

COUNCIL FOR QUALITY ASSURANCE IN GENERAL AND FURTHER EDUCATION AND TRAINING

Exemplar Book on Effective Questioning
Economics
Compiled by the Statistical Information and Research (SIR) Unit
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PREFACE

The National Senior Certificate (NSC) examinations are set and moderated in part using tools which specify the types of cognitive demand and the content deemed appropriate for Economics at Grade 12 level. Until recently, the level of cognitive demand made by a question was considered to be the main determinant of the overall level of cognitive challenge of an examination question.

However, during various examination evaluation projects conducted by Umalusi from 2008-2012, evaluators found the need to develop more complex tools to distinguish between questions which were categorised at the same cognitive demand level, but which were not of comparable degrees of difficulty. For many subjects, for each type of cognitive demand a three-level degree of difficulty designation, easy, moderate and difficult was developed. Evaluators first decided on the type of cognitive process required to answer a particular examination question, and then decided on the degree of difficulty, as an attribute of the type of cognitive demand, of that examination question.

Whilst this practice offered wider options in terms of easy, moderate and difficult levels of difficulty for each type of cognitive demand overcame some limitations of a one-dimensional cognitive demand taxonomy, other constraints emerged. Bloom's Taxonomy of Educational Objectives (BTEO) (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) and the Revised Bloom's Taxonomy are based on the assumption that a cumulative hierarchy exists between the different categories of cognitive demand (Bloom et al., 1956; Bloom, Hastings & Madaus, 1971). The practice of 'levels of difficulty' did not necessarily correspond to a hierarchical model of increasing complexity of cognitive demand. A key problem with using the level of difficulty as an attribute of the type of cognitive demand of examination questions is that, questions recognised at a higher level of cognitive demand are not necessarily categorised as more difficult than other questions categorised at lower levels of cognitive demand. For example, during analyses a basic recognition or

recall question could be considered more difficult than an easy evaluation question.

Research further revealed that evaluators often struggled to agree on the classification of questions at so many different levels. The finer categorization for each level of cognitive demand and the process of trying to match questions to pre-set definitions of levels of difficulty made the process of making judgments about cognitive challenge overly procedural. The complex two-dimensional multi-level model also made findings about the cognitive challenge of an examination very difficult for Umalusi Assessment Standards Committee (ASC) to interpret.

In an Umalusi Report, Developing a Framework for Assessing and Comparing the Cognitive Challenge of Home Language Examinations (Umalusi, 2012), it was recommended that the type and level of cognitive demand of a question and the level of a question's difficulty should be analysed separately. Further, it was argued that the ability to assess cognitive challenge lay in experts' abilities to recognise subtle interactions and make complicated connections that involved the use of multiple criteria simultaneously. However, the tacit nature of such judgments can make it difficult to generate a common understanding of what constitutes criteria for evaluating the cognitive challenge of examination questions, despite descriptions given in the policy documents of each subject.

The report also suggested that the Umalusi external moderators and evaluators be provided with a framework for thinking about question difficulty which would help them identify where the main sources of difficulty or ease in questions might reside. Such a framework should provide a common language for evaluators and moderators to discuss and justify decisions about question difficulty. It should also be used for building the capacity of novice or less experienced moderators and evaluators to exercise the necessary expert judgments by making them more aware of key aspects to consider in making such judgments.

The revised Umalusi examination moderation and evaluation instruments for each subject draw on research and literature reviews, together with the knowledge gained through the subject workshops. At these workshops, the proposed revisions were discussed with different subject specialists to attain a common understanding of the concepts, tools and framework used; and to test whether the framework developed for thinking about question difficulty 'works' for different content subjects. Using the same framework to think about question difficulty across subjects will allow for greater comparability of standards across subjects and projects.

An important change that has been made to the revised examination evaluation instrument is that the analysis of the type of cognitive demand of a question and analysis of the level of difficulty of each question are now treated as two separate judgments involving two different processes. Accordingly, the revised examination evaluation instrument now includes assessment of difficulty as well as cognitive demand.

LIST OF ABBREVIATIONS

Abbreviation	Full name	
ASC	Assessment Standards Committee	
BTEO	Bloom's Taxonomy of Educational Objectives	
CAPS Curriculum Assessment Policy Statement		
DBE	Department of Basic Education	
FET	Further Education and Training	
IEB	Independent Examinations Board	
NSC	National Senior Certificate	
NQF	National Qualifications Framework	
QAA	Quality Assurance of Assessment	
QCC	C Qualifications, Curriculum and Certification	
SIR	Statistical Information and Research	

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We also acknowledge the contributions of the members of the Umalusi Quality Assurance of Assessment (QAA); Qualifications, Curriculum and Certification (QCC) and Statistical Information and Research (SIR) Units.

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1. INTRODUCTION

The rules of assessment are essentially the same for all types of learning because, to learn is to acquire knowledge or skills, while to assess is to identify the level of knowledge or skill that has been acquired (Fiddler, Marienau & Whitaker, 2006). Nevertheless, the field of assessment in South Africa and elsewhere in the world is fraught with contestation. A review of the research literature on assessment indicates difficulties, misunderstanding and confusion in how terms describing educational measurement concepts, and the relationships between them, are used (Frisbie, 2005).

Umalusi believes that if all role players involved in examination processes can achieve a common understanding of key terms, concepts and processes involved in setting, moderating and evaluating examination papers, much unhappiness can be avoided. This exemplar book presents a particular set of guidelines for both novice and experienced Economics national examiners, internal and external moderators, and evaluators to use in the setting, moderation and evaluation of examinations at the National Senior Certificate (NSC) level.

The remainder of the exemplar book is organised as follows: First, the context in which the exemplar book was developed is described (Part 2), followed by a statement of its purpose (Part 3). Brief summaries of the roles of moderation and evaluation (Part 4) and cognitive demand (Part 5) an assessment. Examination questions selected from the NSC Economics examinations of assessment bodies, the Department of Basic Education (DBE), and/or the Independent Examinations Board (IEB) are used to illustrate how to identify different levels of cognitive demand as required by the Curriculum and Assessment Policy Statement (CAPS) Economics document (Part 6). Part 7 explains the protocols for identifying different levels of difficulty within a question paper. Application of the Umalusi framework for determining difficulty

described in Part 7 is illustrated, with reasons, by another set of questions from a range of Economics examinations (Part 8). Concluding remarks complete the exemplar book (Part 9).

2. CONTEXT

Umalusi has the responsibility to quality assure qualifications, curricula and assessments of National Qualification Framework (NQF) Levels 1 - 5. This is a legal mandate assigned by the General and Further Education and Training Act (Act 58 of 2001) and the National Qualification Framework Act (Act 67 of 2008). To operationalize its mandate, Umalusi, amongst other things, conducts research and uses the findings of this research to enhance the quality and standards of curricula and assessments.

Since 2003, Umalusi has conducted several research studies that have investigated examination standards. For example, Umalusi conducted research on the NSC examinations, commonly known as 'Matriculation' or Grade 12, in order to gain an understanding of the standards of the new examinations (first introduced in 2008) relative to those of the previous NATED 550 Senior Certificate examinations (Umalusi, 2009a, 2009b). Research undertaken by Umalusi has assisted the organisation to arrive at a more informed understanding of what is meant by assessing the cognitive challenge of the examinations and of the processes necessary for determining whether the degree of cognitive challenge of examinations is comparable within a subject, across subjects and between years.

Research undertaken by Umalusi has revealed that different groups of examiners, moderators and evaluators do not always interpret cognitive demand in the same way, posing difficulties when comparisons of cognitive challenge were required. The research across all subjects also showed that

using the type and level of cognitive demand of a question *only* as measure for judging the cognitive challenge of a question is problematic because cognitive demand levels on their own do not necessarily distinguish between degrees of difficulty of questions.

The new Umalusi framework for thinking about question difficulty described in this exemplar book is intended to support all key role players in making complex decisions about what makes a particular question challenging for Grade 12 examination candidates.

3. THE PURPOSE OF THE EXEMPLAR BOOK

The overall goal of this exemplar book is to ensure the consistency of standards of examinations across the years in the Further Education and Training (FET) sub-sector and Grade 12, in particular. The specific purpose is to build a shared understanding among teachers, examiners, moderators, evaluators, and other stakeholders, of methods used for determining the type and level of cognitive demand as well as the level of difficulty of examination questions.

Ultimately, the common understanding that this exemplar book seeks to foster is based on the premise that the process of determining the type and level of cognitive demand of questions and that of determining the level of difficulty of examination questions are two separate judgements involving two different processes, both necessary for evaluating the cognitive challenge of examinations. This distinction between cognitive demand and difficulty posed by questions needs to be made in the setting, moderation, evaluation and comparison of Economics examination papers.

The exemplar book includes an explanation of the new Umalusi framework which is intended to provide all role-players in the setting of Economics examinations with a common language for thinking and talking about

question difficulty. The reader of the exemplar book is taken through the process of evaluating examination questions; first in relation to determining the type and level of cognitive demand made by a question, and then in terms of assessing the level of difficulty of a question. This is done by providing examples of a range of questions which make different types of cognitive demands on candidates, and examples of questions at different levels of difficulty.

Each question is accompanied by an explanation of the reasoning behind why it was judged as being of a particular level of cognitive demand or difficulty, and the reasoning behind the judgements made is explained. The examples of examination questions provided were sourced by Economics evaluators from previous DBE and the IEB Economics question papers, pre- and post- the implementation of CAPS during various Umalusi workshops.

This exemplar book is an official document. The process of revising the Umalusi examination evaluation instrument and of developing a framework for thinking about question difficulty for both moderation and evaluation purposes has been a consultative one, with the DBE and the IEB assessment bodies. The new framework for thinking about question difficulty is to be used by Umalusi in the moderation and evaluation of Grade 12 Economics examinations, and by all the assessment bodies in the setting of the question papers, in conjunction with the CAPS documents.

4. MODERATION AND EVALUATION OF ASSESSMENT

A fundamental requirement, ethically and legally, is that assessments are fair, reliable and valid (American Educational Research Association [AERA], American Psychological Association [APA] and National Council on Measurement in Education [NCME], 1999). Moderation is one of several quality assurance assessment processes aimed at ensuring that an assessment is fair,

reliable and valid (Downing & Haladyna, 2006). Ideally, moderation should be done at all levels of an education system, including the school, district, provincial and national level in all subjects.

The task of Umalusi examination **moderators** is to ensure that the quality and standards of a particular examination are maintained each year. Part of this task is for moderators to alert examiners to details of questions, material and/or any technical aspects in examination question papers that are deemed to be inadequate or problematic and that therefore, challenge the validity of that examination. In order to do this, moderators need to pay attention to a number of issues as they moderate a question paper – these are briefly described below.

Moderation of the technical aspects of examination papers includes checking correct question and/or section numbering, and ensuring that visual texts and/or resource material included in the papers are clear and legible. The clarity of instructions given to candidates, the wording of questions, the appropriateness of the level of language used, and the correct use of terminology need to be interrogated. Moderators are expected to detect question predictability, for example, when the same questions regularly appear in different examinations, and bias in examination papers. The adequacy and accuracy of the marking memorandum (marking guidelines) need to be checked to ensure that they reflect and correspond with the requirements of each question asked in the examination paper being moderated.

In addition, the task of moderators is to check that papers adhere to the overall examination requirements as set out by the relevant assessment body with regard to the format and structure (including the length, type of texts or reading selections prescribed) of the examination. This includes assessing compliance with assessment requirements with regard to ensuring that the content is examined at an appropriate level and in the relative proportions (weightings) of content and/or skills areas required by the assessment body.

The role of Umalusi examination **evaluators** is to perform analysis of examination papers after they have been set and moderated and approved by the Umalusi moderators. This type of analysis entails applying additional expert judgments to evaluate the quality and standard of finalised examination papers before they are written by candidates in a specific year. However, the overall aim of this evaluation is to judge the comparability of an examination against the previous years' examination papers to ensure that consistent standards are being maintained over the years.

The results of the evaluators' analyses, and moderators' experiences provide the Umalusi Assessment Standards Committee (ASC) with valuable information which is used in the process of statistical moderation of each year's examination results. Therefore, this information forms an important component of essential qualitative data informing the ASC's final decisions in the standardisation of the examinations.

In order for the standardisation process to work effectively, efficiently and fairly, it is important that examiners, moderators and evaluators have a shared understanding of how the standard of an examination paper is assessed, and of the frameworks and main instruments that are used in this process.

5. COGNITIVE DEMANDS IN ASSESSMENT

The Standards for educational and psychological testing (AERA, APA, & NCME, 1999) require evidence to support interpretations of test scores with respect to cognitive processes. Therefore, valid, fair and reliable examinations require that the levels of cognitive demand required by examination questions are appropriate and varied (Downing & Haladyna, 2006). Examination papers should not be dominated by questions that require reproduction of basic

information, or replication of basic procedures, and under-represent questions invoking higher level cognitive demands.

Accordingly, the Grade 12 CAPS NSC subject examination specifications state that examination papers should be set in such a way that they reflect proportions of marks for questions at various level of cognitive demand. NSC examination papers are expected to comply with the specified cognitive demand levels and weightings. NSC examiners have to set and NSC internal moderators have to moderate examination papers as reflecting the proportions of marks for questions at different levels of cognitive demand as specified in the documents. Umalusi's external moderators and evaluators are similarly tasked with confirming compliance of the examinations with the CAPS cognitive demand levels and weightings, and Umalusi's revised examination evaluation instruments continue to reflect this requirement.

Despite that, subject experts, examiners, moderators and evaluators are familiar with the levels and explanations of the types of cognitive demand shown in the CAPS documents, Umalusi researchers have noted that individuals do not always interpret and classify the categories of cognitive demand provided in the CAPS the same way. In order to facilitate a common interpretation and classification of the cognitive demands made by questions, the next section of this exemplar book provides a clarification of each cognitive demand level for Economics followed by illustrative examples of examination questions that have been classified at that level of cognitive demand.

6. EXPLANATIONS AND EXAMPLES OF QUESTIONS ASSESSED AT THE DIFFERENT COGNITIVE DEMAND LEVELS IN THE ECONOMICS TAXONOMY ACCORDING TO CAPS

The taxonomies of cognitive demand for each school subject in the CAPS documents are mostly based on the Revised Bloom's Taxonomy (Anderson and Krathwohl, 2001) but resemble the original Bloom's taxonomy in that categories of cognitive demand are arranged along a single continuum. Bloom's Taxonomy of Educational Objectives (BTEO) (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) and the Revised Bloom's Taxonomy imply that each more advanced or successive category of cognitive demand subsumes all categories below it. The CAPS Taxonomies of Cognitive Demand make a similar assumption (Crowe, 2012).

Note:

In classifying the type and level of cognitive demand, each question is classified at the highest level of cognitive process involved. Thus, although a particular question involves recall of knowledge, as well as comprehension and application, the question is classified as an 'analysis' question if that is the highest level of cognitive process involved. If evaluating' is the highest level of cognitive process involved, the question as a whole should be classified as an 'evaluation' question. On the other hand, if one of more sub-sections of the question and the marks allocated for each sub-section can stand independently, then the level of cognitive demand for each sub-section of the question should be analysed separately.

The CAPS documents for many subjects also give examples of descriptive verbs that can be associated with each of the levels of cognitive demand. However, it is important to note that such 'action verbs' can be associated with more than one cognitive level depending on the context of a question.

The Economics CAPS document states that Grade 12 NSC Economics examination papers should examine three levels of cognitive demand (Table 1).

TABLE 1: THE TAXONOMY OF COGNITIVE DEMAND LEVELS FOR THE ECONOMICS NSC EXAMINATIONS

Level of cognitive Demand	Type of cognitive demand	Explanation of categorization Questions which require students:
Level 1	Basic thinking skills	These are questions that require factual recall, low-level application and low-level comprehension
Level 2	Middle order thinking skills	These are questions that require. more advanced application, interpretation and low-level analysis
Level 3	Higher order thinking skills	These are questions that require, advanced analytical skills, synthesis and evaluation

Source: CAPS (DBE, 2011, p40.)

To facilitate reading of this section, each of the above cognitive demand levels in the economics Taxonomy is explained, and the explanation is followed by at least **three** examples of questions from previous economics NSC examinations classified at each of the levels of cognitive demand shown in Table 1 above. These examples were selected to represent the **best and clearest** examples of each level of cognitive demand that the economics experts could find. The discussion below each example question explains the reasoning processes behind the classification of the question at that particular type of cognitive demand (Table 2 to Table 4).

Note:

Be mindful that analyses of the level of cognitive process of a question and the level of difficulty of each question are to be treated as two separate judgments involving two different processes. Therefore, whether the question is easy or difficult should not influence the categorisation of the question in terms of the type and level of cognitive demand. Questions should NOT be categorised as higher order evaluation/synthesis questions because they are difficult questions. Some questions involving the cognitive process of recall or recognition may be more difficult than other recall or recognition questions. Not all comprehension questions are easier than questions involving analysis or synthesis. Some comprehension questions may be very difficult, for example explanation of complex scientific processes. For these reasons you need to categorise the level of difficulty of questions separately from identifying the type of cognitive process involved.

TABLE 2: EXAMPLES OF QUESTIONS AT LEVEL 1 – BASIC THINKING SKILLS (FACTUAL RECALL, LOW-LEVEL APPLICATION AND LOW-LEVEL COMPREHENSION)

Example 1:

Question 1.1.3, 2011, DBE (2 marks)

Deliberate action by the South African Reserve Bank to lower the value of the rand is known as:

- a) depreciation;
- b) appreciation;
- c) devaluation.

Discussion:

This multiple-choice question tests low level factual recall and comprehension. Three options are given as possible answers to the question and candidates simply have to recognize the correct one. The correct answer even contains a hint or 'aide memoire' as it is a derivative of the word 'value'. Candidates could also recognize distinct clues provided in the question stem such as the words 'deliberate action' and 'lower'.

Memorandum/Marking guidelines

c) devaluation

Example 2:

Question 4.2, 2012, DBE. (6 marks)

Name any three incentive schemes which involve cash grants to promote regional industrial development.

Discussion:

Answering this question requires naming three processes. Candidates simply have to recall basic information and present this information. There are more than three possible answers and the candidate may recall any three. No explanation is required.

Memorandum/Marking guidelines

Any THREE incentive schemes which involve cash grants to promote regional industrial development

- Small and Medium Enterprises Development Programme/(SMEDP).
- Skills Support Programme/(SSP).
- Black Business Supplier Development Programme/(BBSDP).
- Critical Infrastructure Programme/(CIP).
- Foreign Investment Grant/(FIG).
- Strategic Investment Projects/SIP). (Any 3x2)

(6)

Example 3:

Question 4.3.1, 2012, DBE (4 marks)

Define the term economic growth.

Discussion:

This question requires recall of a basic economic term. A definition by nature is a narrow, tightly worded description of a term or construct. Only low-level comprehension of a core economic concept is required to define the term.

Memorandum/Marking guidelines

Economic growth consists of growth of the real GDP. It implies an increase in the capacity of the economy to produce more goods and services.

TABLE 3: EXAMPLES OF QUESTIONS AT LEVEL 2 – MIDDLE-ORDER THINKING SKILLS (APPLICATION, INTERPRETATION AND LOW-LEVEL ANALYSIS)

Example 1:

Question 5.3, 2012, DBE (8 marks)

Study the extract below and answer the questions that follow:

Low income households experience far greater pressure from inflation. The workers' consumer price index constructed by Statistics South Africa finds that low-income workers spend more than 45% of their income on food and beveragesmore than double the weighting these items enjoy in the official consumer price index basket. They also spend 8% of their income on electricity and transport – three to four times more than the average consumer. The workers' consumer price index averaged 10.1% in 2009 compared to wage settlements of 8.6%. According to Statistics South Africa the drivers of higher inflation include food, fuel and administered prices.

Why are low-income households negatively affected by weighting of items in the consumer price index basket?

Discussion:

This question requires candidates to demonstrate understanding and application of the concept 'inflation'. It also requires an interpretation of the information contained in the extract and a reasoned explanation as to why low-income households are negatively affected by weighting of items in the consumer price index basket. Answering the question requires that candidates engage with three concepts namely, 'low-income households', 'weighting' and 'consumer price index basket' and to analyse the relationship between them. Thus, it involves the cognitive processes of interpretation, application and low-level analysis.

Memorandum/Marking guidelines

- They experience a greater pressure from inflation than other income groups as a higher percentage of their income is spent on food and beverages.
- More than double the weighting these items enjoy in the official CPI basket.
- 45% of the income spent on food and beverages.
- The goods they consume the most, are the ones hard hit by inflation
- The workers' consumer price index averaged 10,1% in 2009 compared to wage settlements of 8.6%.

(Any 4 x 2) (6)

Example 2:

Question 5.3.3, 2012, DBE (adapted) (8 marks)

This question follows on from the extract in Example 1.

Given that low-income workers spend more than 45% of their income on food, why should wages be settled at the same or a higher figure than the average consumer price index?

Discussion:

This question requires comprehension and interpretation of information presented in the excerpt. Candidates have to make sense of (analyse) the argument that the excerpt presents with a view to developing an argument for the position they take. There are several key concepts that the candidates have to engage with and apply to be able to provide a well-reasoned answer. There are two parts to the low-level analysis required in order to make a decision, namely developing a rationale, firstly for settling at the 'same' level and, secondly, for settling at a 'higher' level. Answering the question thus involves the cognitive processes of interpretation, application and low-level analysis.

Memorandum/Marking guidelines

For workers to enjoy a better or the same standard of living

- workers should be able to afford basic goods.
- they should have enough money to satisfy their basic wants.
- cushions the effect of inflation.
- the real wage increases to keep track with the cost of living increases.
- (Any other relevant answer)

(8)

Example 3:

Question 3.5, 2012, IEB (16 marks)

'Price elasticity refers to the responsiveness of the quantity demanded of a certain product to a change in price.'

Using examples discuss in detail the following factors which affect price elasticity of demand:

- The range and availability of substitutes.
- The time period.
- The proportion of income spent on the product.
- Habit-forming products.

Discussion:

This question provides a definition of a key economic concept. It requires understanding and application of this concept to the four different scenarios or cases using examples. Each case is different and requires a different explanation of how the concept 'elasticity' plays itself out. Answering the question requires low-level analysis of each case. Therefore, it is classified as a middle order question.

Memorandum/Marking guidelines

Substitutes

The greater the number of substitute products and the more closely substitutable these products are, the more we would expect consumers to switch away from a particular product when its price goes up, i.e. the more elastic the demand is for the product.

For example, there are many different brands of margarine available on the market and so an increase in the price of one brand will lead to a large number of customers changing their demand to another brand.

Oil which has few substitutes will tend to have a relatively inelastic demand, with demand falling relatively little as price goes up. (Explanation 2 marks and example 2 marks)

(4)

Time period

As the price of a product changes, it often takes time for consumers to change their buying and consumption patterns. PED thus tends to be more inelastic in the short term and then becomes more elastic in the long term.

For example, if the price of petrol were to rise sharply, they would carry on buying more or less the same amount of petrol. However, over time cars that use less petrol, or none at all might be developed.

(Explanation 2 marks and example 2 marks)

(4)

Proportion of income spent on product

The higher the proportion of one's income spent on a product the more elastic the demand will be. **OR**

The lower the proportion of income spent on a product the more inelastic the demand would be.

Box of matches would not cost a large proportion of a worker's income, therefore, would be price inelastic demand. **OR**

However, a car would cost a large proportion and demand is therefore price elastic. (Explanation 2 marks and example 2 marks)

(4)

Habit forming goods

Some products are addictive, e.g. cigarettes and alcohol. A change in price has a relatively small impact on the quantity demanded. Therefore, demand is price inelastic.

(Explanation 2 marks and example 2 marks)

(4) **(16)**

TABLE 4: EXAMPLES OF QUESTIONS AT LEVEL 3 – HIGHER-ORDER THINKING SKILLS (ADVANCED ANALYTICAL SKILLS, SYNTHESIS AND EVALUATION)

Example 1:

Question 2.5.2, 2012, IEB (adapted) (16)

If you were an economic advisor to the South African government, evaluate the effectiveness of current monetary and fiscal policy and make recommendations for economic growth.

Discussion:

This question requires that the candidate assume the role of an economic expert who will offer advice to the government. The advice is not generic, but focusses on a very fundamental and important economic phenomenon, namely economic growth. The literature/theory in neoclassical economics suggests various strategies that free market economies may adopt depending on the circumstances that a country finds itself in. A further complication is that there are variations on the level of freedom in different economies. The candidate has to demonstrate an understanding of the current South African context. This process necessarily means that they have to harness (synthesise) their knowledge of different policy options, analyse and evaluate their applicability at a particular point in time, and recommend on the basis of sound judgment what they deem to be the most effective policies to advance economic growth. The question is therefore classified as a higher order question requiring advanced analytical skills, synthesis and evaluation.

Memorandum/Marking guidelines

Expansionary monetary policy

Decrease interest rates therefore encourage borrowing which will increase demand and there will be more spending in the economy. (max 8)

Expansionary fiscal policy

Decrease taxes. Consumers have more disposable income therefore increase in spending/higher demand. Increase in government spending. (max 8)

*Contemporary economic data should be incorporated into the discussion to lead particular arguments.

Example 2:

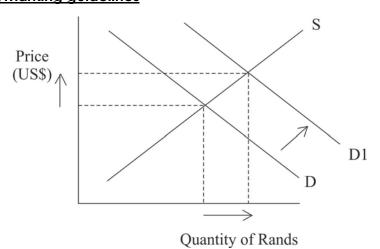
Question: 6.6, 2012, IEB (12)

Use a graph and a discussion to predict what would happen to the value of the Rand against the American dollar, if there was a surplus on South Africa's balance of payments.

Discussion:

This question requires the candidate to construct a visual representation (in this case a graph) to support a written explanation. However, the question expects more than an explanation; it calls for prediction of the outcome of the interaction of two variables as a result of a particular occurrence with an outside factor. It requires a firm and clear understanding of how the variables influence and relate to each other and the influence of shifts in a macro indicator. Prediction as a competence requires students to analyse and assess the current context and to speculate about the consequence of the particular occurrence using economic reasoning (synthesis).

Memorandum/Marking guidelines



Label X and Y axes label D and S. Shift in demand curve to D1. Arrow showing increase in the price of Rand against the \$ (Diagram = max 6 marks.)

If there is a now a surplus on the current account it means that more money will be coming into SA than leaving. This will result in an increased demand for Rands by

foreigners. This will lead to an appreciation of the Rand against the Dollar. (Discussion = max 6 marks.)

Example 3:

Question 9, 2010, DBE (50)

Discuss and assess the economic indicators as depicted below, in terms of the state of the South African economy.

ECONOMIC INDICATORS MEASURE THE PERFOMANCE OF THE SOUTH AFRICAN ECONOMY

	2008	2009
R(GDP)	-2%	-6%
PER CAPITA R(GDP)	R22 622	R23 403
CPI	9.0%	6.2%
REPO RATE	10.5%	7.5%
GINI COEFFICIENT	57,8	57,8

Discussion:

In this question, candidates are required to first offer a high-level explanation (discussion) of key macro-economic indicators presented over a two-year period. These are complex concepts. The discussion entails making a comparative analysis of movements/changes from year to year. Candidates are then required to move from providing an individual analysis of each indicator to assessing how the indicators work together to shape the South African economy (synthesis and evaluation). The question is therefore classified as a higher order question requiring the cognitive processes of analysis, synthesis and evaluation.

Memorandum/Marking guidelines

Explanation of each macro-economic indicator

- Real GDP
- Per capita GDP
- Consumer price Index
- Reporate
- Gini Coefficient (max 16 marks)

Comparative explanation of each indicator over the two-year period (10) Substantiated judgment of each. (10)

Analysis of how the indicators work together to shape the South African economy. (10)

Synthesizing comments. (4)

To accomplish the goal of discriminating between high achievers, those performing very poorly, and all candidates in between, examiners need to vary the challenge of examination questions. Until recently, the assumption has been that 'alignment' with the allocated percentage of marks for questions at the required cognitive demand

levels meant that sufficient examination questions were relatively easy; moderately challenging; and difficult for candidates to answer.

However, research and candidate performance both indicate that a range of factors other than type of cognitive demand contribute to the cognitive challenge of question. Such factors include the level of content knowledge required, the language used in the question, and the complexity or number of concepts tested. In other words, cognitive demand levels on their own do not necessarily distinguish between degrees of difficulty of questions.

This research helps, to some extent, explain why, despite that some NSC examination papers have complied with the specified cognitive demand weightings stipulated in the policy, they have not adequately distinguished between candidates with a range of academic abilities in particular between higher ability candidates. As a result, examiners, moderators and evaluators are now required to assess the difficulty of level of each examination question in addition to judging its cognitive demand.

Section 7 below explains the new protocol introduced by Umalusi for analysing examination question difficulty.

7 ANALYSING THE LEVEL OF DIFFICULTY OF EXAMINATION QUESTIONS

When analysing the level of difficulty of each examination question, there are six important protocols to note. These are:

- 1. Question difficulty is **assessed independently** of the type and level **of cognitive demand**.
- 2. Question difficulty is assessed against four levels of difficulty.
- 3. Question difficulty is determined against the assumed capabilities of the **ideal 'envisaged'** Grade 12 economics NSC examination **candidate**.
- 4. Question difficulty is determined using a common framework for thinking about question difficulty.
- 5. Question difficulty entails distinguishing unintended sources of difficulty or ease from intended sources of difficulty or ease.

6. Question difficulty entails identifying **differences** in levels of difficulty within a single question.

Each of the above protocols is individually explained and discussed below.

7.1 Question difficulty is assessed independently of the type and level of cognitive demand

As emphasised earlier in this exemplar book, the revised Umalusi NSC examination evaluation instruments separate the analysis of the type of cognitive demand of a question from the analysis of the level of difficulty of each examination question. Cognitive demand describes the type of cognitive process that is required to answer a question, and this does not necessarily equate or align with the level of difficulty of other aspects of a question, such as the difficulty of the content knowledge that is being assessed. For example, a recall question can ask a candidate to recall very complex and abstract scientific content. The question would be categorised as Level 1 in terms of the cognitive demand taxonomy but may be rated as 'difficult' (Level 3 Table 5 below).

Note:

Cognitive demand is just one of the features of a question that can influence your comparative judgments of question difficulty. The type and level of cognitive process involved in answering a question does not necessarily determine how difficult the question would be for candidates. Not all evaluation/synthesis /analysis questions are more difficult than questions involving lower-order processes such as comprehension or application.

7.2 Question difficulty is assessed at four levels of difficulty

The revised Umalusi NSC examination evaluation instruments require evaluators to exercise expert judgments about whether each examination question is 'Easy', 'Moderately challenging', 'Difficult' or 'Very difficult' for the envisaged

Grade 12 learner to answer. Descriptions of these categories of difficulty are shown in Table 5.

TABLE 5: LEVELS OF DIFFICULTY OF EXAMINATION QUESTIONS

1	2	3	4
Easy for the envisaged Grade 12 student to answer.	Moderately challenging for the envisaged Grade 12 student to answer.	Difficult for the envisaged Grade 12 student to answer.	Very difficult for the envisaged Grade 12 student to answer. The skills and knowledge required to answer the question allow for the top students (extremely high-achieving/ability students) to be discriminated from other high achieving/ability students).

Note:

The forth level, 'very difficult' has been included in the levels of difficulty of examination questions to ensure that there are sufficient questions that discriminate well amongst higher ability candidates.

7.3 Question difficulty is determined against the assumed capabilities of the ideal 'envisaged' Grade 12 economics NSC examination candidate

The revised Umalusi NSC examination evaluation instruments require evaluators to exercise expert judgments about whether each examination question is 'Easy', 'Moderately challenging', 'Difficult' or 'Very difficult' for the 'envisaged' Grade 12 learner to answer (Table 5). In other words, assessment of question difficulty is linked to a particular target student within the population of NSC candidates, that is, the Grade 12 candidate of average intelligence or ability.

The Grade 12 learners that you may have taught over the course of your career cannot be used as a benchmark of the 'envisaged' candidate as we cannot

know whether their abilities fall too high, or too low on the entire spectrum of all Grade 12 economics candidates in South Africa. The revised Umalusi NSC examination evaluation instruments thus emphasise that, when rating the level of the difficulty of a particular question, your conception of the 'envisaged' candidate needs to be representative of the entire population of candidates for all schools in the country, in other words, of the overall Grade 12 population.

Most importantly, the conception of this 'envisaged' candidate is a learner who has been taught the whole curriculum adequately by a teacher who is qualified to teach the subject, in a functioning school. There are many disparities in the South African education system that can lead to very large differences in the implementation of the curriculum. Thus this 'envisaged' learner is not a typical South African Grade 12 learner – it an intellectual construct (an imagined person) whom you need to imagine when judging the level of difficulty of a question. This ideal 'envisaged' Grade 12 learner is an aspirational ideal of where we would like all economics learners in South Africa to be.

Note:

The concept of the *ideal envisaged Grade 12 candidate is* that of an imaginary learner who has the following features:

- a. Is of average intelligence or ability
- b. Has been taught by a competent teacher
- c. Has been exposed to the entire examinable curriculum

This envisaged learner represents an imaginary person who occupies the middle ground of ability and approaches questions having had all the necessary schooling.

7.4 Question difficulty is determined using a common framework for thinking about question difficulty

Examiners, moderators and evaluators in all subjects are now provided with a common framework for thinking about question difficulty to use when

identifying sources of difficulty or ease in each question, and to provide their reasons for the level of difficulty they select for each examination question.

The framework described in detail below provides the main sources of difficulty or 'ease' inherent in questions. The four sources of difficulty which must be considered when thinking about the level of difficulty of examination questions in this framework are as follows.

- 1. 'Content difficulty' refers to the difficulty inherent in the subject matter and/or concept/s assessed.
- 2. 'Stimulus difficulty' refers to the difficulty that candidates confront when they attempt to read and understand the question and its source material. The demands of the reading required to answer a question thus forms an important element of 'stimulus difficulty'.
- 3. 'Task difficulty' refers to the difficulty that candidates confront when they try to formulate or produce an answer. The level of cognitive demand of a question forms an element of 'Task difficulty', as does the demand of the written text or representations that learners are required to produce for their response.
- 4. 'Expected response difficulty' refers to difficulty imposed by examiners in a marking guideline, scoring rubric or memorandum. For example, mark allocations affect the amount and level of answers students are expected to write.

This framework derived from Leong (2006) was chosen because it allows the person making judgments about question difficulty to grapple with nuances and with making connections. The underlying assumption is that judgment of question difficulty is influenced by the interaction and overlap of different aspects of the four main sources of difficulty. Whilst one of the above four sources of difficulty may be more pronounced in a specific question, the other three sources may also be evident. Furthermore, not all four sources of difficulty need to be present for a question to be rated as difficult.

The four-category conceptual framework is part of the required Umalusi examination evaluation instruments. Each category or source of difficulty in this

framework is described and explained in detail below (Table 6). Please read the entire table very carefully.

TABLE 6: FRAMEWORK FOR THINKING ABOUT QUESTION DIFFICULTY

CONTENT/CONCEPT DIFFICULTY

Content/concept difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge assessed or required. In this judgment of the item/question, difficulty exists in the academic and conceptual demands that questions make and/or the grade level boundaries of the various 'elements' of domain/subject knowledge (topics, facts, concepts, principles and procedures associated with the subject).

For example:

Questions that assess 'advanced content', that is, subject knowledge that is considered to be in advance of the grade level curriculum, are *likely* to be difficult or very difficult for most candidates. Questions that assess subject knowledge which forms part of the core curriculum for the grade are *likely* to be moderately difficult for most candidates. Questions that assess 'basic content' or subject knowledge candidates would have learnt at lower grade levels, and which would be familiar to them are *unlikely* to pose too much of a challenge to most candidates.

Questions that require general everyday knowledge or knowledge of 'real life' experiences are often easier than those that test more **specialized** school **knowledge**. Questions involving only concrete objects, phenomena, or processes are usually easier than those that involve more **abstract constructs**, **ideas**, **processes or modes**.

Questions which test learners' understanding of theoretical or **de-contextualised issues or topics**, rather than their knowledge of specific examples or contextualised topics or issues *tend* to be more difficult. Questions involving familiar, contemporary/current contexts or events are *usually* easier than those that are more **abstract or** involve **'imagined' events** (e.g. past/future events) or **contexts** that are **distant from learners' experiences**.

Content difficulty may also be varied by changing the number of knowledge elements or operations assessed. Generally, the difficulty of a question increases with the number of knowledge elements or operations assessed. Questions that assess learners on two or more knowledge elements or operations are usually (but not always) more difficult than those that assess a single knowledge element or operation.

Assessing learners on a combination of knowledge elements or operations that are seldom combined usually increases the level of difficulty.

EXAMPLES OF INVALID OR UNINTENDED SOURCE OF CONTENT DIFFICULTY

- Testing obscure or unimportant concepts or facts that are not mentioned in the curriculum, or which are unimportant to the curriculum learning objectives.
- Testing very advanced concepts or operation that candidates are extremely unlikely to have had opportunities to learn.

STIMULUS DIFFICULTY

Stimulus difficulty refers to the difficulty of the linguistic features of the question (linguistic complexity) and the challenge that candidates face when they attempt to read, interpret and understand the words and phrases in the question AND when they attempt to read and understand the information or 'text' or source material (diagrams, tables and graphs, pictures, cartoons, passages, etc.) that accompanies the question.

For example:

Questions that contain words and phrases that require only simple and straightforward comprehension are usually easier than those that require the candidate to understand **subject specific phraseology and terminology** (e.g. idiomatic or grammatical language not usually encountered in everyday language), or that require more technical comprehension and specialised command of words and language (e.g. everyday words involving different meanings within the context of the subject).

Questions that contain information that is 'tailored' to an expected response, that is, questions that contain no irrelevant or distracting information, are generally easier than those than require candidates to select relevant and appropriate information or **unpack a large amount of information** for their response. A question **set in a very rich context** can increase question difficulty. For example, learners may find it difficult to select the correct operation when, for example, a mathematics or accountancy question is set in a context-rich context.

Although the level of difficulty in examinations is usually revealed most clearly through the questions, text complexity or the degree of challenge or complexity in written or graphic texts (such as a graph, table, picture, cartoon, etc.) that learners are required to read and interpret in order to respond can increase the level of difficulty. Questions that depend on reading and selecting content from a text can be more challenging than questions that do not depend on actually reading the accompanying text because they test reading comprehension skills as well as subject knowledge. Questions that require candidates to read a lot can be more challenging than those that require limited reading. Questions that tell learners where in the text to look for relevant information are usually easier that those where learners are not told where to look.

The level of difficulty may increase if texts set, and reading passages or other source material used are challenging for the grade level, and make high reading demands on learners at the grade level. Predictors of textual difficulty include:

• **semantic content** - for example, if vocabulary and words used are typically outside the reading vocabulary of Grade 12 learners, 'texts' (passage,

- cartoon, diagram, table, etc.) are usually more difficult. 'Texts' are generally easier if words or images are made accessible by using semantic/context, syntactic/structural or graphophonic/visual cues.
- **syntactic or organisational structure** for example, sentence structure and length. For example, if learners are likely to be *familiar with the structure* of the 'text' or resource, for example, from reading newspapers or magazines, etc. 'texts' are *usually* easier than when the structure is unfamiliar.
- **literary techniques** for example, abstractness of ideas and imagery and **background knowledge required**, for example, to make sense of allusions.
- if the **context** is **unfamiliar** or remote, or if candidates do not have or are **not provided with access to the context** which informs a text (source material, passage, diagram, table, etc.) they are expected to read, and which informs the question they are supposed to answer and the answer they are expected to write, then constructing a response is *likely* to be more difficult than when the context is provided or familiar.

Questions which require learners to **cross-reference different sources** are usually more difficult than those which deal with one source at a time.

Another factor in stimulus difficulty is presentation and visual appearance. For example, type face and size, use of headings, and other types of textual organisers etc. can aid 'readability' and make it easier for learners to interpret the meaning of a question.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF STIMULUS DIFFICULTY

- Meaning of words unclear or unknown.
- Difficult or impossible to work out what the question is asking.
- Questions which are ambiguous.
- Grammatical errors in the question that could cause misunderstanding.
- Inaccuracy or inconsistency of information or data given.
- Insufficient information provided.
- Unclear resource (badly drawn or printed diagram, inappropriate graph, unconventional table).
- Dense presentation (too many important points packed in a certain part of the stimulus).

TASK DIFFICULTY

Task difficulty refers to the difficulty that candidates confront when they try to formulate or produce an answer.

For example:

In most questions, to generate a response, candidates have to work through the steps of a solution. Generally, questions that **require more steps in a solution** are more difficult than those that require fewer steps. Questions involving only one or two steps in the solution are *generally* easier than those where several operations required for a solution.

Task difficulty may also be mediated by the **amount of guidance present in the question**. Although question format is not necessarily a factor and difficult

questions can have a short or simple format, questions that provide guided steps or cues (e.g. a clear and detailed framework for answering) are generally easier than those that are more open ended and require candidates to form or tailor their **own response strategy** or argument, work out the steps **and maintain the strategy for answering** the question by themselves. A high degree of prompting (a high degree of prompted recall, for example) tends to reduce difficulty level.

Questions that test specific knowledge are usually less difficult that **multi-step**, **multiple-concept or operation questions**.

A question that requires the candidate to **use** a **high level of** appropriate **subject specific**, **scientific** or **specialised terminology in** their **response** *tends* to be more difficult than one which does not.

A question requiring candidates to **create a complex abstract (symbolic or graphic) representation** is usually more challenging than a question requiring candidates to create a concrete representation.

A question requiring writing a one-word answer, a phrase, or a simple sentence is often easier to write than responses that require more complex sentences, a paragraph or a full essay or composition.

Narrative or descriptive writing, for example where the focus is on recounting or ordering a sequence of events chronologically, is usually easier than writing discursively (argumentatively or analytically) where ideas need to be developed and ordered logically. Some questions reflect task difficulty simply by 'creating the space' for A-grade candidates to demonstrate genuine insight, original thought or good argumentation, and to write succinctly and coherently about their knowledge.

Another element is the **complexity in structure of the required response**. When simple connections between ideas or operations are expected in a response, the question is *generally* easier to answer than a question in which the significance of the relations between the parts and the whole is expected to be discussed in a response. In other words, a question in which an unstructured response is expected is *generally* easier than a question in which a **relational response** is required. A response which involves **combining or linking a number of complex ideas or operations** is *usually* more difficult than a response where there is no need to combine or link ideas or operations.

On the other hand, questions which require continuous prose or extended writing may also be easier to answer correctly or to get marks for than questions that require no writing at all or single letter answer (such as multiple choice), or a brief response of one or two words or short phrase/s because they **test very specific knowledge**.

The **cognitive demand** or **thinking processes** required form an aspect of task difficulty. Some questions test thinking ability, and learners' capacity to deal with ideas, etc. Questions that assess inferential comprehension or application of knowledge, or that require learners to take ideas from one context and use it in another, for example, *tend* to be more difficult than questions that assess recognition or retrieval of basic information. On the other hand, questions requiring

recall of knowledge are usually more difficult than questions that require simple recognition processes.

When the **resources for answering** the question are included in the examination paper, then the task is usually easier than when candidates have to **use and select their own internal resources** (for example, their own knowledge of the subject) or transform information to answer the question.

Questions that require learners to take or transfer ideas, skills or knowledge from one context/subject area and use them in another tend to be more difficult.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF TASK DIFFICULTY

- Level of detail required in an answer is unclear.
- Context is unrelated to or uncharacteristic of the task than candidates have to do
- Details of a context distract candidates from recalling or using the right bits of their knowledge.
- Question is unanswerable.
- Illogical order or sequence of parts of the questions.
- Interference from a previous question.
- Insufficient space (or time) allocated for responding.
- Question predictability or task familiarity. If the same question regularly
 appears in examination papers or has been provided to schools as
 exemplars, learners are likely to have had prior exposure, and practised and
 rehearsed answers in class (for example, when the same language set works
 are prescribed each year).
- Questions which involve potential follow-on errors from answers to previous questions.

EXPECTED RESPONSE DIFFICULTY

Expected response difficulty refers to difficulty imposed by examiners in a **mark scheme and memorandum**. This location of difficulty is more applicable to 'constructed' response questions, as opposed to 'selected' response questions (such as multiple choice, matching/true-false).

For example:

When examiners expect few or no details in a response, the question is generally easier than one where the mark scheme implies that a lot of details are expected. A further aspect of expected response difficulty is the clarity of the allocation of marks. Questions are generally easier when the allocation of marks is explicit, straight-forward or logical (i.e. 3 marks for listing 3 points) than when the mark allocation is indeterminate or implicit (e.g. when candidates need all 3 points for one full mark or 20 marks for a discussion of a concept, without any indication of how much and what to write in a response). This aspect affects difficulty because candidates who are unclear about the mark expectations in a response may not produce sufficient amount of answers in their response that will earn the marks that befit their ability.

Some questions are more difficult/easy to mark accurately than others. Questions that are **harder to mark and score objectively** are generally more difficult for

candidates than questions that require simple marking or scoring strategies on the part of markers. For example, recognition and recall questions are usually easier to test and mark objectively because they usually require the use of matching and/or simple scanning strategies on the part of markers. More complex questions requiring analysis (breaking down a passage or material into its component parts), evaluation (making judgments, for example, about the worth of material or text, or about solutions to a problem), synthesis (bringing together parts or elements to form a whole), and creativity (presenting own ideas or original thoughts) are generally harder to mark/score objectively. The best way to test for analysis, evaluation, synthesis and creativity is usually through extended writing. Such extended writing generally requires the use of more cognitively demanding marking strategies such as interpreting and evaluating the logic of what the candidate has written.

Questions where **a wide range of alternative answers or response/s** is possible or where the correct answer may be arrived at through different strategies *tend* to be more difficult. On the other hand, questions may be so open-ended that learners will get marks even if they engage with the task very superficially.

EXAMPLES OF INVALID OR UNINTENDED SOURCES OF EXPECTED RESPONSE DIFFICULTY

- Mark allocation is unclear or illogical. The weighting of marks is important in
 questions that comprise more than one component when components vary
 in levels of difficulty. Learners may be able to get the same marks for
 answering easy component/s of the item as other learners are awarded for
 answering the more difficult components.
- Mark scheme and questions are incongruent. For example, there is no clear correlation between the mark indicated on the question paper and the mark allocation of the memorandum.
- Question asked is not the one that examiners want candidates to answer.
 Memorandum spells out expectation to a slightly different question, not the actual question.
- Impossible for candidate to work out from the question what the answer to the question is (answer is indeterminable).
- Wrong answer provided in memorandum.
- Alternative correct answers from those provided or spelt out in the memorandum are also plausible.
- The question is 'open' but the memo has a closed response. Memo allows no leeway for markers to interpret answers and give credit where due.

The framework described above does not provide you with explicit links between the different sources of difficulty, or show relationships and overlaps between the different categories and concepts in the framework. This is because it is impossible to set prescribed rules or pre-determined combinations of categories and concepts used for making judgments about the source of difficulty in a particular examination question.

The intention behind the framework is to allow you to exercise your sense of judgment as an expert. The complexity of your judgment lies in your ability as an expert to recognise subtle interactions and identify links between different categories of a question's difficulty or ease. For example, a question that tests specific knowledge of your subject can actually be more difficult that a multistep question because it requires candidates to explain a highly abstract concept, or very complex content. In other words, although questions that test specific knowledge are usually less difficult than multiple-concept or operation questions, the level of difficulty of the content knowledge required to answer a question can make the question more difficult than a multi-step or multi-operation question.

Not all one-word response questions can automatically be assumed to be easy. For example, multiple-choice questions are not automatically easy because a choice of responses is provided – some can be difficult. As an expert in your subject, you need to make these types of judgments about each question.

Note:

It is very important that you become extremely familiar with the framework explained in Table 6, and with each category or source of difficulty provided (i.e. content difficulty, task difficulty, stimulus difficulty, and expected response difficulty). You need to understand the examples of questions which illustrate each of the four levels (Table 7 to Table 10). This framework is intended to assist you in discussing and justifying your decisions regarding the difficulty level ratings of questions. You are expected to **refer to all four categories or sources of difficulty** in justifying your decisions.

When considering question difficulty ask:

- How difficult is the knowledge (content, concepts or procedures) that is being assessed for the envisaged Grade 12 candidate? (Content difficulty)
- How difficult is it for the envisaged I Grade 12 candidate to formulate the
 answer to the question? In considering this source of difficulty, you should take
 into account the type of cognitive demand made by the task. (Task difficulty)
- How difficult is it for the envisaged Grade 12 candidate to understand the question and the source material that need to be read to answer the particular question? (Stimulus difficulty)
- What does the marking memorandum and mark scheme show about the difficulty of the question? (Expected response difficulty)

7.5 Question difficulty entails distinguishing unintended sources of difficulty or ease from intended sources of difficulty or ease

Close inspection of the framework for thinking about question difficulty (Section 7.4, Table 6) above, shows that, for each general category or source of difficulty, the framework makes a distinction between 'valid' or intended, and 'invalid' or unintended sources of question difficulty or ease. Therefore, defining question difficulty entails identifying whether sources of difficulty or ease in a question were intended or unintended by examiners. Included in Table 6 are examples of unintended sources of difficulty or ease for each of the four categories.

Valid difficulty or 'easiness' in a question has its source in the requirements of the question, and is *intended* by the examiner (Ahmed and Pollit, 1999). Invalid sources of difficulty or 'easiness' refer to those features of question difficulty or 'easiness' that were *not intended* by the examiner. Such unintended 'mistakes' or omissions in questions can prevent the question from assessing what the examiner intended, and are likely to prevent candidates from demonstrating their true ability or competence, and can result in a question being easier or more difficult than the examiner intended.

For example, grammatical errors in a question that could cause misunderstanding for candidates are unintended sources of question difficulty because the difficulty in answering the question could lie in the faulty formulation of the question, rather than in the intrinsic difficulty of the question itself (for example, because of stimulus difficulty). Candidates "may misunderstand the question and therefore not be able to demonstrate what they know" (Ahmed and Pollit, 1999, p.2). Another example is question predictability (when the same questions regularly appear in examination papers or textbooks) because familiarity can make a question which was intended to be difficult, less challenging for examination candidates.

Detecting unintended sources of difficulty or ease in examinations is largely the task of moderators. Nevertheless, evaluators also need to be vigilant about detecting sources which could influence or alter the intended level of question difficulty that moderators may have overlooked.

Note:

When judging question difficulty, you should distinguish unintended sources of question difficulty or ease from those sources that are intended, thus ensuring that examinations have a range of levels of difficulty that does not include invalid sources of difficulty. The framework for thinking about question difficulty allows you to systematically identify technical and other problems in each question. Examples of problems might be: unclear instructions, poor phrasing of questions, the provision of inaccurate and insufficient information, unclear or confusing visual sources or illustrations, incorrect use of terminology, inaccurate or inadequate answers in the marking memorandum, and question predictability. You should not rate a question as difficult/easy if the source of difficulty/ease lies in the 'faultiness' of the question or memorandum. Instead, as moderators and evaluators, you need to alert examiners to unintended sources of difficulty/ease so that they can improve questions and remedy errors or sources of confusion before candidates write the examination.

7.6 Question difficulty entails identifying differences in levels of difficulty within a single question

An examination question can incorporate more than one level of difficulty if it has subsections. It is important that the components of such questions are 'broken down' into to their individual levels of difficulty.

Note:

Each subsection of a question should be analysed separately so that the percentage of marks allocated at each level of difficulty and the weighting for each level of difficulty can be ascertained as accurately as possible for that question.

8. EXAMPLES OF QUESTIONS AT DIFFERENT LEVELS OF DIFFICULTY

This section provides at least **three** examples of questions from previous economics NSC examinations (Table 7 to Table 10) categorised at each of the four levels of difficulty described in Section 7 (Table 5) above. These examples were selected to represent the **best and clearest** examples of each level of difficulty that the economics experts could find. The discussion below each example question tries to explain the reasoning behind the judgments made about the categorisation of the question at that particular level of difficulty.

TABLE 7: EXAMPLES OF QUESTIONS AT DIFFICULTY LEVEL 1 - EASY

Example 1:

Question 2.2, 2012, DBE 2012

Name three services provided by the government. (2x3 = 6)

This question is classified as easy for the envisaged Grade 12 candidate because:

- The task requires recall of basic content that all Grade 12 candidates should have been exposed to from Grade 10 onwards. Candidates only have to write three words or short phrases. (task)
- The knowledge required to answer the question is 'everyday' economic knowledge; it relates to the services that the government provides to citizens of a country. (content)
- The linguistic features of the question should not pose any challenges to Grade 12 candidates. The instructions are explicit; they only have to name THREE services. (stimulus)
- 6 marks are allocated for the question. 2 marks are awarded per service named. This mark allocation is made explicit for candidates (2x3 = 6). The mark allocation is thus straightforward and the answers are short and easy to mark. It should be easy for the envisaged Grade 12 candidate to get full marks for this question. (expected response) =

Thus, the question is easy in relation to all four possible sources of difficulty.

Memorandum/Marking guidelines

- Protection e.g. police force
- Economic e.g. provision of water
- General e.g. infrastructure
- Social e.g. pension, grants
- Public goods
- Community goods
- Collective goods
- Merit goods
- Take care of common resources
- Manage the economy

Allocate 2 marks for any other relevant examples (Any 3x2) (6)

Example 2:

Question 2.1.1, 2011, DBE

Choose the correct word from those given in brackets.

Household savings are channelled through the (labour/financial) markets (2 marks).

Discussion:

This question is classified as easy for the envisaged Grade 12 candidate because:

- Answering the question requires knowledge of basic economic concepts, namely savings and financial markets (content).
- Candidates simply have to recognize the correct option out of just two options provided and write down the correct word (task).
- The instructions are clear and the terms used should all be familiar to Grade 12 candidates. Only two possible options are presented to choose from. There is also a distinct clue provided in the question itself that could help candidate select the correct answer, namely, the word 'savings' (stimulus).
- Candidates only need to write down one word as their answer. There is only
 one possible correct answer and this single answer counts for 2 marks. Thus,
 the mark allocation and marking of the question is straightforward. It should
 be easy for the envisaged Grade 12 candidate to get full marks for this
 question (expected response).

Thus, the question is easy in relation to all four possible sources of difficulty.

Memorandum/Marking guidelines

financial

Example 3:

Q1.1.1, 2014, DBE (2 marks)

The flow of money from the financial sector into the economy is called an/a...

A injection

B expense

C leakage (2 marks)

Discussion:

This question is classified as easy for the envisaged Grade 12 candidate because:

- It tests basic knowledge which should have been taught and learnt from Grade 10 onwards, namely, the movement of financial resources (money) into the economy (content).
- The task simply entails completing the opening statement by identifying/ selecting and writing the correct word from the three options provided (task).
- The question is easy to understand and contains terms that should be familiar to the envisaged Grade 12 candidate. The stem of the question offers clues as to what the correct answer is; the word 'into' signals that the correct answer is 'injection' (stimulus).
- 2 marks are allocated for writing one correct word. There is only one
 possible answer. Marking the question and the mark allocation is therefore
 straightforward and it should be easy for the envisaged Grade 12
 candidate to get full marks for this question (expected response).

Thus, the question is easy in relation to all four possible sources of difficulty.

Memorandum/Marking guidelines

A. Injection

TABLE 8: EXAMPLES OF QUESTIONS AT DIFFICULTY LEVEL 2 - MODERATE

Example 1:

Question 1.9, 2012 IEB (3 marks)

The South African CPI was 112.4 in October 2010 and 119.3 in October 2011. The rate of inflation in October 2011 was therefore ...

A 5.8%

B 1.1%

C 6.1%

D 11%

(3 marks)

Discussion:

This question is classified as moderately difficult for the envisaged Grade 12 candidate because:

- It tests CPI calculation from given data which is moderately difficult for the envisaged Grade 12 candidate (content).
- The task entails completing the opening statement by identifying and selecting the correct percentage from the four options provided. Candidates need only write one letter. However, the task is moderately difficult, because unlike the easy examples 2 and 3 in Table 7, to establish the correct answer, candidates have to perform a calculation using the information provided in the stem of the question to get the answer. They

- also have to identify the correct 'formula' to use for performing the calculation (task).
- The acronym CPI and the term 'rate of inflation' should be familiar to all Grade 12 candidates. However, the question stem presents data/information which has to be 'unpacked' for appropriate use in the calculation. Four optional answers are presented. The three incorrect options are answers that a candidate but could arrive at if they simply applied addition or subtraction and not a formula. Therefore, the distractors work to distract (stimulus).
- A candidate's answer will comprise one letter and there is only one possible correct answer so writing the response and marking it, is easy. However, 3 marks are allocated for writing one answer which means that if candidates give the wrong answer they will lose all 3 marks for just one incorrect answer (expected response).

The question is moderately difficult in relation to 3 possible sources of difficulty outlined in the framework.

Memorandum/Marking guidelines

C: 6.1%

Example 2:

Question 4.6, 2010, DBE (6 marks)

Explain the difference between economic growth and economic development.

Discussion:

- This question is clear and easy to understand and the terms 'economic growth' and 'economic development' should both be familiar to Grade 12 candidates (stimulus).
- To correctly answer it, candidates must have a sound understanding of differences between two intricately related and economic concepts that are often erroneously used synonymously, namely economic growth and economic development (content).
- The task is to explain the difference between the two economic concepts.
 Candidates have to show their understanding by unpacking the features
 that distinguish one concept from the other. They have to use their own
 words to write a few sentences (task).
- Four marks are allocated for providing the explanation. As this requirement
 is not made explicit in the question, candidates may not realise that they
 need to provide at least 2 differences and consequently may not provide
 sufficient information to attain full marks (expected response).

Thus, the question is moderately difficult in relation to task difficulty.

Memorandum/Marking guidelines

Economic growth refers growth of the real GDP, whereas economic development refers to a basket of indicators that e.g. GDP per capita that signal whether an economy is improving or not. While economic growth implies an increase in the capacity of the economy to produce more goods and services and requires economic policies that will advance the economy, economic development concerns an increase in the standard of living or an increase in the capacity of the population to produce and consume more goods and service and might require policies that empower people. (6)

Example 3:

Question 2.5, 2012, DBE (8 marks)

Explain how exogenous factors cause business cycles.

(8 marks)

Discussion:

- The question itself is easy to read but contains two specialized terms ('exogenous factors' and 'business cycles') that require technical comprehension (stimulus).
- To answer the question, candidates need to understand two relatively complex constructs, namely, 'exogenous factors' and 'business cycles' and their relationship to one another (content). The explanation of these constructs requires an understanding of sub-concepts which makes these constructs moderately difficult.
- The task is to explain how variables (exogenous factors in this instance), relate to or have a bearing on macro-economic movements, namely business cycles. Candidates have to show their understanding of the relationship by explaining how they impact on and influence each other. They have to construct a paragraph to explain this relationship (task).
- 8 marks are allocated for this question, however the allocation of marks is not explicit candidates have to deduce on their own what would constitute a full answer (expected response).

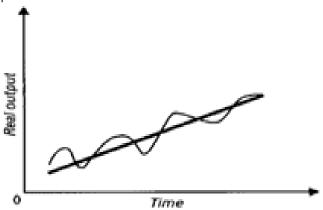
Thus, the question is moderately difficult in relation to content and expected response.

Memorandum/Marking guidelines

- The monetarist school of thought was started in 1960 by Professor Milton Friedman,
 - The classical economists believed that the markets were inherently (naturally) stable,
- Also called the sunspot theory,
 - They presented exogenous explanations (conditions that originate outside the market system) for periodic recessions and revivals,
 - They saw these fluctuations in economic activity as temporary due to external factors,
 - These fluctuations can also occur because of ineffective government policy,
- Supporters say that government should leave the market forces to their own devices,
 - This results in fluctuations in the rate of increase in the money

supply, which causes changes in the rate of increase in prices, production and employment,

- Other external reasons for business cycles are weather conditions, natural disasters: shocks (severe increases in the price of fuel or war or structural changes (development of electronics changes in fashion taste and preferences of consumers,
- These factors all distort the stability of the markets,
 - If in disequilibrium the market forces kick in to restore equilibrium, or
 - Graph:



• Explanation of the graph related to the question

(Any 4x2) (8)

TABLE 9: EXAMPLES OF QUESTIONS AT DIFFICULTY LEVEL 3 - DIFFICULT

Example 1:

Question 1.14, 2012, IEB (3 marks)

Choose the correct answer from the alternatives provided:

A consumer had an increase in salary from R160 000 to R200 000 per year. In the following year her expenditure on holidays increased from R16 000 to R20 000. Her income elasticity of demand for holidays is ... which means that holidays are a/an ... good.

A 3; inferior

B-1; normal

C 1; normal

D -2,5; inferior (3 marks)

Discussion:

This question is classified as difficult for the envisaged Grade 12 candidate because:

• Answering it requires a sound understanding of three relatively complex concepts namely 'income elasticity', 'normal goods' and 'inferior goods'. Candidates have to know the correct formula for calculating income elasticity of demand (content).

- The task is to complete the two missing parts of the opening statement by selecting one of four optional answers. Candidates need only write one letter for their answer. However, the task is difficult, because unlike the easy examples 2 and 3 in Table 7, to establish the correct option, candidates have to perform a calculation using the information provided in the stem of the question. They have to identify the correct 'formula' to use for making the calculation. The difference between the task in this question and the 'moderately difficult' example 1 on Table 8 is that there are two parts to this question and the second part depends on getting the first part correct (task).
- The opening statement is complicated to' unpack' and contains the specialized phrase 'elasticity of demand 'which requires technical comprehension. Although candidates only have to select one option out of four to answer the question, unlike example 1 in Table 8, there are actually two parts to each option. The distractors used as incorrect options are close which could confuse candidates and also make it difficult for them to guess the correct answer (stimulus).
- There is only one correct answer to the question and candidates only have to write one letter as their answer. So, writing the answer and marking it is straightforward. However, 3 marks are allocated for this single answer, and if candidates give the wrong answer they will lose 3 marks for just one incorrect answer (expected response).

Thus, the question is difficult in relation to all four possible sources of difficulty outlined in the framework.

Memorandum/Marking guidelines

C: 1; normal

Example 2:

Question 4.3, 2012, IEB (6 marks)

Study the following table of information and answer the questions that follow.

Economic and Social indicators

Indicator	Columbia	Indonesia	Mozambique	South Africa	India
Population	44.7mil	245.6mill	22.9mill	49.0mil	1.1bill
Growth rate	4.3	1.1	7	2.8	10.4
GDP	\$435.4bill	\$1.03trill	\$21.81bill	\$524bill	\$4.06trill
Inflation %	2.3	5.1	13	6.1	12
GDP per	\$9 800	\$4 200	\$1 000	\$10 700	\$3 500
capita					
Unemployment (%)	11.8	7.1	21	25	10
Life	74.5	71.33	51.78	49.33	66.8
expectancy					
(y)					
Literacy rate	90.4	90.4	47.8	86.4	61
(5)					
HDI rating	0.785	0.697	0.322	0.658	0.602

Your financial advisor recommends that you invest some of your money in India rather than in any of the other countries in the above table. After analysing the economic and social indicators you decide to take his advice. Discuss why you would recommend investing in India rather than any other country. (6 marks)

Discussion:

This question is classified as difficult for the envisaged Grade 12 candidate because:

- A substantive data set is presented in the source material (table). The envisaged Grade 12 candidate could find it difficult to select relevant and appropriate information from this table (stimulus).
- The question requires that candidates have a sound understanding of the nine indicators presented in the table and the implications when changes occur in each one. Answering the question also requires an understanding of how the indicators relate to one another (content).
- There are several steps involved in answering this question. The first step
 entails understanding and analysing the data set. The second step entails
 performing an evaluative task making a case for why only India appears
 to be the most feasible investment destination and not the other five
 nations. The task thus requires an analytic comparative argument that
 synthesises the arguments in favour of investing in India. Candidates also
 have to write an extended response with a well-structured argument (task).
- Candidates could experience difficulty in deciding how much and what they need to write with regard to each reason in order to get to a full answer (expected response).

Thus, the question is difficult in relation to all four possible sources of difficulty outlined in the framework.

Memorandum/Marking guidelines

Large population which means a high demand.

High economic growth rate compared to other countries.

Unemployment relatively low.

(6)

Example 3:

Question 4.4, 2012, IEB (20 marks)

'Economists generally agree that the level of economic growth in South Africa is too low. Government policies must be used carefully as a sharp increase in spending could lead to inflation.'

With reference to the above statement, use a graph and an explanation to evaluate the supply side approach to improve economic growth. (8 marks)

Discussion:

 The opening sentences (stem) present an argument which is complex and might be difficult for the envisaged Grade 12 candidate to interpret. Candidates have to recognize that there are two requirements for answering the question. A number specialized terms are used ('economic

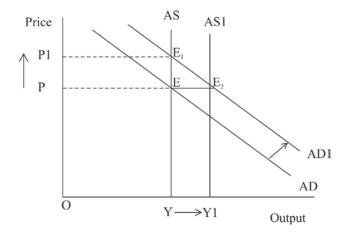
- growth'; 'government policy'; 'spending'; 'inflation' and 'supply side approach') which require technical comprehension (stimulus).
- The task is to create a visual representation (graph) to demonstrate how a specified approach to economic growth is likely to work. This visual must be accompanied by an evaluative explanation. Completing the task requires that candidates first read, interpret and understand the complex argument provided in the stimulus material. They then have to create an abstract graphic representation and write discursively (analytically and argumentatively) (task).
- To answer the question, candidates need to understand how different relatively complex economics concepts/variables relate to one another (economic growth, government policy, spending, inflation, supply side approach) (content).
- Candidates could experience difficulty in deciding how much and what they need to do or write with regard to each aspect and may not provide sufficient detail with respect to each component (expected response).

Thus, the question is difficult in relation to 2 possible sources of difficulty outlined in the framework (task and expected response).

Memorandum/Marking guidelines

Supply in the short term is fairly fixed because for the economy to produce more goods and services, workers need to be trained, new machines need to be bought, better roads need to be provided, etc. Therefore, the aggregate supply curve (AS) is vertical at Y.

If AD is increased from AD to AD1 prices will rise if there is no increase in output. Inflation without growth occurs. The supply side approach suggests that AS1 is established to the right of AS so that if AD increases, output can be increased without a rise in the general level of prices, i.e. inflation. (max 6)



Price/Output and AS and AD. Shift to AD1. Increase in price to P1. Shift to AS1. (max 6)

TABLE 10: EXAMPLES OF QUESTIONS AT DIFFICULTY LEVEL 4 – VERY DIFFICULT

Note:

During the development of the exemplar book some subject specialist argued that there is a faint line between a difficult and a very difficult question. It was also evident that in some subjects question papers did not have questions that could be categorised as very difficult. In order to cater for this category, subject specialists were requested to adapt existing questions and make them very difficult or create their own examples of very difficult question. However, it was noted that in some instances attempts to create very difficult questions introduced invalid sources of difficulty which in turn rendered the questions invalid. Hence Umalusi acknowledges that the very difficult category may be problematic and therefore requires especially careful scrutiny.

Example 1:

Discuss import substitution and export promotion as part of South Africa's international trade policy and evaluate the effectiveness of these two strategies in the last decade. What innovative strategies would you recommend for the next 5 years. (50 marks)

This question is classified as very difficult for the envisaged Grade 12 candidate because:

- To answer the question, candidates need an in-depth understanding of advanced content, namely, import substitution and export promotion. To make evidence-led judgements, they also need contemporary knowledge of South Africa's international trade policy (content).
- The question itself offers a complex scenario that might prove with multiple layers of information which makes it very difficult for the envisaged Grade 12 to interpret and understand what is required. Complex phenomena (constructs) have to be evaluated in a specific context for a prescribed period. The specialized terms 'import substitution' and 'exit promotion' are complex and require technical comprehension. Because of the way the question is structured, candidates may not realise that there are two parts to the question. No resources/data on South Africa's international trade policy are provided in the stimulus material to aid candidates in answering the second part of question. This absence of 'enabling' source material in the stimulus means that candidates have to rely on remembering this kind of data to use in their argument (stimulus).
- The first task entails analysing import substitution and export promotion as part of South Africa's international trade policy. The second task entails evaluating the application of two trade policies over a stipulated time period. This task involves setting up (synthesizing) the criteria/basis upon on which to make a judgment and providing evidence for the claims made about the effectiveness of policy. Analysis, synthesis and evaluation are cognitively demanding for the envisaged Grade 12. Candidates also have to write extensive extended text to develop a line of argument and present novel ideas to counter the weaknesses they identified. Writing discursively at length is very difficult for the envisaged Grade 12 (task).

50 marks are allocated for an essay response with no indication to candidates
of how much to write in relation to each component of the question.
Candidates could experience difficulty in deciding how much and what they
need to write with regard to the first and the second part of the question
(expected response).

Thus, the question is very difficult in relation to task and expected response.

Memorandum/Marking guidelines

- Explanation of 'import substitution'. (6)
- Explanation of SA trade policy on import substitution over the 10-year period.
 (6)
- Analysis of import substitution trends and their impact on the SA economy over a 10-year period. (10)
- Explanation of 'export promotion'. (6)
- Explanation of SA trade policy on export promotion over the 10-year period.
 (6)
- Analysis of export promotion trends and their impact on the SA economy over a 10-year period. (10)
- Synthesis of argument as to the effectiveness of these trade policies and speculation for the future. (12)

Example 2:

Question 2.4, IEB, 2014 (adapted) (30 marks)

Discuss how the South African government can use monetary and fiscal policy to improve economic growth. Also **evaluate** how successful the government has been in achieving its goals of economic growth. On the basis of this evaluation, outline three innovative strategies that the state could employ to achieve economic growth.

(40marks)

- To answer the first part of the question, candidates have to know about and understand complex, advanced concepts and theory, namely, fiscal and monetary policy. To answer the second part and evaluate 'successfulness', candidates have to be knowledgeable about South Africa's goals for economic growth and the country's current economic data (content).
- The first part of the task entails offering an explanation/analysis of monetary and fiscal policy and its application to an aggregate process, namely, economic growth. The second part of the task entails setting up (synthesizing) the criteria/basis upon which to make an evaluative judgment of evidence of the success or lack thereof of South Africa's economic policy in term of its stated goals. Analysis, synthesis and evaluation are cognitively demanding for the envisaged Grade 12 candidate. Candidates also have to draw on their own internal resources (i.e. their own knowledge) of South Africa's goals for economic growth and current economic data to be able to effectively evaluate how successful the government has been in achieving its various goals. Candidates have to then advance new ideas for economic growth on the basis of their earlier evaluation. They have to write discursively which is also very difficult for the envisaged Grade 12 learner (task).
- The envisaged Grade 12 candidate will find it difficult to work out what is expected from this question because of the way it is structured. They have to recognise that there are two parts to the question. The phrase 'monetary and

fiscal monetary policy' requires technical comprehension. No resources on current economic data in South Africa are provided in the stimulus material to aid candidates in answering the second part of question. This absence of 'enabling' source material in the stimulus means that candidates have to rely on remembering recent economic data to use in their argument (stimulus).

 20 marks are allocated for writing an essay response with no indication to candidates of how much to write in relation to each component of the question. According to the memo, 6 marks each are allocated to monetary and fiscal policy and 8 marks for the evaluation discussion. Candidates could experience difficulty in deciding how much and what they need to write with regard to the first and the second part of the question (expected response).

Thus, the question is very difficult in relation to all four possible sources of difficulty outlined in the framework.

Memorandum/Marking guidelines

Expansionary Monetary policy (max 6)

Decrease interest rates which will mean more money borrowed, therefore higher demand and more spending. Increase money supply.

Expansionary fiscal policy (max 6)

Decrease taxes consumers have more disposable income therefore higher demand and more spending. Increase government spending.

Evaluation on the basis of contemporary economic data (max 10)

Recommendations on the basis of earlier evaluation (8)

Example 3:

Inflation is a phenomenon that many countries in the world have to deal with.

- Examine in detail the causes of cost-push and demand-pull inflation in South Africa. (20)
- Evaluate the extent to which South Africa's inflation-targeting policy has been beneficial to the economy? (12)
- Suggest a viable alternative to inflation targeting as a policy (8)

(14) **[40]**

Discussion:

- To answer the question, candidates need to know about and understand the
 workings of two complex phenomena, namely cost-push and demand-pull
 inflation. They also need contemporary economic knowledge of the South
 African context (contemporary content that may not be available in textbooks)
 in relation to these complex phenomena (content).
- In the first part of this question, candidates have to provide an extended explanation/analysis of the workings of two complex phenomena, namely cost-push and demand-pull inflation in a specific country context. This task requires the harnessing (synthesizing) of contemporary economic knowledge of the country context in relation to these complex phenomena. The second part of the question requires an evaluation of a very specific policy application. This task

necessarily requires developing/drawing on (synthesizing) a set of criteria in order to advance an evaluative comment. The third part of the question requires the advancement of an innovative idea/s as alternatives to the current policy. Candidates have to provide an extended piece of written analysis and argument (task).

- The question starts with an opening statement which does not provide any
 resources in the stimulus material to aid candidates in answering the question.
 This absence of 'enabling' source material in the stimulus means that candidates
 have to rely on remembering recent economic data that they can use in their
 argument (stimulus).
- It is very difficult for the envisaged learner to achieve full marks for this question. 26 marks are allocated for the first part of this essay question with no indication to candidates of how many causes and benefits they need to identify and discuss. 14 marks are allocated for the second part of the question with no clear indication how much evidence they need to provide. According to the memo, 7 points at 2 marks a point are required. This information is not explicit for candidates (expected response).

Thus, the question is very difficult in relation to task and expected response difficulty.

Memorandum/Marking guidelines

- Detailed explanation of cost push inflation. (5)
- Discussion of the causes of cost push inflation in SA. (6)
- Detailed explanation of demand pull inflation as it applies in SA. (5)
- Discussion of the causes of demand pull inflation in SA. (6)
- Explanation of inflation targeting. (4)
- Evaluative assessment of inflation targeting policy as applied in SA. (8)
- Innovation. (6)

9. CONCLUDING REMARKS

This exemplar book is intended to be used as a training tool to ensure that all role players in the Economics Examination are working from a common set of principles, concepts, tools and frameworks for assessing cognitive challenge when examinations are set, moderated and evaluated. We hope that the discussion provided and the examples of questions shown by level and type of cognitive demand and later by level of difficulty assist users of the exemplar book to achieve this goal.

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