2 (C) |
| | | | |
| Tube 4 (B) | | | Tube 4 (D) |

If 'the 4 entities were designated by letters as in the diagram, then is the question asking about the difference between (A) (C) and (B) (D) or between (A) (D) and (C) (D)? Going by the key (answer) it is assumed that it is the (A) (C) and the (B) (D) distinction (the first one listed above) that is being asked. The problem for the setter is to put this distinction in (English) words.

GRAMMATICAL PRINCIPLE (a) - The use of would in the expression, "... you would expect to see after... had been running for..." might cause problems of understanding to pupils. The pupils are so far, used to expressing hypothetical (imaginary) worlds/ ideas using the pattern:

Subordinator (if) + Verb (past simple)+... would + infinitive:

If the experiment was running for... what would you expect to ...?

In this question, the expecting is occurring now although it relates to a future possibility. Perhaps if the subordinator, after were changed to if, would would be more clearly required. Therefore, the question was recast thus:

- 8(a) Describe the differences that you expect to see between tubes 2 and 4 after the experiment has been running for an hour or two. (Group 2).

This question is easier for Grade IX pupils since the structure is familiar. That is the tense sequence that they would understand with the subordinator after (MGEC, 1985).

GRAMMATICAL PRINCIPLE (b) - In 8.5, assuming that the verb explain is clear to Grade IX pupils, there may be a problem of interpretation because it seems rather ambiguous in this context as it could be taken to mean (i) or (ii) below:

- (i) Give reasons why you have given that answer in 4.
(ii) Give reasons for the differences you expect to see.

These directives expect different answers. (i) would require an answer that would start ^{something} like this: "I gave that

answer because ..." and (ii) something like this: "2 will be different from 4 because..."

3.2 Teachers' Perception of Language and Examinations

Here, teachers' views are presented to either support the researcher's analyses or help illustrate the discrepancies in the interpretation of examination questions among educators, who represent the teachers. The teachers and the researcher looked at both Group 1 paper and Group 2 paper questions. As in the previous section (p. 7) the discussion of questions 2 and 8 is presented. The rest of the questions are discussed in Appendix 12.

QUESTION TWO - Two (66%) of the teachers concurred with all the (three) UNZA experts' view that the question was inappropriate. They also understood the question to be referring to an ideal plantation (generic sense).

PRAGMATIC PRINCIPLE - All the teachers said that pupils at this level are taught a plantation can exist either under natural or unnatural conditions. They felt that the question was misleading since the Junior Secondary School Geography Syllabus prescribed the teaching about 'plantation' as an area where one crop is grown. The use of and in options A-E may cause problems of understanding because it may be interpreted to mean that a plantation has two crops. According to the teachers, it is wrong to use the word conditions for something that already exists. Conditions should determine the establishment of a

plantation on a given piece of land. Some teachers also remarked that the expression "natural conditions" is inconsistent with the condition: "On gentle slopes of a mountain" since terraces (an artefact) have to be made on mountain slopes.

LEXICAL PRINCIPLE - Some teachers pointed out that many of the words or expressions were too difficult for Grade IX pupils, e.g., waterlogging, retaining moisture, rich. These could have caused pupils problems of understanding the question. They supported the experts' opinion against the use of the word rich (p.31) for the same reasons.

SEMANTIC PRINCIPLE - Four (66%) of the six teachers wondered what the examiner's intention is. They felt that all the conditions are applicable to the crops in the alternatives A-E. Since "plantation" is a one-crop piece of land, they argued, this would have been a source of confusion for the candidates (A Chief Marker (1986) reported, "Question 32. The use of the indefinite article A might have created some confusion... the sentence could have referred to all plantations in general ... when in fact it was referring to one particular plantation only ..." he did not elaborate - especially since the alternatives have been "paired" so that it is possible to interpret each alternative to mean two crops in one area. So this is wrong because no plantation can grow two crops.

When consulted later, the Chief Examiner said that he had intended to "test the pupils if they know the conditions for the growing of the cash crops in the alternatives". He admitted

that the whole question was inappropriate because it was confusing in various ways. One way in which it was confusing was, as the teachers had said, that none of the options is correctly phrased since and is semantically ambiguous as it could imply simultaneity or not. Therefore, none of the options was the correct answer. They (teachers) suggested that the question could have been better worded thus:

Question 2. Study the following growing features¹ of a given plantation:

- (i) It is on terraces of a mountain
- (ii) It has fertile soils which keep moisture
- (iii) Its soils are not soaked with water
- (iv) The temperatures there average between 17°C and 25°C.
- (v) It receives an annual rainfall that varies from (not between)² 1000mm and 2000mm and it has a dry season.

Now answer the following question.

The conditions above are suitable for growing which of the following crops?

or Select the letter of the phrase that best fills the blank space:

This is a(n) plantation.

- A. Oil palms or rubber
- B. Sisal or cotton
- C. Sugar cane or cocoa
- D. Coffee or tea.

COMMENT - This version, they said, is better than either Group 1 or 2 version since the layout makes it relatively easier for pupils to think about the question than does either Group 1 or Group 2 version. The language is simpler and more specific so that the candidate understands clearly that the examiner is talking about a plantation as a one-crop piece of land. It is also a particular

plantation and not a generic one.

One teacher objected to the Group 2 version (when it was suggested to him) because he felt that this describes an equatorial plantation, assuming that C is the answer. This cannot, as such, have a season, but rather a "picking period".

QUESTION EIGHT - All the five teachers agreed with the researcher's views about Question 8 (Appendix 7) and thought that the Group 2 version was appropriate.

GRAMMATICAL PRINCIPLE - All the teachers said that Question 8.4 was unclear, but from the diagram two (20%) of the teachers interpreted it to mean:

- (i) identify the reason for using tubes 2 and 4, both of which have the same chemical - limewater - presumably at the beginning.

Two (20%) of them interpreted it as:

- (ii) Distinguish the difference between 2 and 4 -----
- (iii) Describe the difference between 2 and 4 -----

They said that whereas in (ii) a candidate is merely asked to state the difference, (iii) is directing the candidate to account for the differences, he has given, in detail. Another teacher felt that the candidate was probably asked:

- (iv) Describe the difference between 2/4 at the beginning of an experiment and 2/4 after an hour or two.

In (iv) it will have to be assumed that they are both the same at both points (cf. the analysis on p.35).

PRAGMATIC PRINCIPLE - Three (60%) of the five teachers thought that the directive verb "Describe" in 8.4 seems inappropriate in a short answer type of question (Lloyd-Jones and Bray, 1986) for, as Lewis (1976) and Murray et.al., (1963) put it, the verb entails a "detailed account" of the experiment. The teachers have a difference of opinion over this verb. Some thought it was appropriate as long as the grammar of the sentence was changed while others thought that "it is not possible to describe differences; they can rather, be stated". The consensus, though, was that it be reframed to reflect the type of answer expected. The question can be improved as in 1 and 2 below:-

1. State the difference in appearance between 2 and 4 after the experiment has been running for an hour or two. OR
2. State the differences that you expect to see between tubes 2 and 4 after the experiment has been running for an hour or two.

LEXICAL PRINCIPLE - There was a long argument over the verb "state" because the researcher had reminded the teachers of one of their colleague's view about this verb, (Appendix 7: 92 Lexical Principle (b)). The teachers recognised the possibility of confusing the pupils and decided to avoid using it. In the meantime, the danger can be avoided by rewording the question as in (a) and (b) below:-

- (a) Tube 2 will be _____ after an hour or two because _____

- (b) Tube 4 will be _____ after an hour or two because _____

It must be admitted that it was not possible to resolve the problem of discovering the examiner's intention. The discussion was based on the assumption (see analysis on p. 36).

(b) Question 8.5 was found altogether vague by all the five teachers. They said that it could mean any one of the following:

1. Give the causes/reasons for the differences.
2. Why did you give these differences?
3. Why did you give that answer?
4. Explain your answer in 4 parts.

At this stage, they commented that there is an element of ambiguity in 8.4 caused by the conjunction and in the expression, "Tubes 2 and 4"; semantically, it could mean either (a) or (b) below:-

- (a) Describe the differences in tube 2 you would expect....
- (b) Describe the differences in tube 4 you would expect...

Clearly there is a problem. The researcher had feared earlier on that pupils would find it difficult to tell the difference between "describe" and "explain". So, the same verbs were used in rewriting the Question in Group 2, but the way it was reworded did make a difference in the performance of the pupils of the two groups (A and B) - see Table III.3.

(c) The fear that the teachers had about 8.5 was that it is a very unfair question since whatever explanation the examiner may have wanted the pupils to give would most likely, and

appropriately so, be given in 8.4 so that the pupils would not know what to do and probably leave it unanswered. In other words teachers admit that the words explain and describe mean the same thing or have the same illocutionary force in examination papers, as far as they are concerned. To solve this problem, it was agreed that the safest thing to do was to incorporate the question into 8.4 by extension, and then mark allotment can be increased:-

"State the difference that you would expect to see between tubes 2 and 4 after the experiment has been running for an hour or two. Give reasons for the differences (4 marks)".

The key suggests that the examiner wants the pupils to give reasons for the differences. This can be put in a more specific way as in (a) or (b) below:

- (a) Explain the differences that you have stated in 8.4.
- (b) Why will there be these differences between tubes 2 and 4?

This intention is consonant with the definition of the verb explain offered by Lewis (1976) and Gowers (1965).

3.1.4 Summary of the Analyses of the Group 1 Question Paper

After the joint discussion of the test papers, the teachers were asked if they thought the use of language in examination

questions influenced candidates' thinking interpretation and answers. They admitted that language plays a key role in examinations as it determined how a pupil communicates the information which he is directed to give. They thought questions need to be made more effective in communicating the examiners' intentions especially at JSSLE level. They argued that appropriateness of language use, and not just correctness, matters in the interpretation of a question. Illustrating the point, one of them pointed out that questions: 6d, 7E and 10B of Group 1 (validated by the UNZA experts and to which they agreed as correct pieces of language), were examples of vague questions because of the inappropriate use of language (see Appendix 12, 6d:144). 7E - the phrase "commercial use in Zambia" does not reflect what pupils are taught. This phrase suggests that the trees do not necessarily benefit Zambia, when in fact this should be so. It should suggest that Zambia sells these trees (timber). He thought that the reworded (Group 2: 116 No. 7e) version is clearer on this.

One teacher also remarked that there is a tendency to "misuse" examination jargon in Zambian examination papers. Words like describe, state, explain, name were used with vague intentions. Teachers' evaluation of the questions in Table II.1 p. 80 and the analysis of the questions above clarify this point. Also the Answer Key shows that questions using the same terms expect different types of answers. An example is the use of the directive verb name in 5, 6a-d, 6k. This, they said, could have confused the pupils.

Name in 5a expects descriptions, common nouns (Appendix 12).

Name in 6a expects Proper nouns (i.e.:Names see Murray et.al.,1963).

Name in 6d expects common nouns.

Name in 6k expects the answer to the question "how (can/do) you travel...?"

One also notices that in 5a and 6k, name is used in similar contexts and Name in 6a-c and 6d is used in the same contexts. Yet, in either case, the examiner uses the verbs with different intentions.

All the teachers reasoned that inappropriate use of language by examiners has often forced teachers to award free marks to pupils whether or not the pupils have answered the questions. They felt that pupils should not be penalised for vague, ambiguous or incorrect questions. Examples are questions 1, 2, 3 and 9 because markers have not been able to agree on a correct answer.

One of the teachers also remarked that examiners tended to use language that was **considered above Grade IX** linguistic proficiency, a point which was also appreciated by the Head of English at CDC and the Inspectors of Schools. Notable examples were: Question 2, which contained too many unfamiliar words, e.g., waterlogging, retaining, rich: Question 3, which was structurally too complex because the syntax was beyond the Grade IX pupils' grasp:

Gerundial subject + Verb (link) + Complement - i.e.:

driving the small gear wheel + is + an arrangement.....

These vocabulary items and structures are not found on

The Junior Secondary School English Language Syllabus (Provisional).

The Science teachers said that in fact it is misleading and tricky (Appendix 12: 128). This seems to be a question of ignorance of the subject matter rather than being tricky. One teacher remarked that the examiner(s) confused two topics: machines, taught at Junior Secondary School level and power, taught at Senior Secondary School level. He added that, while it was possible to represent pictorially a simple machine, it was not so with power. Pragmatically, it was not clear what the examiner'(s)' intention was. Question 9 was incomplete because some essential factors (Appendix 12: 126) were lacking and therefore incomprehensible and it was also considered unscientific (stick instead of bar, the bar was drawn, not stick i.e. scientifically imprecise; use of wrong terms in the heading of columns in the diagram; (Appendix 12: 120) and carbon was too imprecise in this question in 9.1 (PRAGMATIC: Appendix 12: 175).

3.3 Analysis of Pupils' Performance in Tests

After the answer-scripts had been marked, the results compiled, the performances of the two groups were compared using the formulae reported in Appendix 13: 177. The results were tabulated thus:

Fig. III.2: Pupils' Performance in the Two Groups
(n = 50 each)

| GROUP | NO. OF PUPILS | MEAN PERFORMANCE (%) | STANDARD DEVIATION |
|-------|---------------|----------------------|--------------------|
| A | 50 | 9.74 | 3.74 |
| B | 50 | 13.22 | 5.62 |

The deviation of scores of Group A from its mean, when compared with the deviation of scores of Group B from its mean, shows that there is a difference in the performance of the pupils of the two groups. To test the hypothesis (p. 14) that "there is a difference in performance between the two groups", the Z-test was performed on the same data (2 groups).

According to McCall (1980: 249), the decision for rejecting or confirming the null hypothesis (H₀) is:

If $-1.96 < Z_{obs}/calculate < 1.96$, do not reject H₀. If $Z_{obs} < -1.96$ or $Z_{obs} > 1.96$, reject H₀, that is, if observed (obs) value of Z exceeds the critical value, + 1.96 at $\alpha = 0.05$ level of significance reject the H₀. That means that the probability is very remote that the two samples could be drawn from the same population, i.e., there is a difference between the two groups.

In this case, the observed value of Z was - 3.48 which exceeds the critical value of Z, at $\alpha = 0.05$. Therefore the hypothesis that "there is a significant difference in the interpretation of the examiner's intentions between pupils subjected to appropriately-constructed questions and pupils subjected to similar but inappropriately-constructed questions" was confirmed. Therefore, pupils' interpretation of an examination question is

influenced by the wording of that question.

The researcher then examined pupils' general reactions to the test papers by comparing the mean attempts of the two groups (Table III.2). There was not a marked difference perhaps because the pupils had been urged to try all the questions.

Next, this study was interested in finding out how difficult each question was in each group by determining its difficulty level (sometimes known as popularity level) or the Facility Value (F.V.) of the question. It is often reported as a percentage of students getting the question right. According to Simukoko (1981) and Heaton (1975), to calculate the F.V., the following formula is used:

$$\frac{R}{N} \times 100 \text{ where } R = \text{candidates getting the question right and}$$

$N =$ number of candidates attempting the question.

The results are reported in Table III.3. Then the F.V. of the papers (Group 1 and 2) were compared by calculating their means. The mean F.V. for Group 1 was 26% and Group 2, 37%. The hypothesis (1.7) is thus confirmed. Then, the question papers were classified according to the level of difficulty of each question by assigning it to the appropriate F.V. interval. Using the interval scale 10, the researcher assigned an evaluative remark to each interval. Each interval (Table III.4) shows how many of the pupils got each of the questions in either group right. The following figure compares the **concentration** of questions in the two groups at each level:

Fig. III.3 Question Concentration of Group 1 and 2 on F.V. Interval Scale

| F.V. Interval | Group 1 % | Group 2 % | Evaluation Remark about the Questions |
|---------------|-----------|-----------|---------------------------------------|
| 0-10 | 46 | 11 | Extremely Difficult |
| 11-20 | 15 | 20 | Very Difficult |
| 21-30 | 9 | 9 | Difficult |
| 31-40 | 4 | 24 | Quite Difficult |
| 41-50 | 7 | 9 | Average |
| 51-60 | 0 | 4 | Fairly Easy |
| 61-70 | 4 | 15 | Quite Easy |
| 71-80 | 11 | 4 | Easy |
| 81-90 | 2 | 2 | Very Easy |
| 91-100 | 2 | 2 | Extremely Easy |

NB: Each Group had 46 questions

It appears that as a result of the appropriate use of language, more of Group 2 questions were found easier than Group 1 questions. Therefore, it was concluded, language is a causal factor of pupils' poor performance.

Finally, the researcher wanted to find out the "Movement" of each question in Group 1 between the extremes as a result of changing the wording. Table III.5: 84 shows that questions moved either way, on the continuum, by various degrees. As argued earlier (see p. 19) this suggests that certain linguistic principles - e.g.: pragmatics and grammar affect communication more than others do.

Since the pupils found the Group 2 questions easier than the Group 1 paper ones (Tables III.3-III.5), the hypothesis

There is a difference in the interpretation of the examiners' intentions between pupils subjected to appropriately-constructed questions and pupils subjected to similar but inappropriately-constructed questions (p. 14).

is confirmed. In other words, this study has proved that when pupils are subjected to clear, communicative or simply worded questions, they tend to understand the questions better, giving more accurate interpretations and answers (to the questions) more often than when they are subjected to vague, ambiguous, uncommunicative or too difficult questions.

3.5 Analysis of Pupils' Evaluation of the Language and their Opinions of the Test Papers

In Chapter 2, it was stated that pupils were asked for a written evaluation of the test papers as part of the test. The following figure shows how the two groups interpreted the test papers.

Fig. III.4: Relationship Between Interpretation and Construction of a Question

| GROUP | ATTEMPTS MEAN | CI → R.A. MEAN | CI → W.A. MEAN | INC. I → R.A. MEAN | INC. I → W.A. MEAN |
|-------|------------------|-------------------|-------------------|-----------------------|-----------------------|
| A | 41.89 | 9.69 | 14.04 | 0.72 | 17.30 |
| B | 41.19 | 15.19 | 19.80 | 0.35 | 5.63 |

CI → R.A. = Correctly interpreted and Right Answer

CI → W.A. = Correctly Interpreted but wrong Answer

INC. I → R.A. = Incorrectly Interpreted but Right Answer

INC. I → W.A. = Incorrectly Interpreted and Wrong Answer

From this figure one can tell that when a question is inappropriately phrased, it is more likely to affect adversely pupils' thinking, interpretation and answer more often than when it is appropriately phrased. However, more pupils in Group B interpreted the questions more accurately but got them wrong (19.80) than in Group A (14.04). This suggests that when a question is appropriately constructed, it tends to improve pupils' understanding but not necessarily their performance, which might be dependent on the knowledge of the subject content.

Generally, therefore, it would seem that there is a positive relationship between the appropriate wording of an examination question and the examinee's interpretation and response as long as he/she knows the content.

This further leads to the rejection of the null(H_0) and confirmation of the alternative hypothesis (H_1) that "there is a difference in the interpretation of the examinee's intentions between pupils subjected to appropriately constructed questions and pupils subjected to similar but inappropriately constructed questions".

Hypothesizing that "pupils interpretations and responses are independent of the wording of examination questions (H_0), the data was further tested by using the Chi-Square (X^2) at 0.05 level of significance. The X^2 value was 8. For X^2 value to be significance, the critical value must be 5.99 at 2df. Therefore, the calculated value of X^2 (8) is significant since it is greater than 5.99. Therefore, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) that pupils'

interpretations and responses are dependent on the way the question is phrased" was confirmed.

Looking at the difference in performance between the two groups, one observes that pupils seem to find it difficult to cope with the language of examinations. This section is a summary of pupils' views about the use of language in examination papers in general and in their test papers in particular.

It was generally felt that examiners should write the questions more precisely as, in most cases, it is difficult to interpret the questions because they are imprecise. Some questions, both groups complained, do not mean what they say, considering the fact that the answers in the Answer Key did not correspond to the requirements of the questions. Group 1 were referring to questions 5, 6, 7, 8, 9 and 10 (Appendix 13 under cohesion). The researcher had not noticed this in question 10 nor had any of the teachers. In a 1988 Geography report from one of the marking centres, it was pointed out that none of the map-based questions in Paper 2 is related to the map, i.e. although maps are given and instructions require that candidates read the maps before answering the various questions, no question actually requires information from the map for its answer.

Pupils in both groups (A and B) complained that the English "they (examiners) use is very tricky". Questions 6a, for example (in both groups), confused them (pupils) because the verb name, they felt, could refer to either the name of the island as it is called or the directive to give the island any

name that they pleased. The same question had been cited by Pilot survey Group A pupils, in which one of them suggested that it be reworded: "What is the name of the island marked A on the map?"

Another problem raised was the meaning or connotations of the directive verbs: name, describe explain, etc. It seemed that many of them did not know how to interpret such words, for example: the use of the verb, name in 6e and 7J (Group 1). The results in Table III.3 show that of the 35 pupils (Table III.2) who had attempted 6e, none of them got it right and 45% of those who had attempted 7J got it right.

The verb state, as used in 5h, 6g, 6h, 6i, was variously interpreted. For them, the verb in 5h and 6h, is synonymous with describe, give, explain. In 6g and 6i, pupils felt that it meant mention whereas teachers had felt name to be preferable. In the Answer Key, state is interpreted: 5h as mention, 6g as name, 6h as give reasons for/why. 6i as mention (and/or describe?). The examiner is equally uncertain about its interpretation.

In 6d (in both papers), there was doubt as to what the question meant. Group A wondered as to where the attraction was located: offshore or onshore? and whether there was one or many. Group B pupils did not agree that there should be many attractions since the question specified ONE attraction. It was agreed that both questions be reworded to something like:

"Give the name of one of the tourist attractions at(in?)
town C."

The verb describe is also problematic especially as used in 8.4. Many guesses were in the direction of mention, explain, give (by both groups). The Answer Key interprets it as follows:-

Q.8.4 - as state the difference (not differences), but accepts something "similar" - Again this is vague (in which way should it be similar?).

The verb explain was the most difficult to interpret for both Groups A and B. There were very few hesitant offers to discuss it, from either group. Six percent (6%) of those who attempted 8.5 in Group 1 got it right (Table III.2: 81) and 38% in Group 2 got it right. The Key interprets explain as "Give reasons ... Teachers' speculations seem correct (p. 42). Probably, pupils in Group A failed to make any distinction between Explain and Describe in these related contexts. Perhaps, the relative clause "(that) you have described in (d)" in Group 2 (p.117) makes a distinction between the two verbs so that the pupil is able to see more clearly the different intentions of the examiner in these questions. Sixty-eight percent (68%) of the pupils attempted 8.5 and 82% attempted 8.4. Possibly it is true, as teachers said (p. 44), that 8.5 was answered. The low 6% FV in Table III.3 Appendix 12 of Group 1 could be attributed to uncertainty about the interpretation of the verbs. One pupil, for example, said, "Describe means explain each of the results after we can see the difference when you compare". No one opposed this view in Group 1. So, he probably saw no point in answering 8.5.

Both groups complained that "examiners use big words, which confuse us". Question 2 was a ready example, in which they could not understand the words retaining, varies and waterlogging; Question 5, which had processing; Question 6, which had tourist; Question 10, which had tuning, folk, struck, striking and prongs, to mention but a few. The contexts in which some of these words appear make them unfamiliar. For example, teachers observed that Questions 6 and 10 are not selected from the junior Grades 8 and 9 Geography and General Science syllabuses respectively, so that the words are beyond pupils' passive or active linguistic abilities. Another reason is that these words do not appear in The Junior Secondary School English Syllabuses (Provisional) although words like strike, processing, varies and folk are likely to be met with in comprehension lessons. The others seem technical (**specialised**) words in these subjects. The candidates should be familiar with some of these specialised terms if they have studied the subjects (folk is definitely contextually wrong).

Finally, it might be useful to mention that from the discussion, it was clear that pupils are aware of the appropriate use of language in examination papers. They said, for example, that "some questions are written in wrong English, e.g. Question 1, which Group B thought did not make sense. They said, "In Geography, 'Luanshya' means all parts of Luanshya, but the D.E.S. and the D.G. are found in Luanshya town centre only". After a lengthy explanation, they suggested that the question should read:

"According to the map, which of the following explains why Luanshya has an administrative centre (note the emphasis on the word has)?"

3.6 Analysis of the Lusaka-Based Educational Authorities and Teacher-Trainers'

In an earlier study (Nyirenda, 1987), many language problems in both the JSSLE (Form III) and School Certificate (Form V) examinations were highlighted. Suspicious, therefore, that since it appeared likely that the language in which examination questions are asked affected candidates' performance, the researcher took up the matter with the Lusaka-based educational authorities, viz, the Directorate of the Examination Council of Zambia (ECZ), the Curriculum Development Centre (CDC) specialists and the Inspectorate of Schools at the EGEC headquarters - Appendices 3-5 Schedule C-B. In the separate oral interviews the researcher had with them, they unanimously agreed that inappropriate use of language in examination papers adversely affected pupils' performance. Asked about the role of the Department of English in examination production, an English Specialist (in the CDC) pointed out that his office had, in the past, voiced concern at meetings of Chief Examiners of the JSSLE but nobody seemed to appreciate his concern.

In the light of these revelations, this study sought to know the role of each authority to see how the problem of inappropriate use of language could be solved.

3.7 The Role of Inspectors of Schools in the JSSLE Examinations

Explaining the procedure for setting examination papers, the Geography and Science Inspectors of Schools told the researcher that each of the subjects under investigation has a panel of examiners headed by a Chief Examiner (CE). The panels are appointed by the subject Inspector on the basis of long teaching experience in Geography and according to areas of speciality (Chemistry, Biology and Physics) in General Science. The Chief Markers (CM), they explained, are appointed on the same basis, but receive training in addition.

With regard to the setting of questions, the Inspectors said that the CE's are expected to invite questions from teachers all over the country. However, this contention was denied later by the teachers. Once the CE has received the questions, he should form a 'Questions' Bank'. From this bank, each member of the setting panel should draw his questions for an examination paper. The CE later convenes a meeting at which the prepared papers are discussed and then ratified. The Inspectors could not say what criteria were used in ratifying a question.

Curious about this procedure, the researcher asked one of the CE's, who agreed with the Inspectors on principle. He said that this theoretical procedure (explained by the Inspectors) might mean appropriate examination questions. According to him, CE's are supposed to liaise with CM's, who should determine the nature of the examination paper. Chief Markers should each contribute a question or two to both papers

1 and 2, and submit them to the Chief Examiners who should sit with a panel of 4 teachers - usually experienced subject Heads of Department (HOD's). They examined the questions in terms of:

1. Language, whether it is clear or ambiguous; just right or pitched too high.
2. originality of the question.
3. Appropriateness to the level of pupils - based on the syllabus.

This is supposed to enable them to select suitable questions for a "Questions' Bank". Any deficiencies, he explained, are eliminated by the panels.

The Chief Examiner should then draft questions for Paper 1 and 2. Two to three months later, he convenes a meeting which decides to pretest the questions. The panel should give a portion of both papers to a lower or higher grade class to determine its (the paper's) level of difficulty. The performances are later debated to determine the communicativeness of the questions. A later meeting should iron out any difficulties with language use, terminology and content. After this, final versions can be made and then sent for print.

The Chief Examiner, explaining the poor quality of the Group 1 questions, felt that preparing examination questions is a very difficult task and, as a result, most teachers have tried to avoid participating in setting papers. He denied the fact that Chief Markers receive any training at all. He said

that if they were trained, problems of the wording of the examination questions would be minimised as they (C.M.'s) would advise the C.E.'s on this, and would help the marking panels in interpreting the questions, especially since not all teachers" are knowledgeable even in the subjects that they teach".

He reported that in practice, the C.E. writes to 30 C.M.'s asking for a question from each one of them. Not many of them send their questions; but even the few that do so, submit mediocre questions. The majority of the teachers will just not co-operate. The few questions that he receives almost always cause heated arguments over the wording and content amongst the panellists. The panellists, frustrated, have to think of their own questions. He denied the existence of a 'Questions' Bank'. In any case, he thinks that having a questions' bank would encourage repeating questions in subsequent years.

The Geography Chief Examiner also mentioned that the papers are pretested in one school. They would normally give a paper to one student to answer. On the basis of his performance, the level of difficulty of the paper is determined.

He admitted that the majority of Zambian teachers, including himself, are not competent to set examination papers, especially the Multiple Choice ones because, as experience has taught him, the ability to set examinations required highly technical skills and a linguistic sophistication, which most of them lack. This was why most of the teachers who have been appointed to setting panels, have given up after the first experience. Referring

to criticisms by regional marking panels, the Chief Examiner said that the C.M.'s can criticize but they themselves often fail not only to set questions but to answer most of the questions set by the panels as well. However, some of the 1986 Geography Chief Markers raised genuine and serious points on the use of language in the examination papers and Answer Keys (these were the only accessible reports in Geography - there were none available in General Science). They expressed general concern about the misapplication of the following linguistic principles (see Appendix 14 for lists of Chief Markers).

PRAGMATIC PRINCIPLE - Many of the questions were vague because of the misuse of such directive verbs as name and mention. There were also many instances of the examiner(s) either contradicting himself (themselves) or misinterpreting his/their intentions.

LEXICAL PRINCIPLE - Examiners misused, it was felt, many of the geographical concepts: benefits, advantages/disadvantages, truck/trunk, data/figure, dam/reservoir, absence of season, season, measures, problems, giving rise to confusion in interpretation because the examiner confused their meanings.

COHESIVE PRINCIPLE - Where maps/diagrams/tables, etc., in certain questions did not relate to the questions (or vice versa) or where the majority of the questions in a "question" did not require reference to these "Visual aids" for answers.

One Chief Marker attributed the mistakes to hasty preparation "More time should be spent on preparing these important documents". With regard to the role of the subject Inspectors of Schools, he said that they are mostly interested in the Grade XII examinations. He hoped that when the ECZ "grows up", things would be better organised in Grade IX examinations.

3.8 Inspectors' Perception of Language and Examinations

Both the Inspectors, in Geography and General Science, appreciate use of language in examination questions for pupils to understand the questions and express themselves better. They regretted that pupils were unable to express themselves in answering Paper 2 of each of the subjects - (these are the Short - Answer question papers). Asked whether they thought it necessary to train examiners, they said they had identified the need for trained and qualified examiners. Although they said that they receive reports from marking centres, they were unable to give them to the researcher.

3.9 The Role of the CDC in Grade IX Examinations

Explaining their roles in the Grade IX examination, the CDC specialists said that although they sit on the Setting Panels, they do not receive any feedback from the Chief Examiners or Chief Markers. The general dissatisfaction was the fact that the examination papers assume a level of accomplishment that pupils have not reached. They use terminology which pupils

do not understand, especially the rubric words. Pupils cannot understand such imperative verbs, as discuss, illustrate and explain because these words have "specialised meanings in examination papers". Pupils fail because they are not sure of what they mean so they are uncertain of what to do. Asked if the CDC intended to do something about it, the specialists did not indicate that this problem was being considered although the Head of the English Department reported that such terminology has been included in the new Senior Secondary School English Literature Syllabus.

3.10 The Role of Teacher-Training Institutions

From the Interview Schedule E, it was learnt that although these centres train teachers, they appeared ignorant about what teachers are doing in schools. This raises the question of how these institutions evaluate their training programmes. They do not receive any copies of either the junior or senior national examination papers. They are not involved in the preparation of the examinations. If they were so involved, they would be in a better position to know how best to train teachers for the benefit of the Zambian secondary schools. From Schedule E, it was also learned that the institutions incorporated examinations' setting in their training programmes. There was no indication of emphasis on language use. The 1987/88 Course Outlines, which do not reflect any changes in the previous ones (1984-87), showed very little emphasis on Question Construction

in either subject (Appendix 15). A few in-service UNZA students from both training colleges (Nkrumah and Copperbelt) said training in assessment was essentially content-biased even at UNZA. Their college and UNZA notes showed that very little practice was allowed them - a short class assignment was all that was required.

NOTES:

1. Although the research had argued against the use of features (p. 30), they felt that it was inappropriate to use condition because the plantation was already growing, according to the construction of the question.
2. They had agreed that the use of between was wrong.
3. One teacher objected to the Group 2 version (when it was suggested to him) because he felt that this describes an equatorial plantation, assuming that C is the answer. This cannot, as such, have a season, but rather a "picking period".

CHAPTER FOUR

4.0 DISCUSSION OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

4.1 Implications of Results for the Examination System

The results reported in the preceding chapter have shown that there is a language problem in the Zambian junior secondary school public examination papers. In spite of the fact that examinations are now set by Zambian speakers of English, Zambian pupils find problems in interpreting the examiners' intentions (Fig. 6: 56). Since it has been demonstrated that when the use of language of the question is improved results are also improved, it can be concluded that Zambian public examination setters find it difficult to put their intentions into words (English), which also gives the impression that they do not know the language and/or content of their subjects.

The linguistic analyses of Group 1 questions gives the impression that in a given number of examination questions with linguistic inappropriateness, the misapplication of grammatical and pragmatic principles seems to cause more problems of communication than the other linguistic principles (see Fig. 2). The analyses (Fig. 3) suggest that the examiners should pay particular attention to the more frequently misapplied principles than to the less frequently misapplied ones when constructing examination questions. However, one would advise that even the less frequently misapplied principles could have equally adverse effects on the communicativeness of questions.

Question 3, for example (Table III.3: 82) has a low FV in Group 1, but when it is rephrased syntactically (Group 2) (syntax has 7% frequency of occurrence) its FV rises. It should be noted, therefore, that in the encoding-and-decoding-of-sense process, the linguistic principles interact. The analyses have shown that in a given question more than one principle may be misapplied so that the misinterpretation of that question could be due to the total effect of all the linguistic principles misapplied in that question. For instance, the misapplication of the lexical principle in Example 2 (p.12) gives rise to a semantic problem. However, it does mean that in teaching pupils the language of a subject, the grammatical and pragmatic principles should be emphasized because they appear to be more problematic.

The results then have implications for the reorganisation of the whole examination system, the training of teachers both in the field and in training institutions, and for in-service courses for setters and markers.

4.2 Procedures for Setting and Marking Examinations

On pages 57-8 a rather surprising but perhaps justifiable situation in the examination system presents itself. While the Ministry has laid down examination preparation procedures, the setting and marking panels follow their own. But, in view of what examiners feel and say about the difficulties in preparing examination questions, the breach of official

procedures would not be prudent since it might aggravate the problem of preparing examinations. It is, thus, recommended that the Inspectors of schools reinforce these procedures to protect candidates from possible misuse of language by examiners.

4.3 Appointment of Chief Examiners

The existing set-up (p. 57) seems adequate but the criteria for Chief Markers should be different to include competence and training. During the researcher's discussion with the Geography and former General Science Chief Examiner, it was pointed out that, ideally, the Chief Markers ought to be trained to be able to deal with the delicate tasks of the moderating of marks, the defending of marking keys, deciding on candidates' answers in case of doubts/disagreements on the part of examiners and the defending and explaining of the examiners' intentions. Since Chief Markers are in a better position than examiners to evaluate both the questions and pupils' interpretations, it is proper that it be they who should set the questions. As examinations determine the future of the child and, therefore, of the nation, every effort should be made to have trained and knowledgeable personnel in the system. Like the Chief Examiners, the Chief Markers must be the kind of persons who know their subject well. In order to mediate effectively between the examiners, examinees and markers (teachers), the Chief Marker must have a sound knowledge of the language of the examination. He ought to have the skills and techniques of wording an examination

question in order to advise on the pupils' performance, and on the relationship between the wording of questions and pupils' interpretation of and answers to those questions.

4.4 New Set-up: A Proposal

In recognition of the difficulties in setting an effective assessment instrument in Zambia, it is proposed that the Examination Council of Zambia assume the responsibility for running the whole examination system to replace the existing system, which, according to the ECZ Deputy Director, does not have any role in the JSSLE. It would require a nucleus of highly-trained personnel whose task would be to set, administer and co-ordinate all examinations in the country. Such a body would comprise persons qualified in Educational Psychology, Philosophy, Applied Linguistics and in a given examination subject to function as consultants only. Knowledge about Educational Research would be an added advantage.

The ECZ would work in close liaison with subject Inspectors of Schools, teacher-training institutions and the CDC. Inspectors of schools would be advised on training requirements in this area, and the CDC would advise on coursebooks and other teaching materials. This arrangement should monitor content and the language use in examinations to ensure communicativeness of the questions.

The CDC or the Ministry should train and employ specialists in English for Specific/Academic Purposes (ESA/ESP) in each

subject in the curriculum. These specialists could advise on both syllabuses/methodology and also on examination wording. Close co-ordination of these organs' activities would be absolutely essential.

4.5 Teacher-Training Institutions and Inspectors of Schools

Reports from teacher-training institutions (Appendix 5, Schedule E: 90) indicate that institutions accept the responsibility of training teachers in setting examinations but it is not clear whether they know what this work entails. What is clear is that teachers do not know how to set examinations. Evidence from (Schedule E.5) and Course-Outlines (Appendices 15, 16) shows that the trainers do not seem to be training teachers in examination setting as a special component of the training programme. It is thus recommended that the existing syllabuses be restructured as explained below. Besides subject content, the course outlines should include, at all levels of the curricula: Use and Form of English, Language Varieties and Theories of Language of Examinations. At (higher) levels, Applied Linguistics (Teaching and learning English as a Second Language; Language and thought; Effective questioning and explaining) and Skills in Examination Setting (i.e.: Application of theories of language of examinations) should be taught.

The type of training that this study advocates is one that would produce teachers who know both the theory and practice

of the task - teachers who not only know the subject content but who are also linguistically conversant with examination-question construction.

Given the fact that the examiners' intentions are misunderstood and misinterpreted not only by the examinees but by the teachers, experts and even the setters themselves, then one begins to understand the immensity of the problem and realises the need to codify the Zambian variety of English (p. 3). But until then, teachers in schools should ignore the other diffuse varieties and stick to the standard variety - the English that teachers of English teach in class. This is the English candidates seem to understand - (e.g. the Group 2 version).

Since the teachers' general problem has to do with the use of English and putting their intentions into words, this study identifies three needs of the student-teachers in a training institution. They need to be:

- (a) reminded of the basic grammar, lexis, cohesion, pragmatics, semantics, syntax of English so that when they set examinations, they will be able to do it within the confines of the accepted forms of the language.
- (b) taught the register for their teaching subjects in order for them to handle the concepts in those subjects well.
- (c) taught the special rubric words for examination questions which should also be codified by the

CDC, i.e., such examination terminology as explain, discuss, describe, name and state.

To do this teacher-training institutions could:

- (a) mount a basic English course where everyone is taught the use of English. In this course, teacher-tranees could learn the examination terminology theoretically and practically.
- (b) teach English for Specific/Academic Purposes.

The teacher-trainee would study the application of linguistic principles to the construction of examination questions. The ECZ should allow teacher-training institutions access to actual answer-scripts (names of candidates could be erased) for practical lessons.

Past examination papers and Chief Examiners'/Markers' reports would need a wider circulation for teacher-training purposes.

4.6 The Serving Teacher

Going by what the Geography Chief Examiner said about teachers' and his avowed incompetence to set examinations, this study could conclude that teachers are equally handicapped in preparing pupils for examinations. In fact, the analyses (Appendix 12:128-176) support this observation that there are considerable disagreements amongst experts about the interpretation of examination language (Table II.1). The

training of the teacher, then, should be an on-going task. Outside college/university, the Inspectors of schools would run workshops from time to time to keep the teacher abreast of the current trends in theories and preparation of examinations. With this training, the teacher would be able to prepare the pupils for examinations so that the pupil would cope with the examination jargon. It is recommended that to support such a venture, the CDC and the MGEC circulate a list of the examination jargon with definitions, examples and model exercises (Appendix 11).

4.7 The Chief Marker

As indicated by the findings (p.58), the Chief Marker plays the important role of mediating between the Chief Examiner and the candidate. Through him, the examiner should learn about the pupils' language and other problems in the examination paper. It is, therefore, understandable that he/she should be trained. But what would this training involve? It is suggested that he/she should be knowledgeable about what is involved in constructing an examination question. He/she should be armed with a firm background knowledge of his/her own subject, and Psycholinguistics and Applied Linguistics, and that he/she should be able to evaluate the questions on the basis of their content and communicativeness. Chief Markers need not be the same persons as the Chief Examiners to ensure that the questions receive more objective scrutiny.

4.8 The Role of the Curriculum Development Centre

In the proposed set-up, the role of the CDC would be more prominent than is now the case. It would be its role to produce examination syllabuses with a list of examination terminology which should be taught to pupils. If teachers needed assistance in the presentation of this vocabulary, they should seek it from the English Department in their schools. Such materials could be sent to ECZ, the Inspectorate (at both national and regional level), teacher-training institutions and teachers.

4.9 The Role of the English Departments in Schools

"Pupils' Performance in Tests" (p. 50) and "Analysis of the language, and Opinions of the Test Papers" (pp. 50-56), imply that the teacher of English should now extend his role to helping with the teaching of ESP/EAP in his/her school besides teaching the normal language skills. Talking to a Mr. Taylor, Head of the English Department at CDC in 1988 about such a possibility, the researcher learned that this had been tried in the early 80's. It did not succeed because of what he termed 'practical and psychological constraints'. In some schools, he said, English teachers have successfully acted as resource personnel to control language use at informal levels and have acted as quality controls for examinations, making sure English was absolutely correct at formal levels. In these schools, teachers of other subjects, however, regard this as interfering

in their work. Teachers of English, too, are not brave enough to point out these teachers' weaknesses. Again, this is a problem to which the CDC, the Inspectorate and the teacher-training institutions should address themselves. They should instil a sense of sharing knowledge without shame and without jealousy. Knowledge should be seen as national treasure. Teachers should accept criticism as indispensable for the transformation of the Zambian society socially, economically and intellectually.

At a meeting between Mr. Taylor and the researcher it was felt that while language control may be impossible at school level, it must be enforced at national level. It was, thus, proposed that:

1. Pretesting must be a regular and necessary part of any examination production mechanism.
2. Quality control mechanisms, where English specialists should be allowed to vet papers, that they feel unacceptable, should be formulated and enforced.
3. When the ECZ takes over the entire examination system, it should ensure that its specialists in setting examinations stringently enforce this development.

It would also be worthwhile to include in this procedure consultants with the personnel in the departments of Psychology and English at the UNZA, CDC and Ministry of Education's Inspectorate. These "specialists" are likely to offer criticism

which could help improve the clarity and expression of the questions. The present practice of pretesting the papers on one pupil, as reported by the Geography Chief Examiner, should be replaced by one of involving a large number of pupils with varying abilities in several urban and rural schools. Only then could the instruments be deemed valid.

The extra role of the teacher of English implies that he would have to supplement the efforts of other subject teachers by reinforcing, in his language classes, the teaching of ESP/EAP, teaching the different registers and giving more practice drills in the application of language principles almost on the same lines as the functions of the Communication Unit at the National Institute of Public Administration (NIPA) (Tambulukani, 1986). The teaching of ESP/EAP should form part of the efforts to prepare pupils for examinations by making the pupils aware of the examination jargon through its study and practice.

Finally, two important points need to be made about language and pupil achievement in school. It would make things easier if teachers understood that success in any school subject is, to a large extent, success in the language of that subject. Therefore, if the teachers wanted pupils to do well in their subjects, they should take on the responsibility of teaching pupils the language of their subjects. Secondly, and correspondingly, this means that if a pupil's performance is poor, it is likely, as this study has shown, that language is an important causal factor. Similarly, if a teacher's language is not clear and specific, this is likely to affect adversely the

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L I S T O F T A B L E S

TABLE II.1 LINGUISTIC EVALUATION OF GROUP 1 QUESTIONS
BY 4 TEAMS OF TEACHERS

| | QUESTION | CORRECT | INCORRECT | VAGUE | AMBIGUOUS |
|--|----------|---------|-----------|-------|-----------|
| | 1 | 1 | 1 | 1 | 1 |
| | 2 | 0 | 2 | 1 | 0 |
| | 3 | 0 | 2 | 1 | 0 |
| | 4 | 1 | 0 | 2 | 0 |
| | 5a | 0 | 0 | 1 | 1 |
| | b | 1 | 1 | 0 | 0 |
| | c | 1 | 1 | 0 | 0 |
| | d | 1 | 1 | 0 | 0 |
| | e | 2 | 0 | 0 | 0 |
| | f | 1 | 1 | 0 | 0 |
| | g | 0 | 1 | 0 | 1 |
| | h | 1 | 1 | 0 | 0 |
| | 6a | 2 | 0 | 0 | 0 |
| | b | 2 | 0 | 0 | 0 |
| | c | 2 | 0 | 0 | 0 |
| | d | 0 | 1 | 1 | 1 |
| | e | 1 | 0 | 1 | 0 |
| | f | 2 | 0 | 0 | 0 |
| | g | 0 | 1 | 1 | 0 |
| | h | 1 | 1 | g | 0 |
| | i | 0 | 1 | 1 | 1 |
| | k | 1 | 1 | 0 | 0 |
| | 7A | 2 | 0 | 0 | 0 |
| | B | 2 | 0 | 0 | 0 |
| | C | 2 | 0 | 0 | 0 |
| | D | 2 | 0 | 0 | 0 |
| | E | 2 | 0 | 0 | 0 |
| | F | 0 | 1 | 1 | 0 |
| | G | 0 | 1 | 1 | 0 |
| | H | 1 | 1 | 0 | 0 |
| | I | 2 | 0 | 0 | 0 |
| | J | 1 | 0 | 0 | 1 |
| | 8 1 | 1 | 0 | 1 | 0 |
| | 2 | 2 | 0 | 0 | 0 |
| | 3 | 2 | 0 | 0 | 0 |
| | 4 | 0 | 1 | 2 | 0 |
| | 5 | 0 | 1 | 2 | 0 |
| | 9 1 | 0 | 1 | 2 | 0 |
| | 2 | 0 | 0 | 2 | 0 |
| | 3 | 2 | 0 | 1 | 0 |
| | 10A | 1 | 0 | 0 | 1 |
| | B | 1 | 1 | 0 | 0 |
| | C | 1 | 0 | 0 | 1 |
| | D | 0 | 2 | 2 | 0 |
| | E | 0 | 2 | 0 | 0 |

Qns. 1, 2, 5 - 7 - Geography

Qns. 3, 4, 8 - 10 - General Science

Each school had an evaluating team for each subject. The team was headed by the Subject Head of Department. If a question had more than 2 different evaluations, teachers must have failed to reach an agreement.

TABLE III.2: NUMBER OF PUPILS WHO ATTEMPTED EACH QUESTION

| QUESTION NUMBER | G R O U P A | | G R O U P B | |
|-----------------|----------------------|------------------|----------------------|------------------|
| | NO. OF ATTEMPTS | TOTAL CANDIDATES | NO. OF ATTEMPTS | TOTAL CANDIDATES |
| 1 | 48 | 50 | 47 | 50 |
| 2 | 49 | 50 | 46 | 50 |
| 3 | 45 | 50 | 46 | 50 |
| 4 | 50 | 50 | 41 | 50 |
| 5 a | 43 | 50 | 43 | 50 |
| b | 49 | 50 | 46 | 50 |
| c | 41 | 50 | 34 | 50 |
| d | 41 | 50 | 36 | 50 |
| e | 36 | 50 | 30 | 50 |
| f | 47 | 50 | 43 | 50 |
| g | 44 | 50 | 36 | 50 |
| h | 48 | 50 | 47 | 50 |
| 6 a | 46 | 50 | 47 | 50 |
| b | 40 | 50 | 45 | 50 |
| c | 44 | 50 | 47 | 50 |
| d | 35 | 50 | 38 | 50 |
| e | 35 | 50 | 27 | 50 |
| f | 46 | 50 | 47 | 50 |
| g | 43 | 50 | 41 | 50 |
| h | 47 | 50 | 47 | 50 |
| i | 31 | 50 | 30 | 50 |
| j | 32 | 50 | 37 | 50 |
| k | 40 | 50 | 44 | 50 |
| 7 a | 48 | 50 | 46 | 50 |
| b | 46 | 50 | 43 | 50 |
| c | 46 | 50 | 49 | 50 |
| d | 45 | 50 | 49 | 50 |
| e | 41 | 50 | 42 | 50 |
| f | 47 | 50 | 46 | 50 |
| g | 48 | 50 | 46 | 50 |
| h | 39 | 50 | 42 | 50 |
| i | 39 | 50 | 40 | 50 |
| j | 40 | 50 | 39 | 50 |
| 8 1 | 48 | 50 | 43 | 50 |
| 2 | 44 | 50 | 42 | 50 |
| 3 | 44 | 50 | 46 | 50 |
| 4 | 41 | 50 | 44 | 50 |
| 5 | 34 | 50 | 39 | 50 |
| 9 1 | 45 | 50 | 46 | 50 |
| 2 | 47 | 50 | 45 | 50 |
| 3 | 41 | 50 | 36 | 50 |
| 10A | 38 | 50 | 34 | 50 |
| B | 35 | 50 | 34 | 50 |
| C | 30 | 50 | 33 | 50 |
| D | 33 | 50 | 33 | 50 |
| E | 28 | 50 | 30 | 50 |
| TOTAL = 46 | MEAN ATTEMPTS= 41.89 | | MEAN ATTEMPTS= 41.13 | |

TABLE III.3: THE FACILITY VALUES OF GROUPS 1 AND 2 QUESTIONS

| QUESTION | G R O U P 1 | | G R O U P 2 | |
|---------------|-------------------|----|-------------------|----|
| | CORRECT RESPONSES | FV | CORRECT RESPONSES | FV |
| 1 | 19 | 40 | 19 | 40 |
| 2 | 5 | 10 | 6 | 13 |
| 3 | 4 | 9 | 6 | 13 |
| 4 | 15 | 30 | 21 | 51 |
| 5 a | 0 | 0 | 1 | 2 |
| b | 0 | 0 | 17 | 37 |
| c | 4 | 10 | 11 | 32 |
| d | 30 | 73 | 12 | 33 |
| e | 0 | 0 | 1 | 3 |
| f | 38 | 81 | 17 | 40 |
| g | 1 | 2 | 12 | 33 |
| h | 2 | 4 | 6 | 13 |
| 6 a | 34 | 74 | 31 | 66 |
| b | 16 | 40 | 14 | 31 |
| c | 11 | 25 | 32 | 68 |
| d | 2 | 6 | 10 | 26 |
| e | 0 | 0 | 5 | 19 |
| f | 0 | 0 | 11 | 23 |
| g | 12 | 28 | 14 | 34 |
| h | 0 | 0 | 5 | 11 |
| i | 0 | 0 | 2 | 7 |
| j | 13 | 41 | 27 | 73 |
| k | 31 | 75 | 39 | 89 |
| 7 a | 38 | 79 | 35 | 76 |
| b | 42 | 91 | 39 | 91 |
| c | 35 | 76 | 34 | 69 |
| d | 28 | 62 | 30 | 61 |
| e | 26 | 63 | 22 | 52 |
| f | 3 | 6 | 13 | 28 |
| g | 0 | 0 | 5 | 11 |
| h | 6 | 15 | 13 | 31 |
| i | 4 | 10 | 9 | 23 |
| j | 18 | 45 | 25 | 59 |
| 8 1 | 9 | 19 | 16 | 37 |
| 2 | 20 | 45 | 20 | 48 |
| 3 | 3 | 7 | 5 | 11 |
| 4 | 9 | 22 | 21 | 48 |
| 5 | 2 | 6 | 15 | 38 |
| 9 1 | 4 | 9 | 6 | 13 |
| 2 | 6 | 13 | 4 | 9 |
| 3 | 3 | 7 | 3 | 8 |
| 10A | 1 | 3 | 15 | 44 |
| B | 6 | 17 | 21 | 62 |
| C | 6 | 20 | 17 | 52 |
| D | 4 | 12 | 16 | 49 |
| E | 3 | 11 | 5 | 17 |
| MEAN FV = 26% | | | MEAN FV = 37% | |

TABLE III.4: FACILITY VALUE BY INTERVAL ON GROUP 1 AND GROUP 2 QUESTIONS

| GROUP 1 QUESTIONS | F.V. INTERVAL | GROUP 2 QUESTIONS | EVALUATIVE REMARK |
|---|---------------|---|---------------------|
| 2,5a,5b,5c,5g,5h 6d,6e,6f,6h,6i,7f,7g 7i,3,8.3,8.5,9.1,9.3 10A Total 0 21 | 0.10 | 5a, 5e, 6i 9.2, 9.1 Total 0 5 | Extremely Difficult |
| 7h,8.1,9.2,10B,10C,10D 10E Total = 7 | 11-20 | 2,5h,6e,6h, 3, 8.1,9.1 10E 7g Total = 9 | Very Difficult |
| 6c,6g,4, 8.4 Total = 4 | 21-30 | 6d,6f,7f,7i Total = 4 | Difficult |
| 1. 6b Total = 2 | 31-40 | 1,5b,5c,5d,5f 5g,6b,6g,7h 8.1, 8.5 Total = 11 | Quite Difficult |
| 6j,7j, 8.2 Total = 3 | 41-50 | 8.2,8.4,10A,10D Total = 4 | Average |
| Total = 0 | 51-60 | 4, 10C Total = 2 | Fairly Easy |
| 7d, 7e Total = 2 | 61-70 | 7e,7j,6a, 6c,7c 7d,10B Total = 7 | Quite Easy |
| 5d,6a,6k,7a,7c Total = 5 | 71-80 | 6j,7a Total = 2 | Easy |
| 5f Total = 1 | 81-90 | 6k Total = 1 | VERY Easy |
| 7b. Total = 1 | 91-100 | 7b. Total= 1 | EXTREMELY Easy |

NB: The higher the interval level the easier the Question. Before correction (Group 1) the highest concentration was at the 'Extremely difficult' end and after correction (Group 2) the greatest concentration was at the 'Quite Difficult' level. The paper became easier.

TABLE III.5: EFFECT OF LANGUAGE ON GROUP 1 QUESTIONS IN TERMS OF F.V. INTERVALS

| INTERVALS OF CHANGE | ← MORE DIFFICULT | | | | | NO CHANGE | LESS DIFFICULT → | | | | |
|---------------------------|------------------|------|----|----|-----------------|--|--|------------------------------------|----------------------------------|------------------|------|
| | -5 | -4 | -3 | -2 | -1 | | +1 | +2 | +3 | +4 | +5 |
| QUESTIONS | | | | | 9.2 6a 7c | 1, 5h 5e, 6i 9.2, 7e 10E, 8.2 7d, 7b 6b, 7a | 2 5h, 6e 6h, 3 8.3, 9.1 6g, 7j 6k, 7g | 6d, 6f 7f, 7i 7h, 8.1 8.4 | 5b 5c, 5g 8.5, 4 6j 10D | 10A 10C 6c | 10B |
| TOTALS: | 1 | 1 | 0 | 0 | 3 | 12 | 11 | 7 | 7 | 3 | 1 |
| % | 2.17 | 2.17 | 0 | 0 | 6.52 | 26.08 | 23.91 | 15.21 | 15.21 | 6.52 | 2.17 |

A P P E N D I C E S

APPENDIX 1: SCHEDULE A: CANDIDATES

School: _____ Date: _____

Region: _____

(GIVE BACK THE QUESTION PAPERS)

1. How did you find the test? Easy____Medium____Difficult_____

2. Did you manage to answer all the questions? Yes___No_____

3. Were there any questions you found particularly difficult?

Yes _____ No _____

Which ones? _____

4. Why do you think Q. _____ was difficult? _____

5. What do you think this question wants you to do? _____

6. If the answer (to question _____) was _____, what you would you say about that (the blank represents the examiner's intention)?

(REPETITION OF 4, 5 and 6. FOR EACH DIFFICULT QUESTION)

7. Does anybody have anything else to say about these questions?
(WRITE ANSWER ON BACK)

Thank you very much, all of you. I wish you good luck in your final examinations!

APPENDIX 2: INTERVIEW SCHEDULE B: HEADS OF SUBJECT DEPARTMENT/TEACHERS SUBJECT:

Name: _____ Date: _____

Position: _____

Department: _____

School: _____

*YOU NEED NOT WRITE YOUR NAME

(The Head/subject teacher will have gone through the Group 1 test paper and the Answer Key)

1. How long have you taught this subject to Gr. 9? _____
2. Having gone through the question paper and the Answer Key, do you think the question is appropriate in view of the answer(s) given? What inadequacies, if any, does it have? (Tick in appropriate box _____)

(Poor presentation _____

(Incorrect use of English _____

For researcher's use only

(Inappropriate Content _____

3. How do you evaluate the questions? (Please underline appropriate)

- | | | |
|--|-----|------------------------------|
| 1. CORRECT/INCORRECT/VAGUE/AMBIGUOUS | (2) | CORRECT/INCORRECT/VAGUE/AMBI |
| 5.a) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | b) | CORRECT/INCORRECT/VAGUE/AMBI |
| c) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | d) | CORRECT/INCORRECT/VAGUE/AMBI |
| e) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | f) | CORRECT/INCORRECT/VAGUE/AMBI |
| g) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | h) | CORRECT?INCORRECT/VAGUE/AMBI |
| 6.a) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | b) | CORRECT/INCORRECT/VAGUE/AMBI |
| c) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | d) | CORRECT/INCORRECT/VAGUE/AMBI |
| e) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | f) | CORRECT/INCORRECT/VAGUE/AMBI |
| g) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | h) | CORRECT/INCORRECT/VAGUE/AMBI |
| i) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | j) | CORRECT/INCORRECT/VAGUE/AMBI |
| k) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | | |
| 7.a) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | b) | CORRECT/INCORRECT/VAGUE/AMBI |
| c) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | d) | CORRECT/INCORRECT/VAGUE/AMBI |
| e) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | f) | CORRECT/INCORRECT/VAGUE/AMBI |
| g) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | h) | CORRECT/INCORRECT/VAGUE/AMBI |
| i) CORRECT/INCORRECT/VAGUE/AMBIGUOUS | j) | CORRECT/INCORRECT/VAGUE/AMBI |

- 3. CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- 4. CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- 8. CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- b) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- c) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- d) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- e) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- 9. CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- b) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- 10. CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- b) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- c) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- d) CORRECT/INCORRECT/VAGUE/AMBIGUOUS
- e) CORRECT/INCORRECT/VAGUE/AMBIGUOUS

- 4. How would you rephrase the question in order to better elicit that answer?
- 5. Have you been involved in either setting or marking Grade 9 national examinations? (a) Marking: YES/NO) Delete what does not
b) Setting: YES/NO) apply
- 6. If you answered YES to 5 a), do you follow the marking key strictly?
YES/ _____ NO _____ SOMETIMES _____ TICK ()

Please explain your answer: _____

- 7. Do you have anything else to say about the construction of exam. questions? Yes _____ No _____

If yes, please elaborate your answer: _____

8. Thank you very much for your cooperation.

APPENDIX 3: SCHEDULE C: SUBJECT INSPECTOR/CURRICULUM SPECIALIST

Name: _____ Date: _____

Position: _____ Department: _____

1. As _____, are you involved in Grade 9 national examinations?

Yes _____ No _____

2. If yes, in what way? _____

3. During your tenure in office, what has been your general impression of Gr. 9 pupils' performance in the national examinations? _____

4. Concerning the examination papers, are you satisfied with:

a) the content? _____

b) the presentation of questions? _____

c) the language used? _____

5. What effect does the inappropriate use of language have on the pupil's thinking and the answer he gives? _____

6. How could the problem of inappropriate language use in examination papers be solved? _____

7. Do you receive reports from the Chief Marker? Yes _____ No _____

8. May I look at the reports from 1984-1987?

9. How are these reports used to improve the quality of examination papers? _____

Thank you very much, Mr. _____ for being so helpful to me.

APPENDIX 4: SCHEDULE D: ENGLISH CURRICULUM SPECIALIST

Date: _____

1. As _____, to what extent are you officially involved in preparation of Gr. 9 examination papers for subjects other than English?

2. What has been your impression of the use of language (English) in these examinations? Satisfactory _____ Unsatisfactory _____

If unsatisfactory:

3. Do you have any official channel through which you can address this situation? Yes _____ No _____

Comment: _____

4. If yes, what have you done to correct the situation? and when?

5. Have your efforts had any effect? _____

6. Is there anything else you would like to say about the use of English in examination questions? _____

Thank you very much for being so helpful.

APPENDIX 5: SCHEDULE E: GEOGRAPHY/GENERAL SCIENCE LECTURERS IN
TEACHER TRAINING INSTITUTIONS

Name: _____ Date: _____

Position: _____ Department: _____

Institution: _____

1. Are you in any way involved in the preparation of Gr. 9 national examination papers (JSSLE)? Yes _____ No _____

Please explain your answer _____

2. Do you receive copies of the examination papers? Yes _____ No _____
If yes, what is the purpose of sending them to you? _____

3. Do you receive any advice/information from your subject inspector with regard to the training of **teachers in** setting examination papers? Yes _____ No _____

4. Do you think teachers need training in setting examination papers? Yes _____ No _____

Explain your answer: _____

5. Is examination setting part of your training programme? Yes _____ No _____

Thank you very much for your cooperation.

APPENDIX 6

QUESTION PAPER VALIDATION

Dear Dr/Mr

| QN | GR1 | GR2 |
|-----|-----|-----|
| 1 | 0 | 5 |
| 2 | 1 | 4 |
| 3 | 0 | 3 |
| 4 | 0 | 3 |
| 5a | 0 | 5 |
| b | 0 | 5 |
| c | 0 | 5 |
| d | 0 | 5 |
| e | 0 | 5 |
| f | 0 | 5 |
| g | 0 | 5 |
| h | 0 | 5 |
| 6a | 0 | 5 |
| b | 0 | 5 |
| c | 0 | 5 |
| d | 0 | 5 |
| e | 0 | 5 |
| f | 0 | 5 |
| g | 0 | 5 |
| h | 0 | 5 |
| i | 0 | 5 |
| j | 0 | 5 |
| k | 0 | 5 |
| 7a | 0 | 5 |
| b | 0 | 5 |
| c | 0 | 5 |
| d | 0 | 5 |
| e | 0 | 5 |
| f | 0 | 5 |
| g | 0 | 5 |
| h | 0 | 5 |
| i | 0 | 5 |
| j | 0 | 5 |
| 8.1 | 0 | 3 |
| 2 | 1 | 3 |
| 3 | 1 | 3 |
| 4 | 0 | 3 |
| 5 | 0 | 3 |
| 9.1 | 0 | 3 |
| 2 | 0 | 3 |
| 3 | 1 | 3 |
| 10A | 0 | 3 |
| B | 0 | 3 |
| C | 0 | 3 |
| D | 0 | 3 |
| E | 0 | 3 |

Group 1 Test paper and Group 2 Test paper contain the same questions but the language is different (and in some cases presentation too).

Kindly comment on them. Which question is preferable in terms of language

- a) simplicity?
- b) clarity?
- c) concreteness (as opposed to abstractness)

Once more, thank you very much.

Your questions are:-

Geography: 1, 2, 5, 6, 7.

General Science: 3, 4, 8, 9, 10.

P.S.

You may wish to comment by indicating with a tick (/) in the grid to show your preference

Geography Methods: Dr. Phiri, F.

Dr. Mwenesongole

Mr. Namafe

Science Methods: Dr. Musonda

English Methods: Mr. Ngulube, J.

Mr. Tambulukani, G.

Name: Boy/Girl:

School: Group 1

GEOGRAPHY AND GENERAL SCIENCE TEST

Time: 2 hours

1. There are two sections in this test: Section A and Section B.
 2. Answer both sections.
 3. Read the instructions to each section before answering the questions.
 4. Write all your answers on the question paper.
 5. Do not begin writing before you are told to do so.
-

SECTION A

In this Section, there are 2 parts to every question. Do both parts.

Example 1

What type of residential area is Walale?

- A. Town
- B. Area with permanent buildings
- C. Villages
- D. Other populated areas
- E. Labour lines

Part One: What is this question asking you about?

- (a) This question is asking me about
 - (b) I am not sure what this question is asking me about because.....
 - (i) I don't know the meaning of some of the words; eg.
-

- (ii) The whole question is not clear because the English is confused.
- (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **(D)**

Q.1. According to map evidence, Luanshya Urban is also an administrative centre because it has

- A. many shafts
- B. schools and institutions
- C. DES and DG
- D. hospitals
- E. a golf course

Part One: What is the question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
- (i) I don't know the meaning of some of the words, e.g.
- (ii) The whole question is not clear because the English is confused.
- (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **(D)**

Q.2. A plantation has the following natural conditions. "On gentle slopes of a mountain, rich soils retaining moisture, no waterlogging of soils, annual average temperatures between 17°C and 25°C annual rainfall varies between 1000mm and 2000mm with a dry season."

School _____

Gp. 1

This plantation would be most suitable for the growing of:

- A. Oil palms and rubber
- B. Sisal and cotton
- C. Sugar cane and cocoa
- D. Coffee and tea
- E. Groundnuts and rice

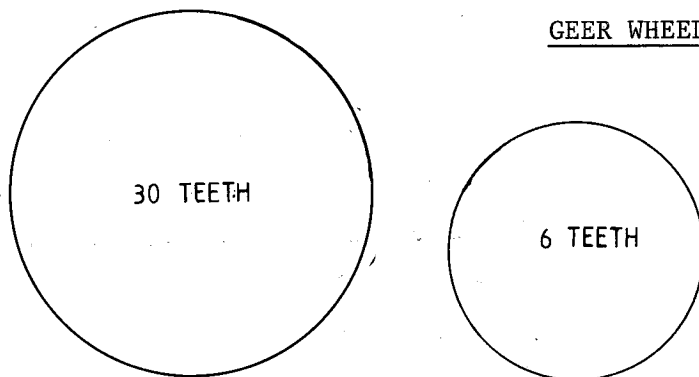
Part One: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because.....
 - (i) I don't know the meaning of some of the words; e.g.
 - (ii) The whole question is not clear because the English is confused.
 - (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **Ⓓ**

Q.3.

GEER WHEELS



In the diagram above, driving the small gear wheel is an arrangement for producing in a large gear wheel.

- A. Low speed and low power.
- B. High speed and high power.
- C. Low speed and high power.

School _____

Gp. 1

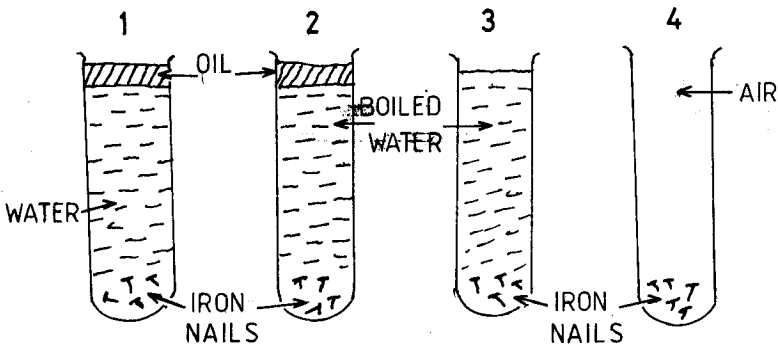
- D. High speed and low power.
- E. No change in speed and power.

Part One: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
 - (i) I don't know the meaning of some of the words; e.g.
 - (ii) The whole question is not clear because the English is confused.
 - (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **(D)**

Q.4.



Small iron nails were left in the four test tubes for two weeks, after this period it would be found that....

- A. the nails in all the test tubes are rusted.
- B. only the nails in tubes 1, 2 and 3 are rusted.
- C. only nails in tube 4 are rusted.
- D. only nails in tubes 1, 3 and 4 are rusted.
- E. the nails in all the test tubes are not rusted.

School _____

Gp. 1

Part One: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because.....
 - (i) I don't know the meaning of some of the words, e.g.
 - (ii) The whole question is not clear because the English is confused.
 - (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. D

SECTION B

Instructions:

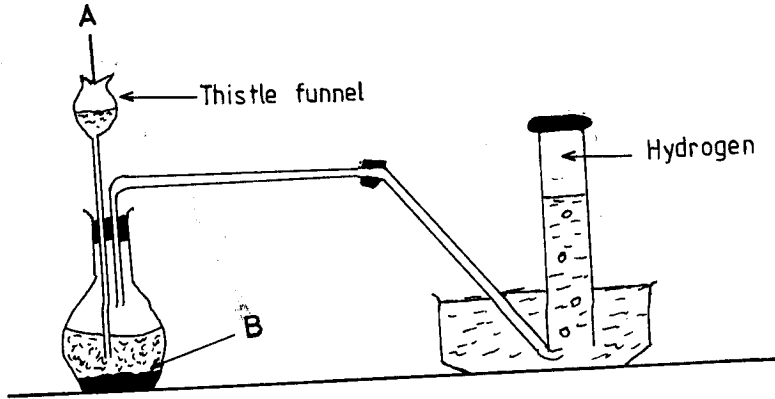
If you have difficulty in answering any of the questions in Section B, do (a) or (b) or both (a) and (b) before you try to answer the question:

- (a) If any part or parts of the question are not clear, underline that part or those parts.
- (b) If the map or diagram is not clear to you, circle the part that is difficult to understand.

School _____

Gp. 1

Example 2



Study the diagram and answer the questions below:

1. Suggest a name for the substance that could be used at the point labeled A.
At A use:
2. On the basis of your answer in 1. What do you think B might be in order to produce hydrogen?

3. Explain why the end of the thistle funnel must be under the surface of the liquid in the flask.
.....

4. Why is it possible to collect the hydrogen by the method in the diagram?

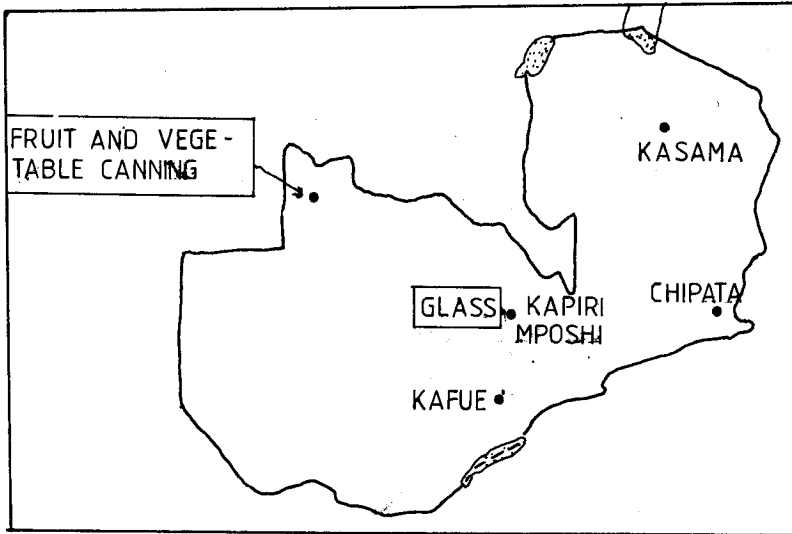
5. Briefly state the identity test for hydrogen.

6. Describe briefly or name an ENTIRELY DIFFERENT way of producing hydrogen.

School _____

Gp. 1

Q. 5. Study the map of Zambia and answer the questions below.



- (a) Name two industries located in Kafue. 2
 (i) (ii)
- (b) State two problems faced by the industries at Mwinilunga. 2
 (i) (ii)
- (c) Ginning industry is located at Lusaka and Chipata. 1
 What is meant by Ginning?

- (d) What do the letters SIDO stand for? 1

- (e) Give two advantages of SIDO. (i) 2
 (ii)
- (f) Give two reasons why the glass industry is located 2
 at Kapiiri-Mposhi. (i)
 (ii)
- (g) Name three agriculture processing industries located in 3
 Kasama.
 (i)
 (ii) (iii)

School _____

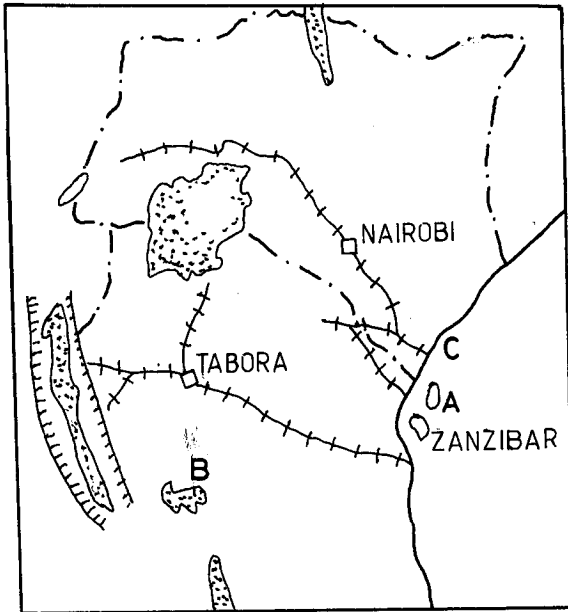
Gp. 1

Q. 5 Contd.

- (h) State two problems faced by the manufacturing industries in Zambia. (i) 2
(ii)

TOTAL 15

Q. 6 Study the following map of East Africa and then answer the questions below.



- (a) Name Island A. 1
(b) Name Lake B. 1
(c) Name Feature marked 1
(d) Name tourist attraction near Town C. 1

School _____

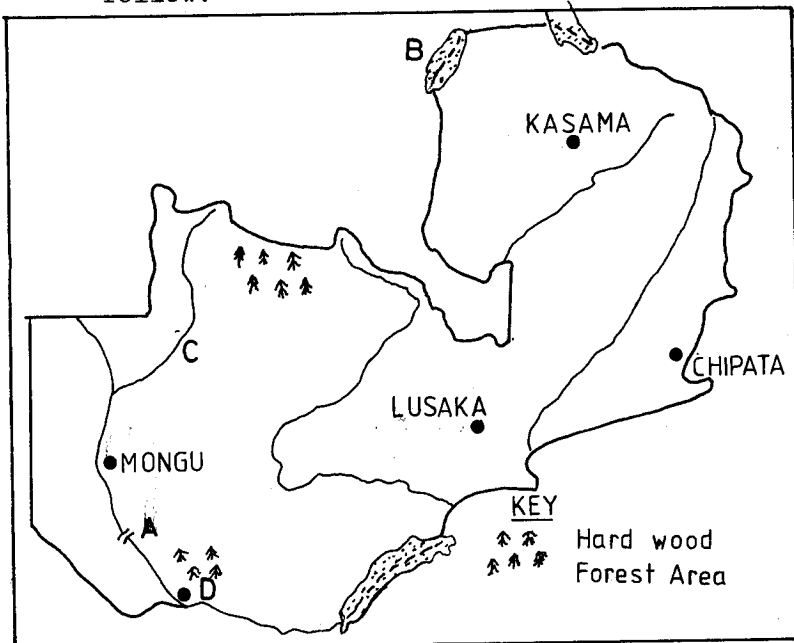
Gp. 1.

Q.6 Contd.

- (e) Name the largest Crater found in Tanzania. 1
.....
- (f) What type of mountain is Ruwenzori? 1
- (g) State two major Countries outside Africa where tourists to Kenya come from. 2
(i) (ii)
- (h) State three reasons why the tourists industry is more developed in Kenya than in Zambia. 3
(i)
(ii)
(iii)
- (i) State two tourist attractions in the Carribbean countries 2
(i) (ii)
- (j) Name one Carribbean Country. 1
- (k) Name one means of transport to the Carribbean area. 1

TOTAL 15

Q. 7 Study the map of Zambia below and answer the questions that follow:



School _____

Gp. 1

Q. 7 Contd.

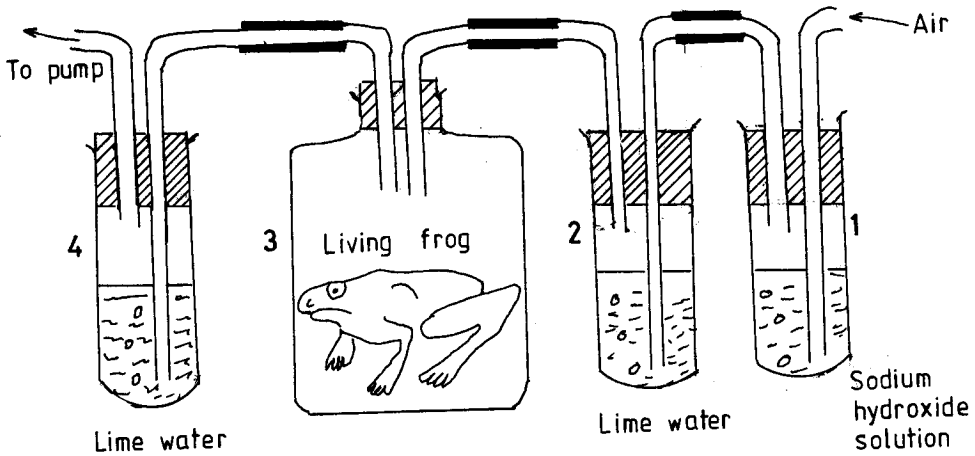
- A. Name Waterfall A 1
- B. Name Lake B. 1
- C. Name River C. 1
- D. Name Town D. 1
- E. Name two hardwood timber trees that are of commercial value in Zambia. 2
 - (i) (ii)
- F. Suggest two uses of hardwood timber 2
 - (i)
 - (ii)
- G. Suggest three reasons why forests should be preserved 3
 - (i) (ii)
 - (iii)
- H. Name two other forest products apart from timber 2
 - (i)
 - (ii)
- I. Give one reason why the Government has established softwood plantations. 1
 -
- J. Name one forest plantation in Zambia. 1
 -

TOTAL: 15

School -----

Gp. 1

Q. 8.



Study the diagram and answer the questions below.

8.1 What do you think is the AIM of the experiment?

8.2 What is the sodium hydroxide for in Tube 1?

8.3 What is the purpose of Tube 2?

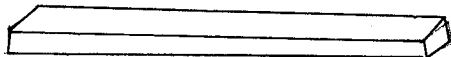
8.4 DESCRIBE the differences in Tubes 2 and 4 you would expect to see after the experiment had been running for a hour or two.

8.5 Explain your answer in 4.

School _____

Gp. 1

Q.9.



In this investigation seven sticks like the one shown above are tested, and the results are shown in the Table.

| | Action with:- | | |
|---|---------------|-------------|-----------|
| | WATER | ELECTRICITY | MAGNET, M |
| A | sinks | conductor | attracted |
| B | sinks | conductor | attracted |
| C | sinks | insulator | none |
| D | sinks | conductor | none |
| E | floats | insulator | none |
| F | floats | conductor | none |
| G | floats | conductor | attracted |

All the sticks looked exactly alike (apart from the letters A - G) and the materials they are made from are to be found in the list below.

CONCRETE STEEL MERCURY IRON HOLLOW IRON CARBON
WOOD GLASS MAGNET ROCK ALUMINIUM COPPER

Answer the Questions below.

1. Write down the letter from the Table of the stick which is most likely to be:-

i. Aluminium _____ ii. Carbon _____

School _____

Gp. 1

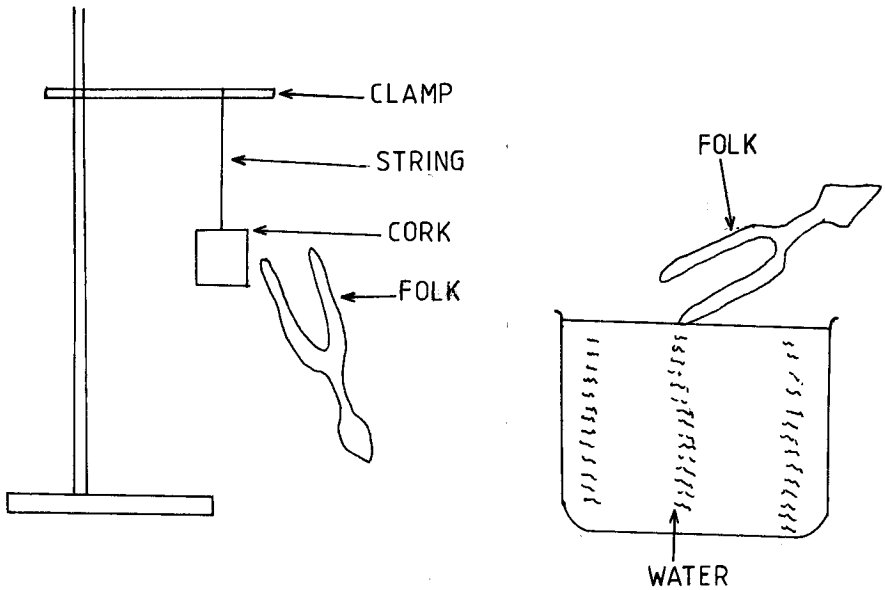
Q. 9 Contd.

2. From the list choose suitable materials for:-

i. Stick G _____ ii. Stick E _____

3. You are told that one of the sticks is a magnet. Briefly describe how you would find it. (2 marks)

Q. 10. A pupil struck a tuning fork against the wall and put it near his ear, he heard a sound. He then performed two other experiments starting with striking it against the wall each time before bringing it in contact with the cork and water as shown below.



School _____

Gp. 1

A. What would you expect to happen to the cork?

B. What do you expect to see on the surface of water?

C. What does this tell you about the way in which a tuning folk produces sound?

D. What happens to the pitch of the tuning folk if you strike it harder?

E. What happens to the pitch of the tuning folk if you use a tuning folk with

i. Shorter prongs? _____

ii. Longer prongs? _____

THE END

Name: _____ Boy/Girl _____

School: _____ Group 2

GEOGRAPHY AND GENERAL SCIENCE TEST

Time: 2 hours

1. There are two sections in this test: Section A and Section B.
 2. Answer both sections.
 3. Read the instructions to each section before answering the questions.
 4. Write all your answers on the question paper.
 5. Do not begin writing before you are told to do so.
-

SECTION A

In this section, there are 2 parts to every question. Do both parts.

Example 1

What type of residential area is Walale?

- A. Town
- B. Area with permanent buildings
- C. Villages
- D. Other populated areas
- E. Labour lines

Part One: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
- (i) I don't know the meaning of some of the words, e.g.

School _____

Gp. 2

- (ii) The whole question is not clear because the English is confused.
- (iii) The map/diagram is not clear (circle the part that is not clear).

Part two: Answer the question by putting a circle around the letter of your choice, e.g. **Ⓓ**

Q. 1 According to the map, which of the following explains why Luanshya is an administrative centre?

It has

- A. many shafts.
- B. schools and other institutions.
- C. a D. E. S. and a D. G.
- D. hospitals.
- E. a golf course.

Part One: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
- (i) I don't know the meaning of some of the words; e.g.
- (ii) The whole question is not clear because the English is confused.
- (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **Ⓓ**

School _____

Gp. 2

Q. 2. A given plantation has the following natural conditions: it is on the gentle slopes of a mountain; it has fertile soils that retain moisture; its soils are not waterlogged; the temperatures there average between 17°C and 25°C; it receives an annual rainfall that varies between 1000mm and 2000mm, and has a dry season. This is a (n) _____ plantation.

- A. oil palms or rubber
- B. sisal or cotton
- C. sugar-cane or cocoa
- D. coffee or tea
- E. groundnuts or rice

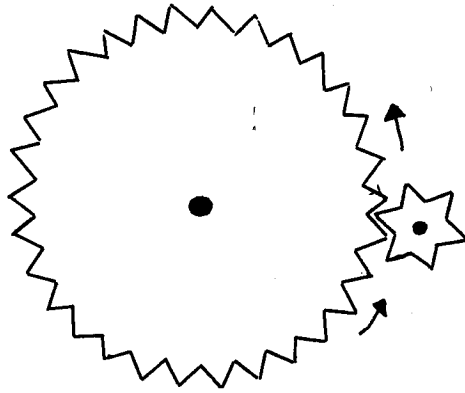
Part one: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
- (i) I don't know the meaning of some of the words; e.g.
- (ii) The whole question is not clear because the English is confused.
- (iii) The map/diagram is not clear (circle the part that is not clear).

Part Two: Answer the question by putting a circle around the letter of your choice, e.g. **Ⓓ**

School _____

Gp. 2



Two gear wheels are arranged as shown in the diagram above. If the small gear wheel is moved as shown, it will produce _____ in the large wheel.

- A. low speed and low power
- B. high speed and high power
- C. low speed and high power
- D. high speed and low power
- E. no change in speed and power

Part one: What is this question asking you about?

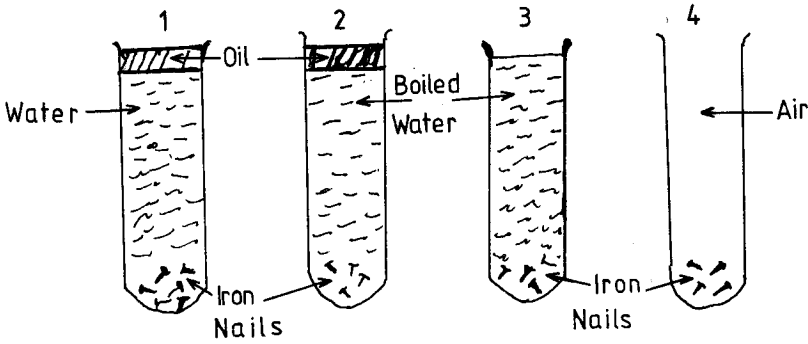
- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
 - (i) I don't know the meaning of some of the words; e.g.
 - (ii) The whole question is not clear because the English is confused.
 - (iii) The map/diagram is not clear (circle the part that is not clear).

School _____

Gp. 2

Part two: Answer the question by putting a circle around the letter of your choice, e.g. **Ⓓ**

Q. 4.



Small iron nails were put in four test tubes as shown in the diagrams above. What happened to the nails after they were left there for two weeks?

- A. The nails in all the tubes were rusted.
- B. Only the nails in tubes 1, 2 and 3 were rusted.
- C. Only the nails in tube 4 were rusted.
- D. Only the nails in tubes 1, 3 and 4 were rusted.
- E. None of the nails in any of the test tubes was rusted.

Part one: What is this question asking you about?

- (a) This question is asking me about
- (b) I am not sure what this question is asking me about because
 - (i) I don't know the meaning of some of words; e.g.
 - (ii) The whole question is not clear because the English is confused.
 - (iii) The map/diagram is not clear (circle the part that is not clear.)

School _____

Gp. 2

Part two: Answer the question by putting a circle around the letter of your choice, e.g. (D)

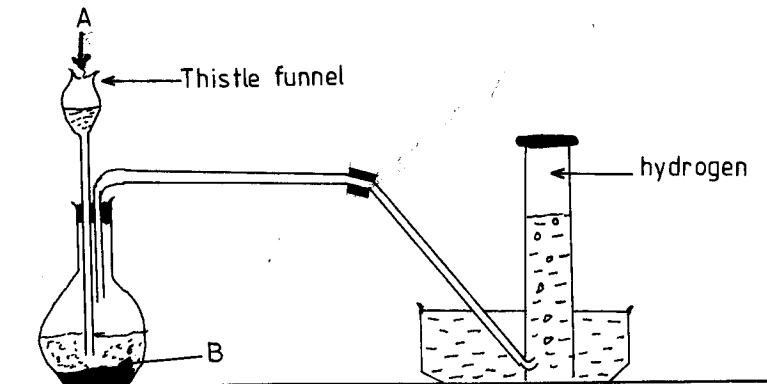
SECTION B

Instructions:

If you have difficulty in answering any of the questions in Section B, do (a) or (b) or both (a) and (b) before you try to answer the question:

- (a) If any part or parts of the question are not clear, underline that part or those parts.
- (b) If the map or diagram is not clear to you, circle the part that is difficult to understand.

Example 2



Study the diagram and answer the question below:

1. Suggest a name for the substance that could be used at the point labelled A.

At A use: _____

2. On the basis of your answer in 1 what do you think B might be in order to produce hydrogen?

School _____

Gp. 2

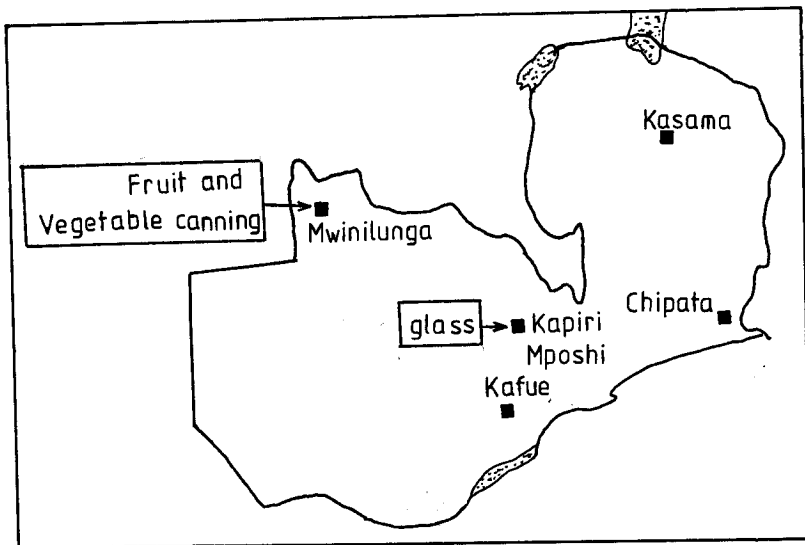
3. Explain why the end of the thistle funnel must be under the surface of the liquid in the flask.

4. Why is it possible to collect the hydrogen by the method in the diagram?

5. Briefly state the identity test for hydrogen.

6. Describe briefly or name on ENTIRELY DIFFERENT way of producing hydrogen.

Q. 5. After studying the map below, answer questions (a) and (b). Then answer the remaining questions from your general knowledge of Geography.



School _____

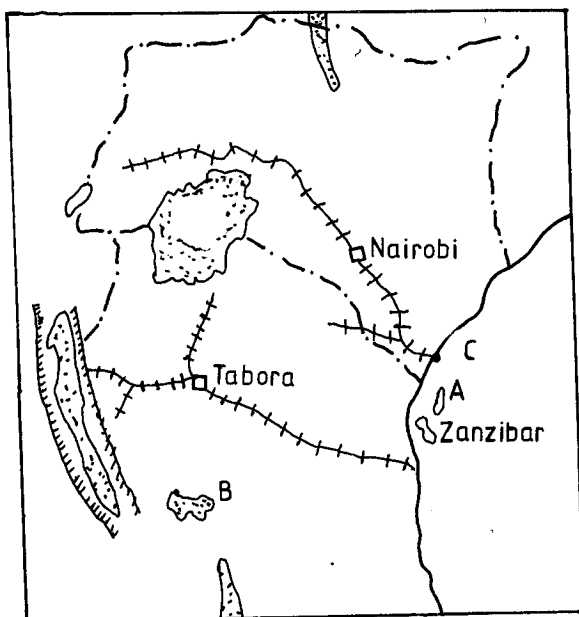
Gp. 2

- (a) State two problems faced by the industries at Mwinilunga.
- (i) _____
- (ii) _____
- (b) Give two reasons why the glass industry is located at Kapiri-Mposhi.
- (i) _____
- (ii) _____
- (c) Give the names of two industries located in Kafue.
- (i) _____ (ii) _____
- (d) The ginning industry is located at Chipata and Lusaka.
What is meant by ginning? _____
- _____
- (e) What do the letters SIDO stand for? _____
- _____
- (f) Give two important activities of SIDO.
- (i) _____
- (ii) _____
- (g) Give the names of any three of the industries which process agricultural products in Kasama.
- (i) _____ (ii) _____
- (iii) _____
- (h) State two problems faced by the manufacturing industries in Zambia.
- (i) _____
- (ii) _____

School _____

Gp. 2

Q. 6. Study the following map of East Africa and answer questions (a)-(d). Then answer the remaining questions from your general knowledge of Geography.



(a) Name Island A. _____

(b) Name Lake B. _____

(c) Name the feature marked []. _____

(d) What is the tourist attraction near town C called?

(e) What is the largest crater in Tanzania called?

(f) What type of mountain is Ruwenzori? _____

(g) Mention two major countries, outside Africa, from which tourists to Kenya come.

(i) _____ (ii) _____

School _____

Gp. 2

(h) State three reasons why the tourist industry is more developed in Kenya than in Zambia.

(i) _____

(ii) _____

(III) _____

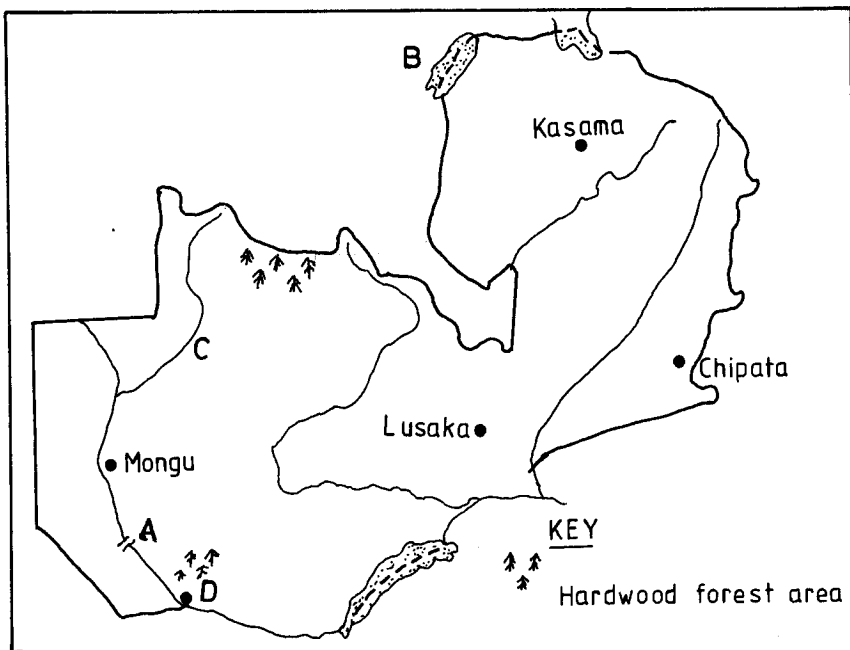
(i) Mention two of the tourist attractions in the Caribbean area.

(i) _____ (ii) _____

(j) Name one Caribbean country. _____

(k) Mention one means of transport to the Caribbean area.

Q.7. After studying the map of Zambia below, answer questions (a)-(d). Then answer the remaining questions from your general knowledge of Geography.



School _____

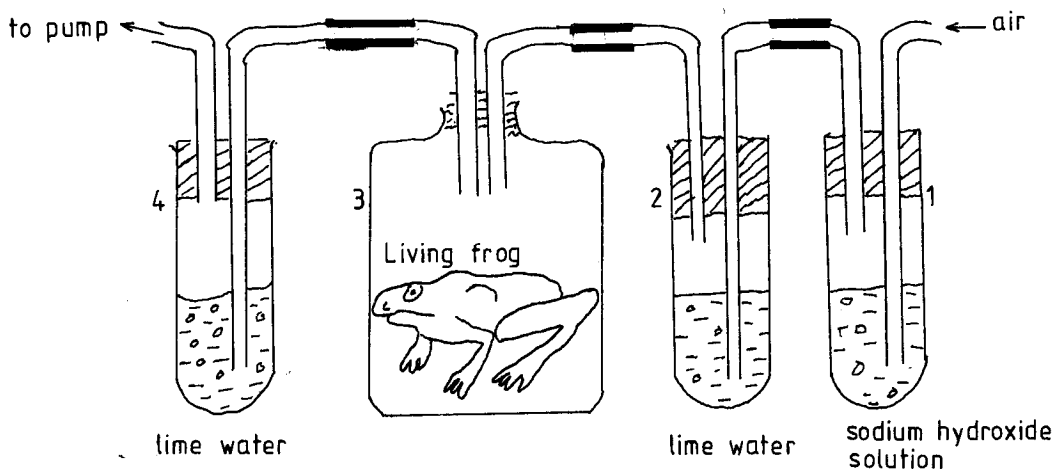
Gp. 2

- (a) Name Waterfall A _____
- (b) Name Lake B. _____
- (c) Name River C. _____
- (d) Name town D. _____
- (e) Give the names of two of the hardwood timber trees that are of commercial value to Zambia.
- (i) _____ (ii) _____
- (f) Mention two of the uses of hardwood timber.
- (i) _____ (ii) _____
- (g) Give three reasons why forests should be preserved.
- (i) _____
- (ii) _____
- (iii) _____
- (h) Mention two forest products other than timber.
- (i) _____ (ii) _____
- (i) Give one of the reasons why the government has established softwood plantations.
- _____
- (j) Give the name of one of the forest plantations in Zambia.
- _____

School _____

Gp. 2

Q.8. Study the diagram below.



Now answer the following questions.

8.1 What is the aim of the experiment? _____

8.2 What is the sodium hydroxide for in tube 1?

8.3 What is the purpose of tube 2? _____

8.4 Describe the difference that you expect to see between tubes 2 and 4 after the experiment has been running for an hour or two.

8.5 Explain the difference you have described in 8.4.

School _____

Gp. 2

Q.9.



In this investigation seven sticks like the one shown above are tested. The results are shown in the table below. Study it carefully.

| Stick | Action with: | | |
|-------|--------------|-------------|--------------|
| | Water | Electricity | Magnet, M |
| A | sinks | conducts | is attracted |
| B | sinks | conducts | is attracted |
| C | sinks | insulates | none |
| D | sinks | conducts | none |
| E | floats | insulate | none |
| F | floats | conducts | none |
| G | floats | conducts | is attracted |

All the sticks look exactly alike (apart from the letters A-G which were written on them). The sticks are made from the following materials:

- CONCRETE STEEL MERCURY IRON HOLLOW IRON CARBON
WOOD GLASS MAGNET ROCK ALUMINIUM COPPER

Answer the following questions:

(a) After reading about each stick in the table, write down the letter of the one which is most likely to be

(i) aluminium _____ (ii) carbon _____

School _____

Gp. 2

(b) From the list, choose a suitable material from which to make

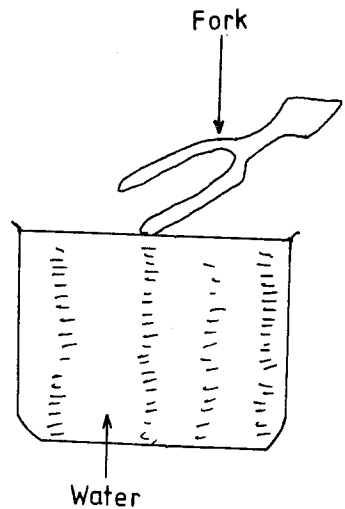
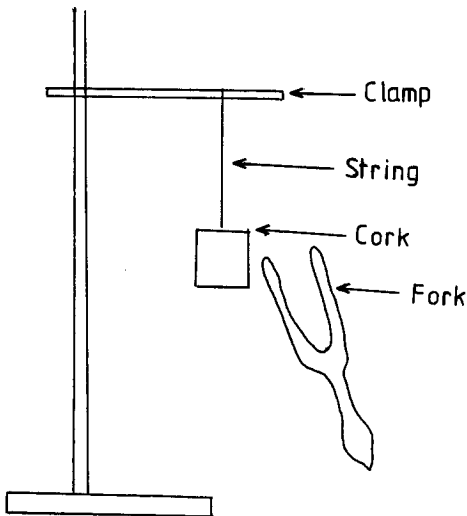
(i) stick G _____ (ii) Stick E _____

(c) You are told that one of the sticks is a magnet. Briefly describe how you would find it.

Q. 10. When a pupil struck a tuning fork against a wall and put it near his ear, he heard a sound. He then made two other similar experiments (EXPERIMENT 1 and EXPERIMENT 2). In the first experiment, he struck the fork against a wall and then touched a hanging cork with it. In the second one, he struck the fork against a wall and then touched a water surface.

EXPERIMENT 1

EXPERIMENT 2



School _____

Gp. 2

Q. 10 Contd.

Answer the following questions:

- (a) What happened to the cork in Experiment 1? _____

- (b) What did the pupil see on the water surface in Experiment 2?

- (c) What do these experiments tell you about how a tuning fork produces sound?

- (d) You strike the tuning fork against a wall and it produces a sound. Then you strike it again against the wall but harder. What happens to the pitch of the sound from the tuning fork?

- (e) What happens to the pitch of the sound if you then use a tuning fork with
- (i) shorter prongs? _____
- (ii) longer prongs? _____

THE END

APPENDIX 9: EXPLANATION OF TESTS

- A. I am going to give you two short tests which contain questions that were taken from Grade 9 past examination papers. The tests will be useful to you in two ways:
- 1) They will help you to revise what you have learned and read, and
 - 2) They will help you prepare for your final exams in November.

In addition, they will help those teachers who set examination papers to find out about the problems you have in answering some examination questions.

- B. As you know, there are many reasons why you fail to answer some examination questions. Some of the reasons are:
- 1) You are afraid of examinations.
 - 2) The instructions are not clear.
 - 3) You forget what you learned and read.
 - 4) You are asked questions about topics you did not cover.
 - 5) Some questions are asked in difficult English.

- C. The tests you will do today will give you the chance to write about problems like these so that solutions can be found.

The tests are NOT going to be marked for passing or failing.

- D. Therefore, it is important for you to attempt all the questions in these tests. You will be given extra time if you need it. Remember that your answers will make it possible for your examiners to help you do better in your examinations. So answer all the questions as well as you can.

- E. It is very important that you read all the instructions carefully before answering the questions. You will be given 10 minutes for reading the question papers.

APPENDIX 10: GEOGRAPHY AND GENERAL SCIENCE TEST (1984-87)
ANSWER-KEY

SECTION A

| | | | | | | | |
|-------------------|---|------|----|-------|-----|-----|----|
| <u>Example 1:</u> | D | G. | 1, | 1987: | 4, | no. | 9 |
| 1. | C | G. | 1, | 1987: | 4, | no. | 8 |
| 2. | C | G. | 1, | 1986: | 12, | no. | 32 |
| 3. | D | G.S. | 1, | 1986: | 17, | no. | 28 |
| 4. | D | G.S. | 1, | 1987: | 19, | no. | 31 |

SECTION B

- Example 2: G.S. 2, 1984: 13-14, no. 7
1. A dilute acid or named acid or WATER
 2. magnesium or zinc or CALCIUM if answer 1 is water
 3. to prevent the gas escaping through the thistle-funnel
 4. hydrogen is insoluble in water
 5. gives a "pop" when ignited (or similar)
 6. electrolysis of water or if calcium used in 2 then acid and metal or vice-versa.
5. G.2. 1986: P4, no.2
- a) - textile mill
- fertilizer making
- plastics
- beat building
- tannery
- yeast making
- concrete sleepers
 - b) - lack of local market
- remoteness to major markets
- lack of cheap power
- lack of capital for expansion
- lack of storage facilities
 - c) - separation of lint from seed cotton
 - d) - Small Industries Development Organisation

APPENDIX 10 CONT'D.

- e) - promotes the use of local raw materials
 - develops local technology
 - enhances import substitution
 - f) - presence of raw materials
 - centrally located for distribution of finished products
 - access to cheap transport
 - access to cheap H.E.P.
 - g) - milling of maize, rice, cassava
 - coffee processing
 - milk processing
 - h) - absence of local capital
 - absence of skilled local labour
 - limited domestic market
 - stiff competition in foreign or domestic market and raw materials
 - over dependence on foreign raw materials
 - problems with the import and export routes
6. G. 2. 1986: 8, no. 6.
- a) Pemba
 - b) L. Rukwa
 - c) Rift Valley
 - d) Sand beaches
 - water sports, fishing
 - coral reefs
 - Marine National Parks
 - game reserves
 - e) Ngorongoro Crater
 - f) block mountain
 - g) - U.S.A.
 - West Germany
 - United Kingdom
 - France
 - H) - Kenya is more accessible from Europe or N. America than Zambia
 - Kenya has more developed tourist attractions
 - Kenya has more developed tourist infrastructure

APPENDIX 10 CONT'D

- Kenya conducts more aggressive publicity
- Kenya's tourist attractions are closer to each other than Zambia's attractions.
- i) - beautiful beaches
 - pleasant sunny climate
 - fishing, water sports
 - coral reefs
- j) - Cuba, Jamaica, Haiti, Puerto Rica, Barbadoes, Trinidad and Tobago, Bahamas
 - By water transport
 - By air
- 7. G.2 1987: 4, no.2
 - A) - Gonye Falls B) Lake Mweru C) Kabompo D) Sesheke
 - E) - Kanyimbi - Mubanga - Mululu
 - Mukwa - Mulombwa - Muwaka
 - Mupapa - Mukusi - Musompa
 - F) - used as pros in the mines
 - used as railway sleepers
 - used in building industry
 - used in making furniture
 - using in making tiles for floors
 - G) - forests prevent soil erosion
 - forests preserve water supplies
 - forests are homes of animals
 - forests purify the air i.e. trees absorb CO₂ and give out oxygen
 - forests provide windbreak
 - H) Hone - Bee wax - Source of fuel i.e. charcoal
 - I) - to cut down on soft wood timber imports
 - soft wood trees do not grow naturally in Zambia

APPENDIX 10 CONT'D

- | | | | |
|----|------------|----------|------------|
| J) | - Chati | - Choma | - Mufulira |
| | - Chichele | - Kabwe | - Samfya |
| | - Chipata | - Lusaka | - Chisamba |

8. G.S. 2, 1984: 11, no. 6

1. to show that the frog produced carbon dioxide (or similar)
2. to remove carbon dioxide from the air
3. to show that carbon dioxide has been removed
4. tube 2 will be clear and tube 4 cloudy (or similar)
* if only one of tubes given NO MARK
5. tube 2 is clear because carbon dioxide has been removed from the air (or similar) 1 mark

tube 4 will be cloudy because the (expired) air now contains carbon dioxide (or similar) 1 mark

9. G.S. 2, 1984: 1 no. 1

1. (ii) D (ii) F 2.(i) hollow iron (ii) wood
3. Use the magnet, M to test the sticks. If repulsion takes place the stick must be a magnet. (or similar)
or Suspend the sticks from a thread. The one that always comes to rest in a north-south direction is the magnet.

10. A. Swinging, or move to and fro, or vibrate
- B. waves or ripples or circular waves
- C. Vibration
- D. Louder
- E. (i) Higher pitch
(ii) Lower pitch.

APPENDIX 11: PHRASING EXAMINATION QUESTIONS

EXAMINATION JARGON (LEWIS, 1976)

| | |
|---------------------------|---|
| COMPARE | Look for similarities and differences between; perhaps reach a conclusion about which is preferable. |
| CONTRAST | Set in opposition in order to bring out differences |
| CRITICISE | Give your judgement about the merit of theories or opinions or about the truth of facts; back your judgement by a discussion of evidence or reasoning involved. |
| DEFINE | Set down precise meaning of a word or phrase. In some cases it may be necessary or desirable to examine different possible, or often used, definitions |
| DISCUSS | Investigate or examine by argument; sift and debate; give reasons for or against. Also examine the implications. |
| DESCRIBE | Give a detailed or graphic account of. |
| DISTINGUISH BETWEEN OR | Look for the differences between. |
| DIFFERENTIATE | |
| EVALUATE | Make an appraisal of the worth of something, in the light of its truth or usefulness. |
| EXPLAIN | Make plain; interpret and account for; give reasons for. |

APPENDIX 11 CONT'D

| | |
|---------|---|
| JUSTIFY | Show adequate grounds for decisions or conclusions; answer the main objections likely to be made to them. |
|---------|---|

| | |
|---------|---|
| OUTLINE | Give the main features, or general principles, of a subject, omitting minor details and emphasizing structure and arrangements. |
|---------|---|

| | |
|--------|---|
| RELATE | (a) Narrate - more usual in examinations (b) Show how things are connected to each other, and to what extent they are alike, or affect each other. |
|--------|---|

| | |
|-------|---------------------------------|
| STATE | Present in a brief, clear form. |
|-------|---------------------------------|

| | |
|-----------|--|
| SUMMARISE | Give a concise account of the chief points of a matter, omitting details and examples. |
|-----------|--|

| | |
|-------|--|
| TRACE | Follow the development history of a topic from some point of origin. |
|-------|--|

APPENDIX 12

THE LANGUAGE OF ZAMBIAN EXAMINATION QUESTIONS

Question 1

(See map edn. 3-ZS, 1983. Series ZS51, Sheet 1328 A2)
According to map evidence, Luanshya Urban is also an administrative centre because it has

- A. Many shafts
- B. schools and institutions
- C. D.E.S. and D.G.
- D. hospitals
- E. a golf course

This question is inappropriate for examination purposes for the following inadequacies:

SYNTACTICAL PRINCIPLE: (a) The phrase "According to map evidence..." is syntactically incorrect because there are, in fact, two parallel structures that the examiner has fused together:

- (i) according to the map and
- (ii) map evidence

These have the same function so that they are tautological in this context. The phrase should read either (iii), (iv) or (v):

- (iii) According to the map ...
- (iv) Map evidence shows that ...
- (v) Evidence on the map ...

(b) The expression 'Luanshya Urban' in "... Luanshya Urban is ..." is vague in that it does not have any perceivable reference, especially that it does not collocate with its

complement, "... centre". Urban is one of the adjectives which cannot syntactically assume a predicative status (Quirk, Greenbaum, Leech and Svartvick, 1985). Although the examiner has written it as a Proper Noun, it is not so written on the map, and, therefore, one is bound to ask "Luanshya Urban what? (Ellipsis)? UNZA experts dismissed it as unacceptable. The fact is that the expression is in fashion but its reference has not yet been established. The Geography Studies perhaps would do well to look into this. Until that time its usage and use are inappropriate for examination purposes.

GRAMMATICAL PRINCIPLE - (a) It appears that in this context, the examiner erroneously uses the word urban as a synonym of town, which is a noun. An adjective cannot enter in a paradigmatic relationship with a noun (Fowler, 1974). The expression can be improved: '...Luanshya is also ... centre'.

LEXICAL PRINCIPLE - In the expression, 'Luanshya Urban is also an administrative centre...', the word also is inappropriate since it is semantically ambiguous. It is not clear whether the examiner means (i) and (ii):

(i) Luanshya is an administrative centre in addition to something (status) else.

(ii) Luanshya, as well as another town, is an administrative centre.

(see Quirk et.al., 1985). Contextually, this question is not preceded by another town/... or any other status of Luanshya.

To disambiguate it, we could say:

(iii) ... Luanshya is an administrative centre...

(b) In option B, the expression, "schools and institutions" is grammatically incorrect since it suggests that schools are not institutions, when, in fact, the word schools entails institutions. Technically, institutions is a superordinate of schools, which is the hyponym (Cruse, 1986; Hurford and Heasley, 1983). MGEC (1985) recommends the introduction of these concepts early (Grades 8 and 9) in the pupils' continuous writing (composition) skills. Bright and McGregor (1970) and Tomlinson (1973) offer useful practice drills on this. The two then cannot be coordinated.

PRAGMATIC PRINCIPLE - Consequently, the candidate would be **at a loss with regard to the interpretation of the option**, especially that all the options are characteristics of any civic administration. The option should read:

B. schools and other institutions.

GRAMMATICAL PRINCIPLE - Option C is grammatically inconsistent with the premise (stem) - unfortunately the Answer Key indicates that C is the correct answer. The nouns DES and DG. are count nouns, which, in this context, must be preceded by the indefinite article (Ellis and Tomlinson, 1973; Thomson and Martinet, 1970-). Pragmatically, this may mislead the more

grammatically sensitive pupils against the answer.

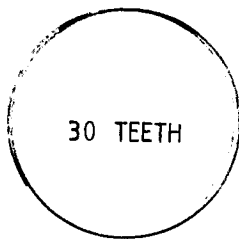
Having removed all these language problems, the question was improved as in Group 2:

According to the map, which of the following explains why Luanshya is an administrative centre? It has

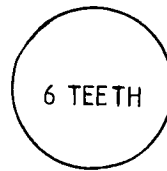
- A. many shafts.
- B. schools and other institutions.
- C. a D.E.S. and D.G.
- D. hospitals.
- E. a golf course.

The question is now better because it says what the examiner intended more clearly. The ambiguities have been removed and so has the tautology. It is also grammatically correct.

Question 3



Gear Wheels



In the diagram above driving the small gear wheel is an arrangement for producing in a large gear wheel

- A. Low speed and low power.
- B. High speed and high power.
- C. Low speed and high power.
- D. High speed and low power.
- E. No change in speed and power.

EXPLANATION - This question is inappropriate for examination

purposes because of the following inadequacies:

SEMANTIC PRINCIPLE - The gerundial clause, 'driving the small gear wheel' is confusing in this context. Although the examiner uses it with a nominal function - subject of the sentence - (Quirk et.al., 1985), the compliment, 'an arrangement for producing in a (the?) large gear wheel ...' makes it meaningless. An arrangement is, in this case, putting the wheels close together in a particular way. The action of driving ... cannot be an arrangement. This also poses a pragmatic problem since the arrangement of the gear wheels is not shown to reflect the description (no teeth, no chain, no direction of movement).

LEXICAL PRINCIPLE - In option E, the word, change, seems inappropriate as it suggests that the large gear wheel had been moving when the small one started to move. The option should not be used since the wording does not call for a comparison.

SEMANTIC PRINCIPLE - the adjectives low and high are semantically relative (Procter, 1978) i.e. they have no meaning in themselves. We should then assume that in the description, the large wheel was moving by some device (agent) at speed (S_1) with power (P_1) so that the present speed S_2 and power P_2 are low/high in relation to S_1/P_1 .

This concept can be illustrated thus: If three buildings B_1 , B_2 and B_3 measured 20m, 40m and 60m respectively, we would describe the buildings as:

- (a) B_3 is high in terms of B_1 and B_2
- (b) B_2 is high in terms of B_1
- (c) B_2 is a high building.
- (d) B_3 is a high building.

But (c) and (d) are not semantically equivalent although they use the same word high. So what was moving the large wheel before it was moved by the small wheel? Something is missing. The question is therefore incomplete.

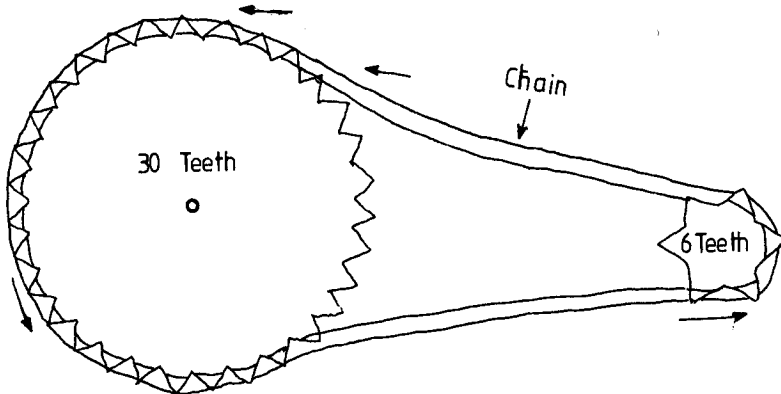
PRAGMATIC PRINCIPLE - The UNZA experts felt that the examiner is testing the pupils on the effect of the small gear wheel, once engaged, with the large wheel, by some means, and it moves, in which case, they agreed, the syntax does not bring this out clearly. Otherwise the options should read:

- A. low power and a low speed.
- B. high power and a high speed.
- C. high power and a low speed.
- D. low power and a high speed.
- E. no change in power and speed.

However because of a lack of agreement and the incompleteness of the question, the question was changed slightly (But see 'Teachers' Perception of Language of Examinations' below for a clearer discussion:

QUESTION 3

GEAR WHEELS

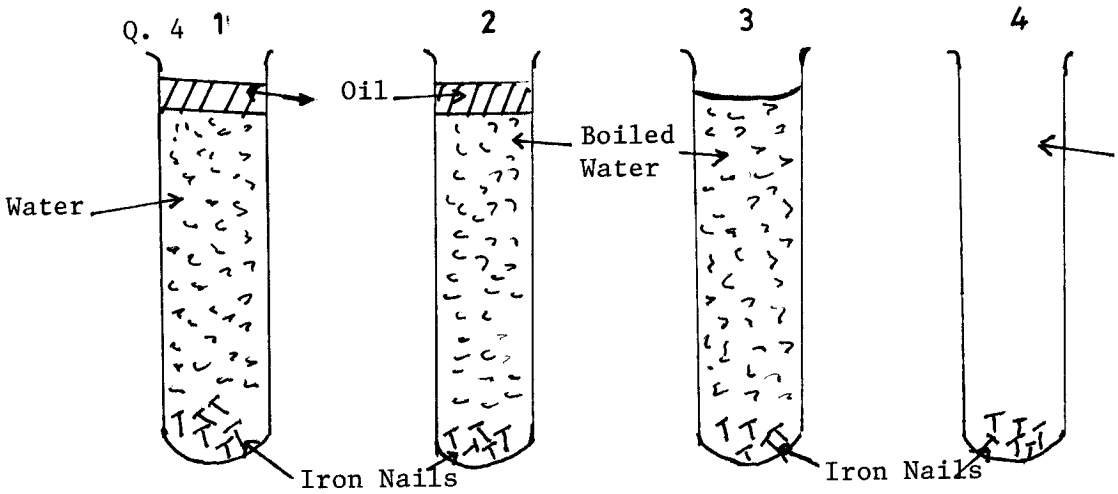


Two gear wheels are arranged as shown in the diagram above. If the small gear wheel is moved as shown, it will produce _____ in the large wheel.

- A. low speed and low power.
- B. high speed and high power.
- C. low speed and high power.
- D. high speed and low power.
- E. no change in speed and power.

This question is slightly better than the Group one in that it has been made more concrete; the syntactical problem has been solved by removing the gerundial clauses and reducing the sentence into two short ones both using the structures familiar to Grade 9 pupils. The question's communicativeness has been improved by redrawing the diagrams to suit the description. However the problem of the options could not be solved since the researcher does not know the subject and the experts did not clarify the concept behind the question.

School _____



Small iron nails were left in the four test tubes for two weeks, after this period it would be found that ...

- A. the nails in all the test tubes are rusted.
- B. only the nails in tubes 1, 2 and 3 are rusted.
- C. only nails in tube 4 are rusted.
- D. only nails in tubes 1, 3 and 4 are rusted.
- E. the nails in all the test tubes are not rusted.

EXPLANATION - This question is inappropriate for examination purposes because of the following inadequacies:

GRAMMATICAL PRINCIPLE: (a) The stem is incorrectly punctuated.

The comma after 'weeks' should be replaced by a full stop as there are two independent clauses, which should not be separated by a comma (Quirk et.al., 1985). Instead the comma should come after the prepositional phrase 'after this period' (Forest, 1970; Whitehall, 1956).

(b) The past modal in the clause 'after this period it would be found' makes the meaning of the question

unclear as it implies that the nails were not put in the test tubes, after all. This contradicts the first sentence, which states categorically that the nails were put in the test tubes and left there for 2 weeks (Hemeren, 1978). If the examiner had wanted to report a hypothetical experiment, he should have used a hypothetical conditional clause 'it would be found that ...' (Quirk et.al., 1985). Thus the connector if should start the clause. Otherwise the Past Simple is appropriate for reporting the experiment. The problem should be presented thus:

- (i) If small nails were put ... it would be found...
- (ii) Small nails were put ... What happened...?

(c) The tense used in the options does not follow a logical sequence with would, which expresses the likelihood of the result and yet the results are expressed in the Present Simple Tense expressing a real future reference (result). This causes Pragmatic problems, especially to the bright pupils. This can be improved thus:

If

- (a) If is used it is a hypothetical experiment (Stem (i)). The options should be in the would + Infinitive (Quirk and Greenbaum, 1973) forms: '... would be rusted.'

(b) the report is a real experiment (Stem (ii))
the report should be rephrased: "... were rusted" as in the Group 2 version.

SYNTACTICAL PRINCIPLE: Option E sounds awkward because of the expressions:

- (i) the nails... are not rusted (Quirk et.al., 1972).
- (ii) in all the test tubes... are not rusted.

There is a neater way of expressing this negation, using the assertive forms: "none in any", thus:

- E. None of the nails in any of the test tubes was/
would rusted/rust.

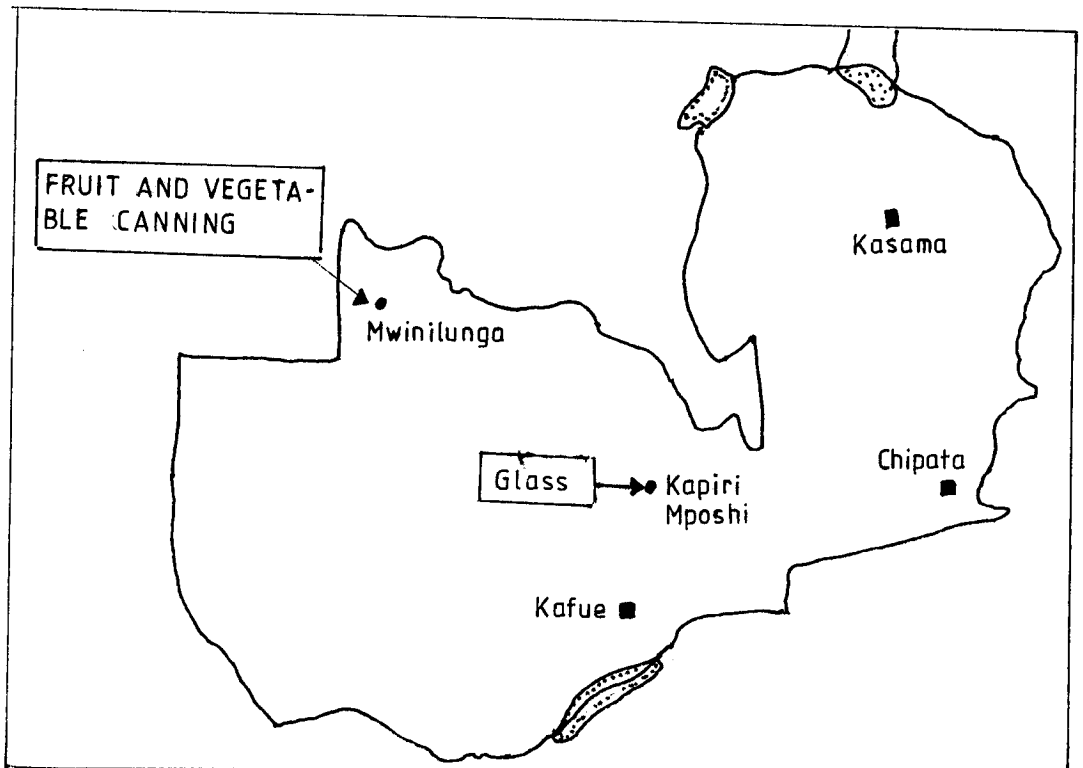
The question was then corrected in a neater and specific way, thus:

Small iron nails were put in four test-tubes as shown in the diagrams above. What happened to the nails after they were left there for two weeks? (Group 2 version).

- A. The nails in all the tubes were rusted.
- B. Only the nails in tubes 1, 2 and 3 were rusted.
- C. Only the nails in tube 4 were rusted.
- D. Only the nails in tubes 1, 3 and 4 were rusted.
- E. None of the nails in any of the test tubes was rusted.

Question 5

Study the map of Zambia and answer the questions below.



- A. Name two industries located in Kafue.
(i) _____ (ii) _____
- B. State two problems faced by the industries at Mwinilunga.
(i) _____
(ii) _____
- C. Ginning industry is located at Lusaka and Chipata.
What is meant by Ginning?

- D. What do the letters SIDO stand for? _____
- E. Give two advantages of SIDO. (i) _____
(ii) _____
- F. Give two reasons why the glass industry is located at
Kapiri-Mposhi. (i) _____
(ii) _____
- G. Name three agriculture processing industries located in
Kasama. (i) _____
(ii) _____ (iii) _____
- H. State two problems faced by the manufacturing industries
in Zambia. (i) _____
(ii) _____

EXPLANATION - This question is inappropriate for examination purposes because of the following weaknesses:

COHESIVE PRINCIPLE: Although the instruction makes the studying of the map a prerequisite condition to answering the questions, apart from (B) and (F), none of the sections seems to have a relationship with the map. To answer (B) and (F) a pupil must know the industries and the glass industry respectively referred to in the question on the map. The information on the map helps him answer the questions. This relationship is very important. The instruction presupposes a family of related performances (Thyne, 1976) and the UNZA experts underscored the importance of this link between the question(s) and the map. The information on the map serves as the cohesive

device between the map and the sections of the questions.

This means that a candidate cannot perform effectively "except by recourse" to the map (Halliday and Hasan, 1976: 4).

The instruction was improved (Group 2):

After studying the map below, answer questions (A) and (B). Then answer the remaining questions from your general knowledge of Geography.

Alternatively, the UNZA experts suggested, the rest of the questions can be asked as separate questions.

PRAGMATIC PRINCIPLES: For question (5A) the examiner has the following for his admissible answers:

- | | | | | | | |
|------|-------|-------------------|------|---------------|------|-------------------|
| 5(A) | (i) | textile mill | (iv) | boat building | (ii) | concrete sleepers |
| | (ii) | fertilizer making | (v) | tannery | | |
| | (iii) | plastics | (vi) | yeast making | | |

The verb name in this context, appears to carry a vague illocutionary force. The examiner intends to direct the candidate to perform a series of unrelated performances, but he actually asks them to perform the act of "telling the names of the industries in Kafue (Procter, 1978: 723), in which case the candidate may give the name of the industry e.g. Kafue Textiles of Zambia. But the examiner's intention, though, except in (ii), (iii) and (iv) is to have the candidates give the types, not names, of the industries. They are formally and semantically different. Whereas (i) and (v) are buildings, (vii) denotes products. This is confusing and misleading the candidates. This question was improved (Group 2).

5(C) Give the names of two industries located in Kafue.
i.e. the examiner wants the names, but if he wants the types of the industries the question should be rephrased:

5(A) Mention two types of industries located in Kafue (Group 1).

GRAMMATICAL PRINCIPLE: In 5C, the lexical item industry has been specified by the participle, "ginning". Logically, the definite article (the) should precede the expression "ginning industry" thus: "The ginning industry" (Forest, 1968; Ellis and Tomlinson, 1973; Quirk et al., 1985). This, though is unlikely to interfere with pupils interpretation - it is a matter of good usage.

PRAGMATIC PRINCIPLE - (a) Question 5C gives the impression that the two parts are related such that the understanding of the first part helps the candidate answer the second part. It is clear from the key that the candidate is directed to define the word 'ginning', but it is not clear how this definition is contingent on knowing where the ginning industry is located - this is a breach of one of the Maxims of the Co-operative Principle (CP) i.e. RELATION (Leech, 1983: 8). Smith and Adams (1966) feel that if (such a question deals with more than single item of information, it tends to obscure the central thought, although as much relevant information as is necessary to answer the questions, should be given. UNZA experts though the question is 'overloaded' with information.

(b) Besides, the question is unsuitable for a short-answer question because it is actually asking the candidates to explain what he understands by the word 'ginning' in the context given and not just a definition (Hurford and Heasley 1983: 1-3). Unless the pupils were taught the expression 'what is meant' as synonymous with 'define' a clearer way of asking this question would be:

- (i) What does the word 'ginning' mean?
- (ii) Define the word 'ginning'.

SEMANTIC PRINCIPLE: In 5G, the expression "agriculture processing industries" seems semantically ambiguous. The structure could be (i) or (ii).

- (i) agriculture [processing industries]- processing industries in/of Agriculture as opposed to in/of Mining, for example.
- (ii) ? [agriculture processing]industries - industries that process agriculture?

In (ii), which is closer to the examiner's intentions (Key), the participle, 'processing', modifies the noun 'industries' i.e. industries that process X, where X = direct object. At the same time, since 'agriculture' is a noun, it is predicatively modified by the participle 'processing' i.e.

? processing[agriculture industries]?

Syntactically it appears acceptable on the pattern:

NP + Participle + NP (where NP = Noun Phrase).

cf (iii) Heart + breaking + news

(ii) Agriculture + processing + industries

By the process of relativisation (iii) and (ii) respectively give us

- (iii) The news that { is breaking
break } one's heart.
- (ii) The industries that { are processing
process } agriculture?

For more details see Quirk et.al., (1985 : 416).

Clearly (ii) is semantically inadmissible because the word agriculture, according to Monkhouse (1965), refers to the growing of crops and the rearing of livestock. The OED¹ enters this word as a noun referring to the 'tillage of land ... including the allied pursuits of gathering in the crops and rearing live-stock. It is now obvious that agriculture cannot be processed. The examiner gives, as his intention (Appendix 10 : 122).

- milling of maize
- coffee processing
- milk processing

From these answers, it can be deduced that the examiner meant the processing of agricultural products rather than (of) agriculture. The UNZA experts expressed the same view that the examiner meant 'industries involved in the processing of agricultural products'. The formal structure (syntax) of

the expression should be:

Adjective + NP + Participle + NP:-

→ Agricultural + Products + Processing + Industries (where
→ means { is
 can be } realised as).

This structure may be too difficult for Grade IX as it is in advance of the JSS English Language Syllabus. To disambiguate it we can reword it as in (iv) and (v):

(iv) Name three agricultural processing industries...

(v) Name three industries which process agricultural...

where (v) is structurally manageable by Grade IX.

PRAGMATIC PRINCIPLE: The verb name has been discussed in a similar context in 5(A) above. This question was further improved in the Group 2 version as

(vi) 5G. Give the names of any three of the industries which process agricultural products in Kasama.

This version is closer to the examiner's intention although "Mention three types of industries..." would have been more appropriate as the examiner does not suggest names.

Question 6

Study the following map of East Africa and then answer the questions below.

EXPLANATION: This question is inappropriate for examination purposes because of the following inadequacies:-

PRAGMATIC PRINCIPLE - The directive verb state in 6(g) and 6(i) seem to be misused, and it may adversely affect candidates' performances. The candidates are directed to make assertions about the names of the countries and tourist attractions respectively. According to Lewis (1976) the word state (verb) means to present in a brief, clear form (Appendix 11: 126). These questions were improved thus:

6(g) Mention two major countries...

6(i) Mention two of the tourist attractions in the Carribean area.

GRAMMATICAL PRINCIPLE: In 6(g), although the intention seems clear, the relative clause structure "... where tourists to Kenya come from" is ungrammatical. This is because according to Quirk et.al., (1985: 1255), Ellis and Tomlinson (1975: 67) and the UNZA English Experts, countries are not immediately followed by the relative pronoun, where. In any case in Grade IX, the teaching of such relative clauses is based on the following patterns (MGEC), 1985: 29):

(a) NP + Preposition + Relative Pronoun (RP), e.g.

The village + from + which...

(b) NP + RP + Subject (S) + Verb (V) + Preposition (Prep), e.g.

The village + which + he + comes + from...

(c) NP + RP (that) + S + V + prep., e.g.

The village + that + he + comes + from ...

(d) NP (+RP) + S + V + Prep., e.g.

The village (+ that) + he + comes + from ...

Where village can be substituted by country in our case.

The structure used by the examiner can easily disturb pupils, especially intelligent ones.

LEXICAL PRINCIPLE (a) The word 'major' in the expression 'major ... countries' in 6g seemed vague in this context. The adjective 'major' is a comparative one-meaning 'greater' (Gowers, 1965) - comparing two things or species (OED), one is major and the other, minor (Partridge, 1965)... in this question the sense did not seem to come out clearly to me and the UNZA experts, since there are many countries from which tourists to Kenya come. The examiner wants two major countries, which suggests that there are more than two major countries (impossible by this definition) - the Key gives 4 major countries, "USA, West Germany, United Kingdom and France" (any two). The only plausible sense to me at the time of my forming Group 2 seemed to be its reference to the numbers of tourists coming to Kenya from various countries in which case the word became semantically inappropriate. The idea of comparing numbers would aptly be conveyed by the word 'majority' in this context as in (i) or (ii)

- (i) Mention two countries ... the majority of ...
- (ii) Give the names of two countries ... the majority of ...

However in the following version the word was retained, anticipating a possible defence by the teachers along the line of subject register (see "Teachers' Perception of language..." page 37):

6g. Mention two major countries, outside Africa, from which tourists to Kenya come (Appendix 8).

(b) In 6(k) the use of the verb name seems improper in this context because a means cannot have a name.

Pragmatically, the illocutionary force carried by the verb is rather confusing especially in the light of the answers given by the examiner:-

- by water transport.
- by air.

Neither expected performance suggests a name in it as in "Kenya Airways". A better directive was formulated thus:

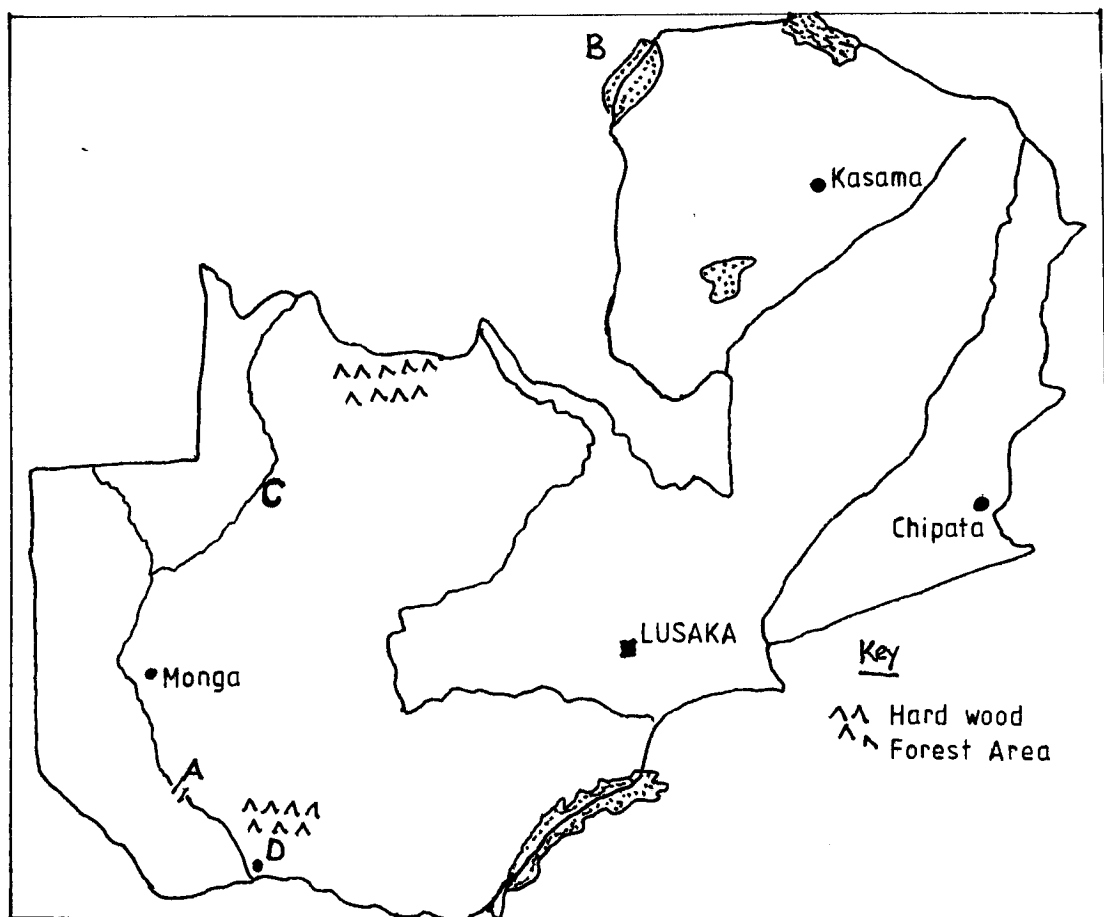
6(k) Mention one means of transport to the Carribean area (p. 110).

PRAGMATIC PRINCIPLE - The instruction seems to be inadequate because it does not cater for this question. The students would not know what to do since the starting point is not made known, yet the destination is known, e.g. Mombasa to the Carribean area)Where Departure point = Mombasa;

Destination 0 Carribean area)? The question should have included a point of departure. The question could not be revised taking this into consideration because pupils may have been told its implication in the lessons. However, for examination purposes precision is essential.

Question 7

Study the map of Zambia below and answer the questions that follow:



- A. Name Waterfall A _____
- B. Name Lake B _____
- C. Name River C _____
- D. Name Town D _____

- E. Name two hardwood timber trees that are of commercial value in Zambia.
(i) _____ (ii) _____
- F. Suggest two uses of hardwood timber.
(i) _____
(ii) _____
- G. Suggest three reasons why forests should be preserved.
(i) _____
(ii) _____
(iii) _____
- H. Name two other forest products apart from timber.
(i) _____ (ii) _____
- I. Give one reason why the government has established softwood plantations.

- J. Name one forest plantation in Zambia. _____

EXPLANATION - This question is inappropriate for examination purposes because of the following weaknesses:

COHESIVE PRINCIPLE: (see Question 5 and 6). This instruction can be improved thus:-

After studying the map of Zambia below, answer questions (a)-(d). Then answer the remaining questions from your general knowledge of Geography. An alternative way is to write the remaining questions as separate (from the map) questions. Yet another way is to have map questions form their own section and non-map ones could be in a separate section. The non-map questions could be topical with appropriate instructions.

PRAGMATIC PRINCIPLE: The use of the verb name in 7E, 7H, 7J is inappropriate as discussed in questions 5 and 6 above.

However, it may be useful to mention that the verb to name means to give a name or names of [(persons, things, places) OED]. This definition seems consonant with the use in these questions and that in similar contexts. The dictionary adds that the verb is used with a name as a complement (. 4; also Partridge, 1947 - 1965 edn: 92) e.g. "Afterward they named it the Island of Sancta Helena (OED: 14c. 6), where 'Island of Sancta Helena' complements the verb, named.

(b) In 7F and 7G the directive verb suggest is inappropriate in these contexts. It makes the directive vague. The question is open to various interpretations. Consequently, the candidate would not be sure of their performances. According to the OED, the directives are asking pupils to put forward propositions. It becomes, then, problematic evaluating their performances. This has the same effect as the verb name in 7E, 7H and 7J. The performance are neither right nor wrong or as Austin (1962) puts it "neither true nor false" (p. 5).

GRAMATTICAL PRINCIPLE - In 7H, the expression 'other forest products apart from' is two functionally equal phrases in one:

1. other (than)
2. apart from

Partridge (1965) says that the expression 'other than' should be 'apart from' (p.225). Among other meanings

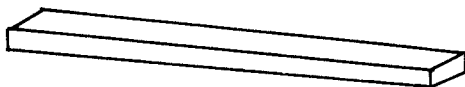
'other than' means 'existing ^{besides} that which has already been mentioned' and so does 'apart from' (OED: 381). The examiner confuses these expressions with the same intention in this question. The two expressions, then, cannot enter into a syntagmatic relationship with each other. 'Other' is an adjective of comparison (in this question, too), which requires the use of than like "bigger (...) than" [Quirk et.al., 1985: 1136 (note)].

The expression "apart from" is a prepositional phrase of exception functioning as an adjunct (Quirk et.al., 1985: 70) with the same sense as 'other than'. These questions were improved:

- 7E. Give the names of two of the hardwood timber trees that are of commercial value to (not in)* Zambia (7e, Gr. 2).
- 7H. Mention two forest products other than timber (7h, Gr. 2).
- 7J. Give the name of one of the forest plantations in Zambia (7j, Gr. 2).

These questions are more precise and clearer in meaning than they are originally, and are closer to what the examiner intends.

Question 9



In this investigation seven sticks like the one shown above are tested, and the results are shown in the Table.

* Footnote: To suggest that Zambia sells them to other countries.

| | | Action with: | |
|---|--------|--------------|-----------|
| | WATER | ELECTRICITY | MAGNET, M |
| A | sinks | conductor | attracted |
| B | sinks | conductor | attracted |
| C | sinks | insulator | none |
| D | sinks | conductor | none |
| E | floats | insulator | none |
| F | floats | conductor | none |
| G | floats | conductor | attracted |

All the sticks looked exactly alike (apart from the letters A - G) and the materials they are made from are to be found in the list below.

CONCRETE STEEL MERCURY IRON HOLLOW IRON CARBON
 WOOD GLASS MAGNET ROCK ALUMINIUM COPPER

Answer the Questions below:

1. Write down the letter from the Table of the stick which is most likely to be:-
 - i. Aluminium _____
 - ii. Carbon _____
2. From the list choose suitable materials for:-
 - i. Stick G _____
 - ii. Stick E _____
3. You are told that one of the sticks is a magnet. Briefly describe how you would find it.

EXPLANATION - This question is inappropriate for examination purposes because of the following weaknesses:

GRAMMATICAL PRINCIPLE - There is confusion in this question

because the examiner switches from one tense to another. It is not clear why. On the use of tenses in scientific and technical English, Lackstrom et.al. (1972) are quoted by Widdowson (1978) to have said:

"... the past tense is used to describe experimental apparatus which is temporary, set up, perhaps solely for the particular experiment being reported, whereas the present tense is used to refer to apparatus which is permanent."

Widdowson observes that what is significant about these tenses from the textualisation point of view, then, is that they are used to make statements and descriptions of different kinds which are part of the discourse of science. For example, the first sentence of the report is written in the present simple in both conjoints:

"... are tested" and "... the results are ...". Without any time indicator, and contrary to what Widdowson notes above, the second sentence is written in the Past Simple Tense. It becomes difficult to follow the experiment logically since there is no cohesion in the text. The examiner should establish the point of view (Present, Past, Future). Since the examiner decided that the experiment be reported in the Present Simple tense, I decided to use the same tense but consistently although the Present Perfect tense would have been preferable in the first sentence as the experiment has already been done - "the results are tabulated" - (Ellis and Tomlinson, 1973;

Hornby, 1954; Quirk et.al., 1985), e.g.

"In this investigation, seven sticks ... are tested.

The results are shown in the table below (Group 2:

(b) The ungrammatical presentation of the table may cause problems of understanding and subsequently interpretation. The stem "Action with" collocates well with the WATER column and the MAGNET, M column, but it does not with the ELECTRICITY column. The WATER and MAGNET, M columns indicate items in verb form. The stem "action with" must be designated by verbs so that the notion of eventiveness is explicated right down all the columns (Quirk et.al., 1985: 747) so that we can say:

(i) Stick X sinks (Verb \longrightarrow Action with)* in water.

But we cannot say

X (ii) Stick X conductor (Noun $\not\rightarrow$ Action with)* in water. X

According to Quirk et.al. (1985) "Stick X" functions as an affected subject in (i) (p. 743), "Acting with" acts as deverbal (p. 747).

"Conductor" is a complement of "stick X" in 'stick X' is a conductor; it does not therefore designate "action with water". The middle column should read:

A - conducts; B - conducts; C - insulates; D- conducts;
E - insulates; G - conducts. The interpretation of the

* Footnotes: \longrightarrow designates

$\not\rightarrow$ does not designate

table can be made easier if the column of letters is headed STICK.

(b) The second sentence of the report appears to be rather confusing. Actually, the examiner is comparing two types of items: sticks and letters, A-G. That is, all the "sticks" looked alike but the letters A_G, different (for use of "apart from", see comment on 7H above). The sentence should be improved thus:

"All the sticks look exactly alike (apart from the letters, A-G, which were written on them.

(c) The two parts of the second sentence of the report are ungrammatical because they have been inappropriately co-ordinated by AND. And co-ordinates parts of equal weight (Quirk et.al., 1985: 951). The two conjoins are:

(i) All the sticks looked exactly alike

(ii) The materials they are made from are to be found ...

They should be written in the same tense:

"All the sticks look exactly alike and the materials they are made from ..."

(d) The VP, "are to be " (Be to) seems contextually inappropriate. Be to + Infinitive expresses (1) contingent future (2) arrangement (3) command (Quirk et.al., 1985); Quirk and Greenbaum, 1973: 50). None of these possible interpretations seems right in this situation. The examiner wishes to show the candidates where the materials are.

This can be made clearer and more simply thus:

The sticks are made from the following materials (Group 2: 10).

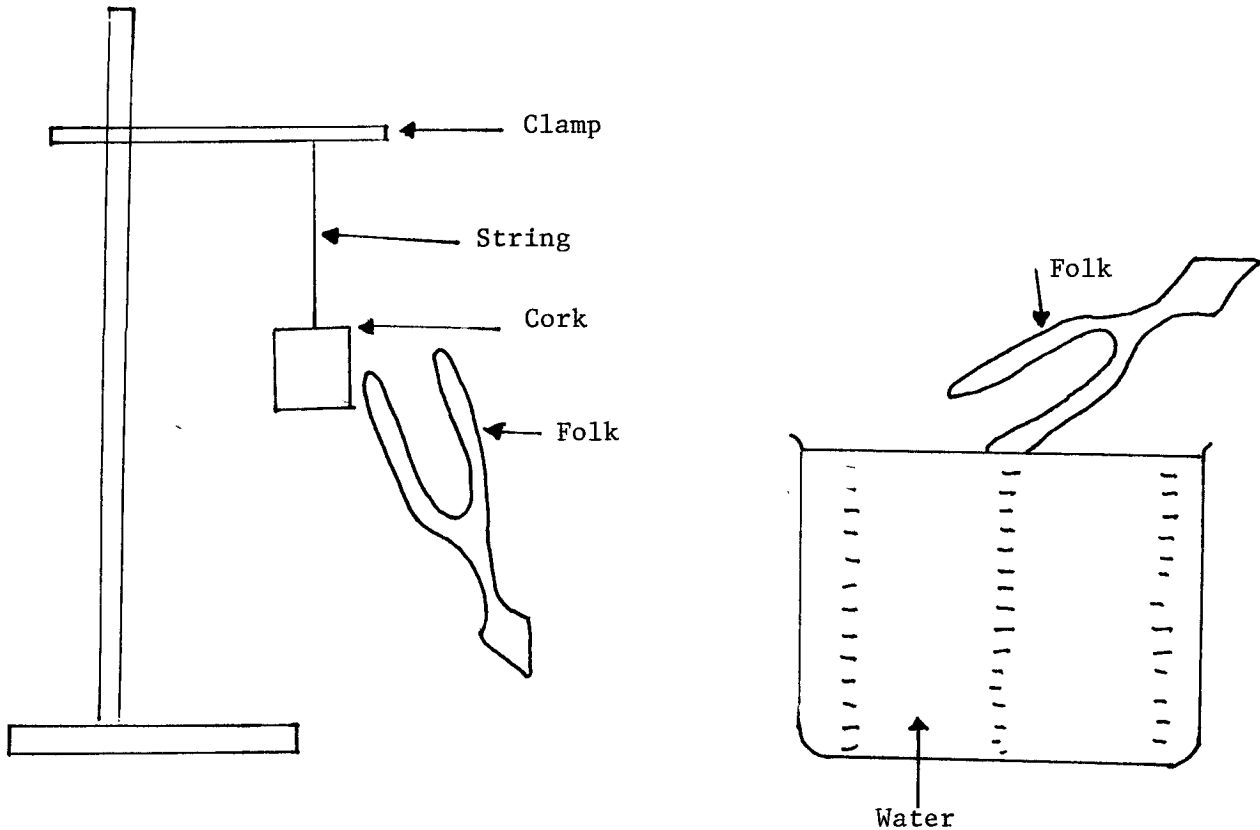
(e) There is discontinuity of the genitive construction, "the letter ... of the stick (Quirk et.al., 1985: 1281), making the prepositional phrase "from the table" too much embedded between 'letter' and 'of'. It is the letter of the stick that is written and not just "the letter from the Table". It is evident that the expression "the Table of the stick" is a misleading construction. The apparent poor embedding following the omission of the commas. "... the letters, from the Table, of ..." is a possible syntactical factor. Also the word 'Table' is a common noun; it must start with a small 't' (Quirk et.al., 1985). One way to improve this was thus:

(a) After reading about each stick in the table, write down the letter of the one which is most likely to be (i) aluminium _____ (ii) carbon _____.

LEXICAL PRINCIPLE - The word, stick, seems an inappropriate label for the examiner's drawing for the candidates will be looking for sticks or a series of them but all they see is (something like) a bar. This can cause anxiety and frustration.

Question 10

A pupil struck a tuning fork against the wall and put it near his ear, he heard a sound. He then performed two other experiments starting with striking it against the wall each time before bringing it in contact with the cork and water as shown below.



- A. What would you expect to happen to the cork? _____
- B. _____
What do you expect to see on the surface of water? _____
- C. _____
What does this tell you about the way in which a tuning fork produces sound? _____
- D. _____
What happens to the pitch of the tuning fork if you strike it harder? _____
- E. _____
What happens to the pitch of the tuning fork if you use a tuning fork with
 - i. Shorter prongs? _____
 - ii. Longer prongs? _____

EXPLANATION: This question is unsuitable for examination

purposes because of the following inadequacies:-

COHESIVE PRINCIPLE: UNZA English experts felt that questions 10D and 10E do not require the experiment (for them) to be answered. The examiner should have made separate questions with their own instruction.

SPELLING ERROR: The word 'folk' in the expression 'tuning folk' is incorrectly spelt (and, therefore, wrong word) throughout the question. The spelling error seems to arise from the examiner's failure to make a phonemic distinction between the minimal pairs, /ɔ:/and/əu/ in spelling the word folk [fɔ:k] as folk [fəuk]. From a pedagogic point of view, by incorrectly labelling a referent (the drawing of the tuning fork) the examiner is misleading the candidates. But for the drawing of the fork and context, this may cause serious semantic problems considering that both are English words whose realisations differ in one letter of spelling or one phoneme: fork [fɔ:k] and [fəuk] (OED: Procter, 1978; Gimson, 1962: 45). However, this is an inexcusable error in an examination.

GRAMMATICAL PRINCIPLE - In the first sentence, the comma after ear, should be replaced by a full stop (Ellis and Tomlinson, 1973; MEGEG, 1985). A comma cannot separate independent clauses (Quirk et.al., 1985: 615). The clauses are:

1. A pupil struck a tuning folk against a wall and put it near his ear,
2. he heard a sound.

Thus "A pupil struck a tuning fork against a wall and put it near his ear. He heard a sound."

I rephrased it by introducing a syntactical change:

When a pupil struck a tuning fork ... ear, he heard a sound.

PRAGMATIC PRINCIPLE (a) From the report, the candidate will understand that the experiment was made sometime in the past (use of the Past Simple Tense - Ellis and Tomlinson, 1973: Unit 4). Then the questions are asked in two different tenses: the Past Modal in 10A and the Present Simple in the rest of the parts. This breaks the cohesion in the text, and may confuse the pupils (Smith and Adams, 1972). In 10B, the examiner's intention is not clear when he changes the point of view from the pupil that performed the experiment to the pupil candidate (addressee) - a breach of scientific discourse principle (Lackstrom et.al., 1970: 109 quoted by Widdowson, 1978).

The word pupil does not mean the addressee in this context. For this reason the first part, "what do you expect...?" is vague because a pupil might answer, nothing will happen/I don't know (because I was not there).

(b) The word expect here (10A) and in 10B is inappropriate for similar reasons to those discussed in 8¹ (text), 7F and 7G. The question was improved thus:
10A. What happened to the cork in Experiment 1?

(c) The expression "happened to the cork" in 10A does not seem to convey the examiner's intention clearly. Procter (1978: 514) states that the expression means "(of an event) to take place and have an effect on. If the examiner's intention is "swinging or move to and fro or vibrate" then the question should be reworded. There is no coherence between the question and the answers. Worse the answers themselves take different forms (Moody, 1984b):

EXAMINER: What do you expect to happen to the cork?

CANDIDATE: ?Swinging/Move to and fro/vibrate?

The question could be improved

- What did the cork do?
- It swung/moved to and fro/vibrated.

COHESIVE PRINCIPLE: In 10C, the reference of the demonstrative 'this' is not clear. Clearly the reference is anaphoric, but there are two questions that have gone before. The key seems to apply to both the questions (Halliday and Hasan, 1978: 70).

SEMANTIC PRINCIPLE - In 10D and 10E, the phrase "the pitch of the tuning fork" is semantically confusing because a fork cannot have a pitch, but the sound that it produces has a pitch. Pitch refers to the degree of highness or lowness of a musical note (OED; Procter, 1978: 824)

in this context, and one cannot talk about a pitch of a tuning fork. A tuning fork is an instrument that produces the pitch (Procter, 1978: 1189). This is evident in the answers given in the key. The experts remarked that "we talk of pitch as being 'high or low' but not louder in 10D (Key)". The questions were improved thus:

- 10B. What did the pupil see on the water surface in Experiment 2?* (Group 2(b))
- 10C. What do these experiments tell you about how a tuning fork produces sound? (Group 2c).
- 10D. You strike the tuning fork against a wall and it produces a sound. Then you strike it again against the wall but harder. What happens to the pitch of the sound from the tuning fork? (Group 2d).
- 10E. What happens to the pitch of the sound if you then use a tuning fork with
- (i) shorter prongs _____
 - (ii) longer prongs _____

Teachers' Perception of Language and Examinations

Question 1

Teachers agreed that the question was inappropriate for examination purposes and thought that the Group 2 version

* The diagram should indicate 2 experiments headed Experiment 1 and Experiment 2 and distinctly separated as in Group 2.

was better to a certain extent.

Syntactical - (a) Some teachers of Geography did not see the anomaly in the expression "According to map evidence". Those who did said that the use of the expression could not have interfered with pupils' understanding of the question. However they agreed with me that precision in examinations was necessary and that we should not rely on assumptions as pupils can be critical when it comes to language use (Smith and Adams, 1972: 134). In the pilot survey, for example a pupil had asked what was meant by evidence because it confused them in that context and, after my explanation, asked why the examiner had to repeat himself.

(b) The expression 'Luanshya Urban' caused a controversy among teachers. Some thought that the expression was in common usage so that it could not have caused pupils any problems. One teacher argued that even if the expression might refer to Luanshya Urban District, it would still be unacceptable since it is superordinate to the word centre and in any case, there is no such thing as Luanshya Rural to contrast with Luanshya Urban. Overall the expression was variously interpreted:

- (a) Luanshya Urban District
- (b) Luanshya town
- (c) Luanshya

From what the teacher said, it appears the examiner erroneously uses the word 'Urban' as a synonym of Town, which is a noun. In fact the examiner himself admitted that he had in mind the "built-up area" (town) of Luanshya. Going by this the question can then be improved:

(d) According to the map, Luanshya town is ...

LEXICAL PRINCIPLE: The teachers and examiner agreed that the use of the word also in "... Luanshya Urban (in Group 1) is also an ..." could have misled and confused the candidates (refer to my analysis p. 156).

GRAMMATICAL PRINCIPLE - None of the teachers had realised the ungrammaticality of the expression, schools and institutions in option B.

PRAGMATIC PRINCIPLE - The teachers could not see the EXAMINER's intention in this question so that they thought that there was not any correct answer. The examiner admitted that the question had not conveyed his intention accurately. He explained that he had intended to test the pupils' knowledge of a town's political functions; hence the options show different civic functions as:

- A. Mining - symbolised by "many shafts".
- B. Educational and social - symbolised by "schools and institutions".

- C. Political - symbolised by 'DES and DG'.
- D. Health services - symbolised by 'hospitals'.
- E. Tourism - symbolised by 'a golf course'.

But he realised that the word also does not help him achieve this intention, and decided that the question is, as remarked by the other teachers, overloaded and therefore vague. The wording, unfortunately, does not make clear the expected civic function (Thyne, 1974: 241). Because all the options are correct, one of the teachers suggested rewording the question thus:

"Luanshya is also an urban administrative centre because it has

- A. many shafts
- B. many roads connecting it to other districts
- C. (the?) DES, D.G. and institutions
- D. many surrounding villages
- E. many streams and rivers."

But because the teacher concentrates on distractors, he has ignored the stem, which still remains vague. But the examiner's intention can be conveyed better thus:
Which of the following tells us about the political functions of Luanshya town?

It has

- A. many shafts
- B. schools and other institutions
- C. a DES and a D.G.
- D. hospitals

But another teacher, who guessed correctly the examiner's intention, thought it meant "finding out if a pupil can recollect what an administrative centre is supposed to have politically", to which he objected because he believed that such a question should be worded such that it tests the pupils' ability to interpret conventional signs on the map, and suggested:

"What conventional signs on the map show that Luanshya is a district administrative centre"? The option could read as in the original question (Group 1). Even this one is vague: which part of Luanshya? (see Pupils' Perception of Language and Examinations p. 50).

Question 3

EXPLANATION - Teachers thought that this question is incorrect (See Table III.3: 77). The Group 2 version is also incorrect because:

SEMANTIC PRINCIPLE - (See my analysis on p. 5)

SYNTACTICAL PRINCIPLE - they felt that the examiner had been "unreasonably tricky" or "ignorant" by confusing the description. In science, they explained, pupils are taught that in a gear arrangement, there should be a driving wheel and a driven wheel. In this case the small gear wheel and the large gear wheel are respectively 'a driving wheel' and 'a driven wheel'. So instead of writing the small driving wheel the examiner "trickily" wrote "Driving the small gear

wheel". Such tricks are hard to justify, especially to the student (Smith and Adams, 1972). This can cause confusion in the pupils' minds. Others thought the Group 2 version was clearer. They remarked that the diagram should show "mershing" (Meshing?).

LEXICAL PRINCIPLE - The teachers confirmed my feeling about option E which has the word change on the same grounds.

PRAGMATIC PRINCIPLE - There is discrepancy of interpretation of this question among UNZA experts and among teachers, too. There are three schools of thought:

(a) There are those who feel that the presence of two wheels with different numbers of teeth and of different sizes establishes a contrast. Therefore, the grammar in the options should reflect this set up. The comparison structure would better reflect this (Quirk and Greenbaum, 1973; Leech and Svartvik, 1973):

- A. lower power and a lower speed.
- B. higher power and a higher speed.
- C. higher power and a lower speed.
- D. lower power and a higher speed.

* The teachers did not object to my suggestion that the option should be rearranged to correct the grammar. Power is uncountable but speed is countable. Further the level of the structure is in advance of the Grades 8 and 9 English Language Syllabus. The Gerundial structure is dealt with at senior secondary level.

(b) There were those who felt that the examiner is testing the pupils on the effect of a small gear wheel, once engaged, with the larger one, and (it) moves. However, they agreed that the syntax does not bring this out clearly, otherwise the options should read as suggested in (a) above.

(c) And there are those who thought that this is an "impossible" situation, arguing that there are two incompartmentable scientific concepts: simple machines and power. Whereas it is possible to "pictorially" represent the gear wheels, representing power is inconceivable as can be seen in the diagram. Worse still, they said, power is dealt with at senior secondary level. This would confuse the candidates. Therefore the question was dismissed as "incorrect and vague".

Question 4

The majority of teachers felt that the question is confusing because it is vague. They argued that apart from the poor wording of the report, the report did not cover as much of the experiment as it should have. For example, it does not say where and when the tubes were left and when the water was added to 1, 3 and 4 (two weeks or before?). The lack of this information makes the question vague and incorrect. Because of this Group 2 version was incorrect although they felt that the report was clearer.

Question 5

EXPLANATION - All the teachers agreed with the view that this question is inappropriate for examination purposes.

COHESIVE PRINCIPLE (See my analysis p. 130 The teachers underlined the importance of the link between the map and the question part. Some of them felt that even 5(b) cannot be answered with the help of the map since the map does not show the problems.

PRAGMATIC PRINCIPLE - The teachers felt that my criticisms of 5(a) were valid but felt that my version should have asked for types, not names, of industries e.g.
5(a) Mention two types of industries located in Kafue. They felt that this question would require of pupils to think of what industries are found in Kafue.

LEXICAL PRINCIPLE (a) - Teachers had mixed feelings about the use of the word faced in 5(b) in "State... problems... faced by industries....". Some felt that the verb is contextually wrong since "problems are actually experienced rather than considered. This could have confused the candidates. They suggested the question read: "State... problems experienced by ...

(b) The use of the directive verb state caused great controversy. Some teachers doubted its appropriateness, some thought it was appropriate but others, especially those who taught General Science as well were critical of this use. They argued that it was very unfair since it asks the students to give the answer verbatim i.e. word for word as it was presented to him. They said, for example, in Science if the question says, 'State Newton's Law of Motion', the student has to reproduce it as it was presented to him. They proposed

- (i) Give two problems experienced by ... or
- (ii) Mention two problems experienced by ...

PRAGMATIC PRINCIPLE - Teachers condemned the wording of 5c on the same grounds as I did (p.140) but added that the question was vague in the light of the answer given. They thought that the answer was "unidirectional" when cotton processing can be directed towards two goals:
either 1 or 2.

1. From cotton to cooking oil or cake
2. From cotton to clothes.

The examiner is interested in cooking oil/cake seeds. He should say so, they argued. They did not offer an alternative way of wording the question. Again, none of the teachers thought that the question asked for an explanation and not just a definition.

SEMANTIC PRINCIPLE - It took time for teachers to realise how illogical question 5g was. Upon close examination of the wording, they realised that the question does not make sense and agreed that my version was closer to the examiner's intention. Some of them suggested that it could be improved thus:

5g. Mention three types of industries that process agricultural products in Kasama.

Question 6 - Teachers showed disapproval of this question on the following grounds:

COHESIVE PRINCIPLE - They agreed with the rewording of the **instruction to remove the impression that all the questions are based on the map:**

"Study the following map of East Africa and answer questions (a) - (d). Then answer the remaining questions from your general knowledge of Geography."

PRAGMATIC PRINCIPLE - Some teachers felt that my rewording of 6(d) did not reflect the examiner's intention of asking for one of the tourist attractions (Appendix 10:122). However, others felt that it was less misleading than the original (Group 1, 6g). We decided to improve it thus:
Mention one of the tourist attractions near town C.

However, the question was further criticised for failing to correct the vague idea brought about by the preposition near, since the rewording suggested there is only one attraction. It should have stated whether it was offshore or not. I admitted ignorance of the subject.

(b) Teachers had different interpretations of the verb, state in 6(g) and 6(i). Some felt that it means name (verb) and describe ... features respectively and others thought it means reproduce what you were told word for word in both cases, which they found hard to understand. However, they all thought the verb was inappropriate in both contexts. Also, they did not know the examiner's intention in either case. They suggested the following reconstructions:

6g. Give the names of two major countries.

6(i) (a) Mention two types of tourist attractions ... or

(b) What type of tourist attractions are found in the Carribean countries? Give two of them.

LEXICAL PRINCIPLE - Teachers were not happy with the use of the word major in 6g. They were wondering in which way these countries were major (Geographical size? population? amount of mineral export?). After a long discussion, we agreed that the examiner was considering the number of tourists coming to Kenya and decided to reword it as (i) or (ii), Appendix 8:114.

PRAGMATIC PRINCIPLE - The teachers were not happy with the use of the verb name in 6(a) - (d). They felt that although the context suggests "identify the places marked", it leaves a lot of room for a linguistically sensitive pupil to argue his case out if, as answer to such questions he gives any names that he pleases. They noted that apparently in Geography examination papers the verb name and state are used synonymously interchangeably as in 6(g) and 6(i). They preferred the questions to be rephrased:

6(a) - (d) - What name is given to the town/river/etc marked A/B/C etc?

- Give the name of the town/river etc marked D/E/F etc.
- What do you call the town/river etc marked D/E/F?
- What is the town/river etc marked J/K/L etc called?

Question 7 - The teachers disapproved of this question on the grounds that:

COHESIVE PRINCIPLE: (as in 5 and 6 above). When the **researcher** suggested that alternatively the questions not related to the map could be written separately, some teachers feared that the examiner might run out of questions. But the researcher thought that that depended on what constitutes a sufficient number of map questions, but what was important was to keep the question communicatively effective.

PRAGMATIC PRINCIPLE - Teachers were also critical of the use of the verb suggest in 7F and 7G, admitting not knowing the examiner's intentions. They felt that the candidates would be unfairly penalised through no fault of theirs. They further noted that 7F is equally vague in that the phrase "two uses of timber" in both versions, is vague. In actual fact the examiner wants particular uses of timber i.e. commercial uses as prescribed by the syllabus. They suggested the questions be rephrased thus:

7F. Give two commercial uses of hardwood timber.

(and 7G can be made more specific, thus)

7G. Give three reasons why forests should be preserved

(Group 2 p. 111) or

Why should forests be preserved? Give three reasons.

GRAMMATICAL PRINCIPLE - Teachers did not see anything grammatically wrong with 7H. One of them said that that was an example of "very good Geography questions as it doesn't leave the pupil in doubt about what the examiner wants". He added that although I thought the question is repetitive, it is clear and concise and that it is the repetition that enhances the pupils' understanding especially that Grade IX's knowledge of English is poor. From a cultural point of view (although this is debatable in a multilingual society like Zambia), the teacher might

be justified if, and only if, the examiner and the examinee are conscious about the reasons behind this usage and this use, otherwise the candidate is acquiring unacceptable linguistic habits. Precision is important in examinations.

Question 9

EXPLANATION: One teacher remarked: "The more we look at this question, the more confused we become". Such a question is inappropriate for examination purposes. One of the complaints that teachers levelled against this question was that they could not follow the table and yet all the questions depended on it - a pragmatic point.

PRAGMATIC PRINCIPLE - They also said that the language in the table is unscientific. For example, the substances (materials) should show their states and densities to facilitate the answering of the question - pupils are taught the importance of these factors. The stem "Action with", in science, implies a chemical combination reaction, which does not apply here. Further the columns "ELECTRICITY and MAGNET, M should read in such a way that they describe outcomes or results. They proposed an improvement to the table thus:

| | STICK PUT | ELECTRICITY PASSED | STICK INTRODUCED |
|-------|-----------|--------------------|------------------|
| STICK | IN WATER | IN STICK | TO MAGNET, M |
| A | sinks | conducts | gets attracted |
| B | sinks | conducts | gets attracted |
| C | sinks | insulates | nothing happens |
| D | sinks | conducts | nothing happens |
| E | floats | insulates | nothing happens |
| F | floats | conducts | nothing happens |
| G | floats | conducts | gets attracted |

LEXICAL PRINCIPLE - The teachers agreed that the stick was not an appropriate label for the examiner's drawing. It should be a bar or rod, as this is not made of wood. They felt that stick G should be drawn differently for it must be sealed, though hollow, at both ends, for it to float. This will require a change in the report.

PRAGMATIC PRINCIPLE - 9.1(ii) was unanimously regarded as a vague question; many questions were raised:- what type

1. do float on water but do not conduct electricity
e.g. amorphous carbon.
2. do sink in water and conduct electricity e.g. graphite.
3. do sink in water but do not conduct electricity e.g. diamond.

This means that "Stick" E can also be carbon. They decided that the answer is wrong; the language is unscientific. "It is a very bad question."

Question 10. This question was considered inappropriate for examination purposes because:

COHESIVE PRINCIPLE: Teachers felt that question 10D and 10E do not require the experiments to be answered.

LEXICAL PRINCIPLE: Some teachers were unable to tell the semantic difference between tuning folk (Group 1) and tuning fork (Group 2).

PRAGMATIC PRINCIPLE - Teachers puzzled over the referents of pupil in the report and you in question 10B. They said it was very confusing. The examiner must be specific, they said.

SEMANTIC PRINCIPLE - The teachers did not agree with the phrasing of 10D and 10E in Group 1 in that a fork cannot have a pitch. They also did not agree with the examiner's answer to 10D (Appendix 10).

A general observation of the teachers' perception of language and examination is that until the research, few of them realised how much harm the misuse of language in questions can do to pupils' reactions to the questions. Their knowledge of tense and Grammar in general seems wanting as one of them put it, "It will now look closely at all the past examination papers".

Footnote: OED¹ = Oxford English Dictionary (see Murry et.al., 1973)

APPENDIX 13: STATISTICAL TEST FORMULAE

1. Standard Deviation (s) (Tuckman, 1972)

$$S = \frac{N x^2 - (x)^2}{N(N - 1)}$$

where S = Standard Deviation

N = number of scores

x = Sum of individual scores

2. The Z - test (Z)

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

where Z = Z score

\bar{X}_1 = Mean score of Group A

\bar{X}_2 = Mean score of Group B

N_1 = No of scores of Group 1

N_2 = No of scores of Group 2

S_1^2 = Variance of Group 1

S_2^2 = Variance of Group 2

(See McCall, 1980, 3rd edn)

APPENDIX 14: 1986 JSSLE GEOGRAPHY CHIEF MARKERS' REPORT

The following Chief Markers raised specific linguistic points in their reports:

| NAME | MARKING CENTRE | SUB/REGION |
|------------------|----------------|-------------|
| Daka, J. K. | Chadiza | Eastern |
| Kaindu, O. W. | Mansa | Luapula |
| Kamanga, J. M. | Petauke | Eastern |
| Lumbwe, S. M. | Ndola | Ndola |
| Mufune, W. E. J. | Lundazi | Eastern |
| Muliokela, A.M. | Livingstone | Livingstone |
| Ngoma, G. M. | Kaoma | Western |
| Nkonde, H. C. | Chingola | Copperbelt |
| Phiri, L. A. | Chongwe | Lusaka |
| Phiri, S. L. | Kasama | Northern |
| Simuna, F. L. | Mazabuka | Mazabuka |

By Permission of P. G. Manda,
(National Chief Marker)

APPENDIX 15: GEOGRAPHY AND SCIENCE EDUCATION COURSE OUTLINES -
UNZA

| COURSE | YEAR | TRAINING IN EXAM- SETTING |
|---|------|------------------------------|
| ED325: Geography Teaching Methods (Double Major) | 3rd | Nil |
| ED360: Geography Teaching Methods (Single Major) | 3rd | Partial |
| ED425: Geography Teaching Methods (Double Major) | 4th | Partial |
| ED426: Geography Teaching Methods (Single Major) | 4th | Nil |
| ED320: Learning Processes (Compulsory for all Science Students) | 3rd | Nil |
| ED333: Biology Teaching Methods | 3rd | Partial |
| ED340: Biology Teaching Methods | 3rd | Partial |
| ED350: Physics Teaching Methods | 3rd | Partial |
| ED390: Chemistry Teaching Methods II | 3rd | Partial |
| ED432: Physics Teaching Methods II | 4th | Nil |
| ED433: Biology Teaching Methods II | 4th | Nil |

NOTES:

Geography: During tutorials students receive partial training in exam-setting. They are taught skills of examining: types of tests and examinations, characteristics of tests and examinations, advantages and disadvantages of tests and examinations (1 week in a year is devoted to this).

APPENDIX 15 CONTD.

NOTES:

- Science
- During laboratory times, students receive partial training in exam-setting. They are taught skills in various assessment techniques (2 or more weeks are devoted to this in a year).

 - Students taking Biology Teaching Methods courses have also to take Chemistry Teaching Methods courses. At 4th-year level students can take either course to go with any teaching course taken at 3rd-year level.

SOURCE: School of Education Handbooks 1984/85 and 1987/88

APPENDIX 16: SCIENCE EDUCATION (SE210) COURSE OUTLINE
COPPERBELT SECONDARY AND NKRUMAH TEACHERS'
COLLEGES

1. Performance and Non-Performance Objectives.
 2. Teaching Styles and Strategies.
 3. Assessment/Evaluation Schemes (Plans).
 4. Lesson Planning and Peer-Teaching.
 5. Resource Construction.
 6. Review of Junior Secondary Science Syllabus.
 7. The Science Department.
 8. Projects.
-

NOTES:

- The Colleges train students to teach Biology, Chemistry and Physics as Pure Applied Science (PAS110/210).
- Mr. M.K. Joseph, the Head of the Teachers College Associateship Unit informed the researcher that the Colleges did not train students in the setting of examinations.

SOURCE: - This **excerpt**(SE210) is from the 1987 Draft Syllabus of the Technical and Vocational Teachers' College, Luanshya, itself, Mr. I. Wamulwange, the Science Inspector - Higher Education - told the researcher, an excerpt from the Science Syllabus followed by Nkrumah and Copperbelt Secondary Teachers' Colleges.