Exemplar Book on Effective Questioning

Design

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 Design 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	Qualifications, Curriculum and Certification
SIR	Statistical Information and Research

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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 Design 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 Design 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) Design 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 Design 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 Design 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 Design 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 Design evaluators from previous DBE and the IEB Design 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 Design 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 Design 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 DESIGN 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 Design CAPS document states that Grade 12 NSC Design examination papers should examine three levels of cognitive demand (Table 1).

TABLE 1: Levels and types of Cognitive Demand for Design according to the CAPS document

Level of cognitive demand	Type of cognitive demand	Explanation of categorisation Questions which require students to:
Lower LEVEL 1	KNOWLEDGE AND COMPREHENSION	remember, recall, tell, list, write, find, name, locate explain, describe, discuss, distinguish, outline
Middle LEVEL 2	APPLICATION	organise, implement, infer, solve, show, illustrate, classify, construct, examine
Higher LEVEL 3	ANALYSIS	analyse, compare, interpret, investigate, categorise, explain
	EVALUATION	judge, decide, justify, debate, reflect, prioritise,
	SYNTHESIS	argue create, invent, plan, predict, design, propose, formulate

SOURCE: DBE EXAMINATION GUIDELINES GRADE 12, 2014 (P15)

To facilitate reading of this section, each of the above cognitive demand levels in the Design Taxonomy is explained, and the explanation is followed by at least **three** examples of questions from previous Design 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 Design experts could find. In 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

Table 2: Examples of questions at level 1: KNOWLEDGE, COMPREHENSION

Low order: Knowledge, Comprehension: Level 1
Such questions require candidates to recognise or retrieve information from memory. Answering these types of questions involves cognitive processes such as: Describing, finding, identifying, listing, locating, naming, recognising and retrieving
Example 1:
Question 4.2.1 DBE NSC DESIGN THEORY (P1) NOVEMBER 2012 DESIGN HISTORY
 FIGURE F: Swan Brooch, Art Nouveau, 1890-1905   FIGURE G: Brooch, Bauhaus, circa 1919-1933 4.2.1 Name ONE designer from EACH style/movement represented by FIGURE F and FIGURE G that you think was the most important contributor to the movement.   (2)
Discussion: Recall: Candidates should be able to name one designer from each style/movement represented in FIGURE F and FIGURE G. Comprehension: The selection of two designers whom they regard as the most important contributors indicates that candidates have not randomly just recalled a couple of names. No analysis, interpretation or justification is required.
Memorandum/Marking guidelines 4.2.1 (Allocate 2 marks) Allocate 1 mark per designer from the TWO movements.

| Art **Nouveau**: Alphonse Mucha/ René Lalique/ Victor Horta/ Louis c. Tiffany, Gaudi/ Aubrey Beardsley √ |
| **Bauhaus**: Marianne Brandt/ Walter Gropius/ Joseph Albers/ Mies van der Rohe √ |

Example 2:

Question 1: DBE NSC DESIGN THEORY (P1) NOVEMBER 2012 DESIGN LITERACY 'UNSEEN' examples

FIGURE A: *Let's Work Together*, a self-help embroidery project by Johanna Sebaya (Mapula, South Africa), 1998.

1.1.1 Identify TWO African influences shown in FIGURE A (2)

1.1.2 Refer to FIGURE A and identify the theme in the design. Refer to any ONE symbol or icon used to highlight the issue or message. (2)

Discussion:

1.1.1
Recognise: Stylistically, the African aesthetic of the design in FIGURE A is instantly recognisable.
Recall: Candidates therefore should be able to identify two examples of specifically African influences. No explanation, analysis or interpretation is required.

1.1.2
Recognise: The first part of this question requires candidates to name correctly the theme of the design shown in FIGURE A.

Name: In the second part of this question, candidates must choose one thematic symbol or icon that is used to highlight the issue/message conveyed in FIGURE A. No explanation, analysis or interpretation is required.

1.1 **[10 marks]**

1.1.1 (Allocate 2 marks)
The African 'rondavel' hut or architecture. √ The flat, simple shapes. √ The bold and bright colours. √ The bold outlines √ and the decorative/craft (embroidery) nature. √ AmaNdebele shapes / patterns and colours. √ Diamond shapes. √ Townships represented / roaming chickens. √
(Allocate 2 marks)

1.1.2 The theme deals with working together to fight the Aids epidemic. √
The red ribbon Aids symbol is featured as well as the graves representing those who have died of Aids, √ the Hospice for caring for the Aids victims. √ There is also a hospitalised or bed-ridden Aids patient. √ The colour red is used throughout the design to emphasise the pandemic and links it to the red Aids ribbon. √ White dove = hope and peace. √ Cross = Christianity / religious aspect. √
Credit must be given to any valid and reasonable answer.

Example 3:

Question 2: IEB NSC DESIGN THEORY (P 1) NOVEMBER 2013 DESIGN COMMUNICATION

[Unilever Rebranding 2009 Wolff Olins]   [BP Rebranding 2008 Landor Associates}

Refer to the images above and answer the following questions.

2.1   What is a brand?   (2)
2.2   Identify and briefly describe TWO changes to each of the Unilever and BP logos, from the earlier to the current version. Use appropriate visual language and relevant terminology in your answer.   (6)
2.3   Suggest and substantiate TWO reasons why each of these changes/rebrands was done.   (4)
2.4   Briefly explain what the term styling means?   (1)

Discussion:

2.1
Recall: Candidates should be able to remember what the term 'brand' means in the context of design and provide a relevant definition.

2.2
Recognise: Candidates should be able to identify and describe with accuracy TWO changes that have been made to each logo using appropriate design language and terminology. No evaluation or justification is required.

2.3
Explain: Candidates must give two credible reasons for these changes/rebranding to each logo. Candidates at Grade 12 level are expected to be visually literate enabling them to 'read' any visual text by understanding and explaining (level 1) their meaning.

2.4
Recall: Candidates should know the term 'styling' and be able to explain its use in a design context.

Memorandum/Marking guidelines
QUESTION 2.1 (2 marks)

One mark/substantiated fact to be awarded for correctly explaining that branding is the collective embodiment of a product/company's identity, and can be expressed through logos, jingles, promotional material, vehicles, uniforms, buildings, etc. To explain branding as being synonymous with a logo **is incorrect**.

Use the following information as a guideline:

Brands were originally developed as labels of ownership. Branding involves attributing a 'personality' to or associating an 'image' with a product or service, whereby the personality or image is 'branded' into the consciousness of consumers.

A brand is a collective embodiment of a product's identity (or DNA). A brand is a symbolic embodiment of all the information connected to a company, product or service. A brand serves to create associations and expectations among products made by a producer. A brand often includes an explicit logo, fonts, colour schemes, symbols, sound which may be developed to represent implicit values, ideas, and even personality.

QUESTION 2.2 (6 marks)
In this answer candidates are expected to **identify (1 mark) and describe (1 mark) TWO** changes made to each of the two logos using appropriate visual language and terminology **(1 mark)**. 3 marks maximum to be awarded for each logo discussion.

Use the following information as marking guidelines:

2.2

Unilever Logo
- Change in shape from geometric shapes to organic.
- Hard edging replaced by biomorphic shapes suggesting nature.
- Formal serif typeface replaced by script font.
- Lighter degraded blue colour replaced by more saturated blue colour.

BP Logo
- Shield insignia type crest replaced by stylised sunflower.
- Upper case serif font in logo replaced by lower case sans serif typeface.
- Flat colour replaced by graded tones of green in the petal shapes.

- Static shield replaced with radial arrangement of petals, gives idea of movement and progression.

QUESTION 2.3 (4 marks)
Unilever
The decorative new logo will appeal to a more feminine market, the actual buyer of the product.
The script typeface makes a personal communication rather than a corporate one.
Biomorphic stylised shapes in a rhythmic composition suggests being in harmony with the environment, appealing to current trends.
The shapes are suggestive of plants, animals, sun, water, etc. that imply that the product is not harmful to the environment, appeals to an environmentally conscious consumer.
Specific symbolic icons a lock of hair symbolising the shampoo brands to a spoon, an ice cream, a jar, a tea leaf, a hand and much more, the little icons all have a meaning.

BP
Sunflower motif suggests natural forms/energy reflecting current trends to clean forms of energy – (Beyond Petroleum slogan is introduced as a by-line on other communication forms).
Lower case font appears humbler, less corporate, makes a personal connection with consumer.

QUESTION 2.4 (1 mark)
The answer must be able to correctly explain styling, either using **definitive terminology** or by referring to a **substantiating example**. One mark to be awarded.

Use the following explanations as a guideline:

Styling refers to combination of distinctive features of literary or artistic expression, execution, or performance characterising a particular person, group, school, or era.

OR

Styling involves the adoption of a particular visual appearance to conform to a particular trend/movement or fashion.

OR

Styling uses stylised artistic forms and conventions to create a specific desired effect, for instance Victorian filigree styling is often used in wedding invitations.

OR

Current fashion trends are using 50's retro styling to set the scene in photographs with cars like 50's Buicks, the interiors of Diners with milkshake bars and neon lights.

Table 3: Examples of questions at level 2: Application

Such questions require candidates to see the relationships between ideas, and the way in which concepts are organised or structured. The ideas and concepts may be contained in explanations, models or theories which they have learnt, or they may be in new material which is presented to them. These types of question require re-organising information, data, ideas, facts or details that are explicitly stated or observable in material provided or, which have been learnt, in a different way or form from what was presented. Answering these types of questions involve cognitive processes such as: Classifying, comparing, exemplifying, explaining, inferring, interpreting, paraphrasing and summarising.

Example 1:

Question 5.1.1
DBE NSC DESIGN THEORY (P1) EXEMPLAR, 2014 (CAPS) DESIGN IN A SOCIO CULTURAL/ENVIRONMENTAL AND SUSTAINABLE CONTEXT Q 5.1.1

FIGURE A: ODOM stove prototype by the MOBY Institutional and Prakti Design Lab for burning smokeless, energy-efficient charcoal briquettes, using 70% less wood than traditional stoves (India), 2010

5.1.1 The above design (FIGURE A) is a good example of social design. Provide a definition for socially responsible design. Explain why the design shown in FIGURE A falls into this category, specifying how it benefits certain communities.   (6)
You may NOT refer to any designer(s) that you have discussed previously or designers referred to in this paper.

Discussion:

Examine: To provide a relevant definition for socially responsible design, candidates should be able to apply their knowledge of the Design curriculum which deals with the social and environmental responsibility of designers, and awareness of the need for sustainable design.

Illustrate: Using this definition, they should be able to explain why the ODOM stove shown in FIGURE A is an example of socially responsible design which benefits certain communities.

Any relevant and valid explanations can be accepted. For example, candidates could apply their knowledge more broadly and refer to local social, cultural and environmental needs and issues of sustainability.

Memorandum/Marking guidelines

5.1.1 **(Allocate 6 marks)**

Socially responsible design is design that takes into account that all members of our society are not equally privileged. √ Such designs support those in need in some way, √ e.g. they can target the poverty-stricken or people that are physically less able. √ Socially responsible design can also help to create employment or empowerment. √

This product is aimed at supporting people who are poor and don't have access to electricity. √ It also allows for better hygiene as people have access to boiled water for better sanitation and to eradicate germs. √ There is less smog in the air because it runs on smokeless charcoal briquettes. √ It is safe to be used in densely populated areas as the fire is more contained. √

Credit any reasonable alternatives.

Example 2:

Question 11: IEB NSC DESIGN THEORY (P1) NOVEMBER 2010
DESIGN IN A SOCIAL CONTEXT: (The impact of design on society, including human rights, access and inclusivity)

11.1   In a paragraph format, discuss the concept of Ergonomics in detail as it applies to contemporary design practice.   (10)

11.2   The Guardian nurse alert by XYZ Design Consultancy provides emergency response in callout situations. If the user requires assistance in a remote situation, he/she simply depresses the ergonomically placed GSM side buttons to notify the base station for assistance. Once accepted by the emergency response centre, the central button is then pushed to send a GPS (Global Positioning System) coordinate of the user's location for the oncoming rescue team.

Source: Google Images

Discuss THREE important design features that the designers of this product needed to take into consideration when designing the Guardian Nurse alert. (6)

Discussion:

Q 11.1

Illustrate: Candidates will have studied ergonomics in both theory and practice, and be aware of the value of good design and the negative and costly effects that poor design has on humans and the environment. They will need to apply this knowledge to show that they have a conceptual understanding of ergonomics within the context of contemporary design practice.
Organise: The discussion must be structured in a coherent and logical manner. Credit may be given to valid and relevant examples.

Q 11.2

Classify: Candidates will have to use their knowledge of design theory and practice to select three important design features within the context of the product's overall purpose and economy of design. Their choices could be framed within the importance and value of these features for different types of users. Credit may be given to valid and relevant examples.

Memorandum/Marking guidelines

Question 11.1

In a paragraph format, discuss the concept of Ergonomics in detail as it applies to contemporary design practice. (10)

QUESTION TYPE/ COGNITIVE SKILLS: Comprehension (5 marks), Application (5 marks)

Display knowledge and appreciation of responsible design by taking into consideration human rights issues throughout the process, such as: use of materials that are safe and accessible to all; environmental issues.

Display knowledge and appreciation of aesthetics and functionality throughout the design process

Understand the health and environmental implications related to the use of materials.

Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.

LEVEL: Lower (5 marks) Middle (5 marks)

Human factors, also known as ergonomics, is the study of how humans behave physically and psychologically in relation to particular environments, products, or services.

It is a multidisciplinary field devoted to optimizing human performance and reducing human error. It incorporates the methods and principles of the behavioural and social sciences, engineering, and physiology. It may be described as the applied science which studies people working together in concert with machines. Human factors involve variables that influence individual performance, as well as team or crew performance.

Physical ergonomics deals with the human body's responses to physical and physiological stress.

Ergonomics draws on many disciplines in its study of humans and their environments, including anthropometry, biomechanics, mechanical engineering, industrial engineering, industrial design, kinesiology, physiology and psychology.

MARKING GUIDELINES: Question 11.2

Discuss THREE important design considerations that the designers of this product needed to take into consideration when designing the Guardian Nurse alert.   (6)

QUESTION TYPE / COGNITIVE SKILLS:
Analysis (3 marks), Synthesis (3 marks)

Display knowledge and appreciation of responsible design by taking into consideration, human rights issues throughout the process, such as: use of materials that are safe and accessible to all; environmental issues

Display knowledge and appreciation of aesthetics and functionality throughout the design process.

Make value judgments informed by a clear understanding of design.

Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.

LEVEL: Higher (6 marks)

Comfort – size not too big, convenience of wear
Correct grip
Ease of pressing the button (spring device must get balance right) / size of the button (not too small for ease, but not too big to press accidentally/ surface of the button (not slippery …)
Water-tight device

Example 3:

Question 6.2: DBE NSC DESIGN THEORY (P1) MARCH 2012 DESIGN IN A SOCIO CULTURAL/ENVIRONMENTAL AND SUSTAINABLE CONTEXT Q6.2.1 and Q6.2.2

6.2.1   Study the buildings/structures shown in FIGURE A below and answer the questions that follow:
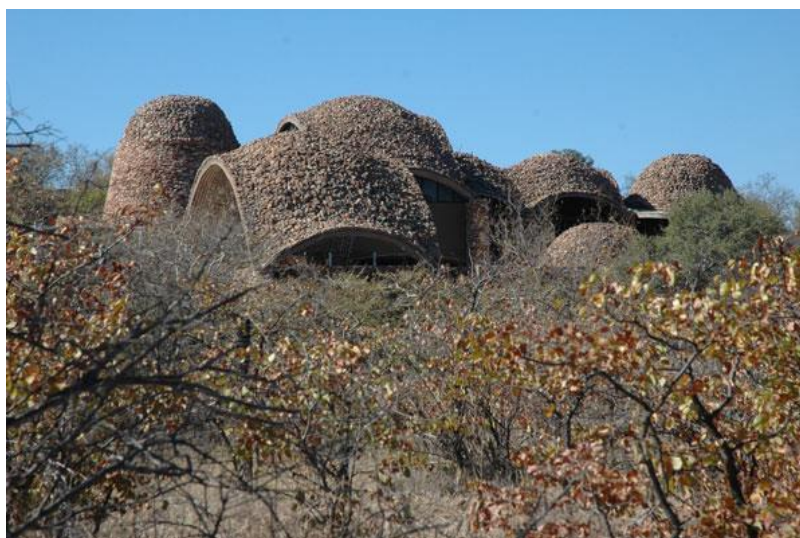

FIGURE A: *The Mapungubwe Interpretation Centre* in Limpopo,
South Africa, designed by Peter Rich Architects, won the World Building of the Year Award at the World Architecture Festival, Barcelona, 2009.

FIGURE A: *The Mapungubwe Interpretation Centre* in Limpopo,
South Africa, designed by Peter Rich Architects, won the World Building of the Year Award at the
World Architecture Festival, Barcelona, 2009.

6.2.1 Why do you think the building shown in FIGURE A can be called a sustainable, 'green' design? (2)

6.2.2 Name and discuss the work of any ONE INTERNATIONAL designer who has focused on eco-friendly issues. (8)

Discussion:

Q6.2.1
Illustrate: Candidates will be expected to apply their knowledge and understanding of sustainability in design and 'green' design with specific reference to the building shown in FIGURE A to explain how contemporary ecologically 'green' methods of construction and sustainable materials have been used to design and construct the Mapungubwe Interpretation Centre, while maintaining the natural integrity of the local environment.

Q6.2.2
Examine: Candidates must be able to apply their knowledge of one relevant international designer and his/her work to be able to discuss how these reflect the designer's interest in promoting sustainability in design and 'green' design issues.

Memorandum/Marking guidelines

6.2.1
- The building relates well to its environment and does not dominate it. It is made up of an informal cluster of vaulted roofs that emerge from the veldt like a group of 'koppies' or hills. √
- Many local, sustainable, organic materials have been used such as stone, clay bricks and wood. √

6.2.2 **(Allocate 8 marks)**

AN INTERNATIONAL DESIGNER WHOSE WORK FOCUSES ON ENVIRONMENTAL ISSUES:
BENJAMIN HUBERT:

Benjamin Hubert was born in the UK in 1984, studied Industrial Design and Technology at Loughborough University, graduating in 2006. His London-based studio was founded soon thereafter and specializes in industrial design focusing on furniture, lighting and products. √ A diverse range of projects is produced including both mass-produced consumer products as well as limited edition/ one-offs. Benjamin Hubert has received international acclaim. He has also received a number of prestigious awards including: Design of the Year (British Design Awards 2010 and EDIDA International Young Designer of the Year 2010. √ Benjamin Hubert Studio products are exhibited and retailed across the world. He has created beautiful pieces from lighting made with cork to beech coat stands. √

FLOAT HANGING LAMP: √
Hubert believes that style can be achieved even if you are using recycled materials. This can be seen in his stylish float lamp. It is made of waste cork from the manufacturers of wine stoppers. √ It was created for Danish design brand Unique Copenhagen. √ Hubert is known for his rounded approach to design, taking into account not only the finished product but the manufacturing process as well. √ As with most modern designers today, along with form and function, sustainability and eco-friendly issues are taken into account whilst designing. √ The lamp forms are very functionalist and simple with an emphasis on clean lines. √ The texture of the cork forms part of the visual appeal of the lamp. √

THE POD √
The Pod is a large chair, which is made from felt made from PET bottles that have been recycled. √The chair feels almost like a cubicle. √ Benjamin Hubert wanted the chair's ergonomics to allow the user to work comfortably whilst feeling relaxed and separate from daily life's noise and activity. √ The shell of the chair is the largest form ever produced using pressed recycled PET felt technology. √ The shell stacks easily making storage and transport simple. √

FOUNDATIONS √
'Foundations' is a shelving and storage system inspired by brutalist architecture. √ It is made of Valchromat, a wood fibre board coloured with organic dyes which have been specifically developed and bonded with resin to ensure that the natural appearance of the fibre remains intact. √The wood is sourced from forest waste and recycled pine. √ Hubert's use of this sustainable material and advanced technical methods minimize environmental impact, an important concern for the designer. √He also uses an environmentally friendly manufacturing process and zero carbon emissions. √

Q6.2 LEVEL	COGNITIVE SKILLS	WEIGHTING	QUESTION	MARKS 10
Lower order	Recall/knowledge Comprehension	30%	6.2.2	3
Middle order	Application	40%	6.2.1 + 6.2.2	4
Higher order	Analysis Synthesis Evaluation	30%	6.2.2	3

Table 4:   Examples of questions at level 3: ANALYSIS, EVALUATION, SYNTHESIS

Higher order: Analysis, Evaluation and Synthesis: Level 3
Analysis require candidates to make a critical judgement, for example, on qualities, accuracy, acceptability, worth, plausibility, or probability of a given argument, or proposed solution, outcome or strategy, using background knowledge of the subject and/or evidence/ information provided by sources to motivate the judgement. Synthesising questions entail integrating ideas and information and relating parts of material, ideas or information to one another and to an overall structure or purpose in a way that is relational. Answering these types of questions involves the following cognitive processes: Evaluating, attributing, checking, deconstructing, integrating, organising, outlining and structuring.

Example 1:

Question 2.1 DBE NSC DESIGN THEORY (P1) MARCH 2013 DESIGN LITERACY: 'UNSEEN' examples
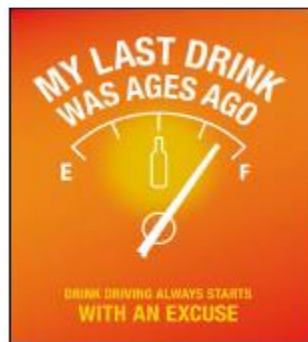
FIGURE A: Alchoholics Anonymous, poster by Pernod Ricard (London), 2010.

FIGURE B: Arrive Alive, poster by unknown designer (South Africa), 2010.

2.1 Discuss the message communicated in FIGURE A and FIGURE B and compare their similarities and differences.   (6)

Discussion:

Analyse: Candidates at Grade 12 level are expected to be visually literate enabling them to 'read' any visual text by analysing, contextualising and interpreting images in order to understand their meaning – or create new meanings. Candidates should recognise that while both posters refer to road safety issues, and the same target audience, the design methods differ. Therefore, candidates must analyse how certain design elements and principles such as colour, line, use of space (2D or 3D), signs, symbols, balance and unity have been used to communicate two different messages within the overall framework of the importance of driving safely.

Comparison: Candidates will be expected to compare the ways in which different graphic methods and techniques have been used to convey each message. They will have to explain how the simple graphic design of FIGURE A is used to convey a visually 'gentle' warning message about driver behaviour and the dangers of drink driving while the graphics used in FIGURE B communicate a visually harsh

warning to drivers about the severe consequences of excessive speed.

Memorandum/Marking guidelines

2.1**(Allocate 6 marks)**
The posters are campaigns that make drivers aware of the dangers they could potentially cause by irresponsibility. √

The similarities:
They are both posters designed for driving with responsibility campaigns. √ Both images represent a gauging instrument of a vehicle as a metaphor for symbolising danger. √ They both incorporate unexpected and startling images to replace usual numbers or letters in the instrument to communicate/enhance the message.

FIGUREB A	FIGURE B
More like an illustration. √	A realistic representation of a vehicle's interior/dash board. √
A fuel gauge. √	A speedometer. √
The image is a simple bottle. √	The images are shocking (from crutches to death). √
Campaigns against drinking alcohol and driving. √	Campaigns against speeding. √

Example 2:

QUESTION 2.1: IEB NSC DESIGN THEORY (P1) NOVEMBER 2010 DESIGN COMMUNICATION

2.1 The poster below makes use of specific techniques to enhance its meaning. Identify TWO different visual techniques and briefly explain what effect they have on the overall meaning of the work. (4)
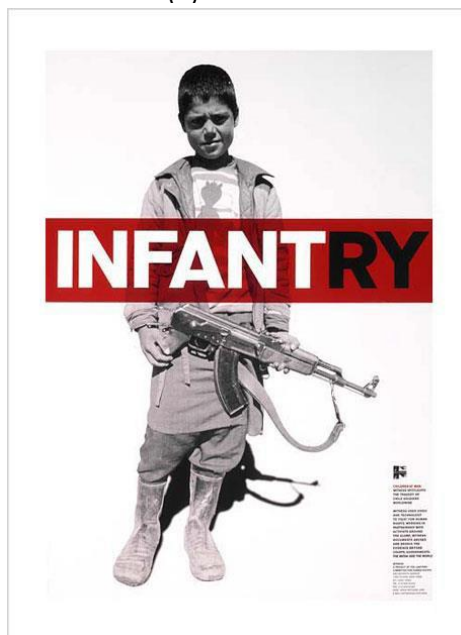
Source: Google Images

Discussion:

Interpret: Candidates will have to analyse the different graphic techniques that have been used in this stark poster to convey a human rights issue - the recruitment of child soldiers. They need to consider the effectiveness of visual impact i.e. use of symbolic and contrasting colours, the balance of the design, the juxtaposition of a stark black and white photographic image of a young child holding an assault weapon and the dramatic shadow and overlaid text. They should also be able to explain the choice of font and font size, and explore the visual play between the word **INFANT<mark>RY</mark>** and the image.

Evaluation: From the process of analysis, candidates will be able to decide which TWO techniques they think best enhance the meaning of the message.

Memorandum/Marking guidelines

MARKING GUIDELINES: Question 2.1

QUESTION TYPE / COGNITIVE SKILLS: Analysis (4 marks)

Display knowledge and appreciation of responsible design by taking into consideration human rights issues throughout the process, such as: local culture, health and safety with specific reference to HIV, access and inclusivity; use of materials that are safe and accessible to all; environmental issues; gender and bias; use of materials and processes that are free from stereotyping; ethics and intellectual property.

Make value judgments informed by a clear understanding of design.

Discuss, explain and demonstrate the context and purpose of the products, images, signs and symbols used in design to convey overt and hidden messages that reinforce or challenge stereotypes, biases and prejudices, past and present. Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LEVEL: Higher

Wording infant – white strong tonal contrast vs recessive ry - against child soldiers
Split colours – symbolic red block = blood/white = innocence.
Strong vertical/horizontal grid.

Example 3:

> "*Less is more*" Ludwig Mies van der Rohe
>
> "*Less is a bore*" Robert Charles Ventur

FIGURE A　　　　FIGURE B

Which quote above applies best to FIGURE A and which one applies best to FIGURE B? Give reasons for your answer by comparing the above buildings and the movements they represent. (10)

Discussion:

Analyse: Candidates firstly need to analyse and contextualise the quotes which accompany FIGURE A and FIGURE B in relation to the specific requirements of this question. Mies van der Rohe's famous statement that "*Less is more*" was, some 30 years later, countered by Robert Venturi's comment that "*Less is a bore*". These two quotes concisely reflect the different philosophies of arguably two of the most influential architects of the twentieth century.

Categorise: Candidates should be able to identify the two architectural movements shown in FIGURE A and FIGURE B by analysing and comparing the stylistic characteristics of each building.

Reflect: Having completed the comparison, candidates must decide which one best represents Mies van der Rohe's "*Less is more*" Modernist style and which one best represents Robert Venturi's "*Less is a bore*" Post-Modernist style.

Argue: Possible reasons could be that Modernism, as exemplified by FIGURE A, clearly supports the modernist philosophy of Mies v.d. Rohe's *"Less is more"* while the typical Post-Modernist building shown in FIGURE B is a clear example of Robert Venturi's dictum of *"Less is a bore"*.

Justify: Modernism was concerned with a minimalistic, machine like simplicity and efficiency while Post-Modernism plays with architectural puns, visual complexity and to some critics, overkill.

Memorandum/Marking guidelines

4.2 (Allocate 10 marks in total)

The candidate must answer in paragraph form clearly comparing one aspect at a time.

Credit may not be given to two separate essays or to a comparison in table form. While the Modernists believed in purity of form, leaving their building unadorned and block-like, the Post-modernists rejected the machine-like monotony of Modernism. √ Post-modernists borrowed freely and eclectically from a variety of traditions to create an architecture where decoration, sculpture and traditional materials become integrated with the contemporary construction methods. √

The Post-modernist often combined traditional elements such as classical pilasters with contemporary construction methods which reflect their belief that 'Less is a bore'. √ Modernist buildings reject all traditional building styles and strive to create a minimalistic block-like appearance with a grid-pattern evident in the window arrangement. √ This follows the idea of 'Less is more' stated by Mies van der Rohe. √ Modernism placed emphasis on space rather than volume, √ whereas Post-modernism combines solidity with space. √ In high-rise buildings they rejected non-essential decoration and buildings were either painted in neutral colours or left unpainted, √ whereas the Post-modernist placed emphasis on colour, often using it to emphasise structural elements. √ Modernist buildings have no specific façade, remaining uniform and simple around the entire perimeter of the building, whereas the Post-modern buildings used a variety of materials and structures to create a very complex façade. √ Post-modernism therefore makes complexity more important than simplicity. √ Post-modernism often used colour to make a building appear lower unlike the Modernist architects who elevated their buildings on pilotis (pillars). √ Modernist buildings make use of a skeleton structure sheathed in a glass skin (glass curtain). √ All services in the buildings are contained within a central core. √ As a reaction to the unadorned clean look of Modernism, Post-modern buildings used more concrete often exposing the skeleton of the building. √ Modernism used reinforced concrete that allowed for cantilevered floors suspended from the central core. √ The emphasis of complexity over simplicity by Post-modernism is described by Charles Jencks as a kind of double coding by which the architect communicated with the informed and the public. √ Post-modernism is a clear example of the dictum of 'Less is a bore' by Venturi. √

Credit any valid statements.

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 contributes 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 Design 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).

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).

7.3 Question difficulty is determined against the assumed capabilities of the ideal 'envisaged' Grade 12 Design 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 Design 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 is 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 Design 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 ideal 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 form 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 multi-step 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.

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.

8. EXAMPLES OF QUESTIONS AT DIFFERENT LEVELS OF DIFFICULTY

This section provides at least **three** examples of questions from previous Design 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 Design 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:
<u>Question 5.1.1:</u> DBE NSC DESIGN THEORY (P1) NOVEMBER 2013 DESIGN IN A SOCIAL/ENVIRONMENTAL   FIGURE A: **Good Parent Campaign** (DDB, Poland), 2009. 5.1.1 Discuss how the designer has highlighted the idea of child abuse in the poster (Figure A).   (2 marks)
<u>**Discussion:**</u> This question is rated as easy. • **Content/Concept:** The poster highlights the overt (physical) and hidden (emotional) consequences of child abuse. Grade 12 candidates should be familiar with the role of designers in challenging human rights issues to promote a just and ethical society as part of the curriculum requirements for Design in a social/environmental context. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge. • **Stimulus**: This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question. Grade 12 candidates should be visually literate and able to analyse the poster shown in FIGURE A, place it in context and interpret the content without difficulty. The title provides assistance. • **Task:** Candidates are confined to an analysis of the poster to establish how the designer has applied certain design elements and principles to highlight the consequences of child abuse. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer. • **Expected response**: Candidates are free to choose any of the visual stimuli and graphic techniques used by the designer to support their discussion. This is an open-ended question. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.   (2 marks)

Memorandum/Marking guidelines

5.1 SOCIAL ISSUES (INTERNATIONAL)
   2.1.1   (Allocate 2 marks)

The disturbing 'shattered' limbs imagery makes for an uncomfortable feeling. √ The juxtaposition of this 'shattered' child with the unsettlingly sterile household surroundings, √ as well as the graphic photoshopped compositions, √ delivers the emotionally shocking message. √ The small, simple font in a light tone, against the empty wall emphasises the fact that this child is alone in an 'empty' unsupportive world. √ The broken doll has many implications. When parents become senseless and angry with their kids, they are hurting them both emotionally and physically. √ The image is a metaphor for child abuse. √ They get hurt internally and a shattered childhood is the result. √

Credit any other valid statements.

Example 2:

Question 5.1 DBE NSC DESIGN THEORY (P1) MARCH 2012 DESIGN IN A SOCIAL/ENVIRONMENTAL CONTEXT

FIGURE A: Absolute Insanity. Absolute Parody, Jonathan Barnbrook, Bucharest, Romania, 2009.

5.1.1 Briefly discuss how the visual clue(s) in the above poster could change the attitude and values of drunk drivers. (2)

Discussion:

This question is rated as easy.
- **Content/Concept:** The poster highlights the danger and consequences of drink-driving. Grade 12 candidates should be familiar with how designers can draw attention to the negative and often deadly impact of aberrant social behaviour that is too often taken for granted, as part of the curriculum requirements for design in a social/ environmental context. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** Candidates should be visually literate, be able to analyse the poster and interpret both visual and text content in FIGURE A without difficulty. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question. The title provides assistance.
- **Task:** Candidates must recognise the visual parody employed in FIGURE A i.e. be familiar with the concept of 'guerrilla' advertising, in this case, by appropriating the product branded font of **ABSOLUT VODKA** to deliver a warning message about alcohol abuse and driving, i.e. **ABSOLUTE STUPIDITY** in the context of a rainy night time motor vehicle collision. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected response:** Candidates will have to evaluate the effectiveness of a variety of graphic techniques and images to explain how the poster's visual message could change the attitude and values of people who think it is socially acceptable to drink and drive. This is an open-ended question. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.

Memorandum/Marking guidelines

5.1.1 **(Allocate 2 marks)**

Briefly, discuss how chilling parody could create a positive response from drunk drivers and hopefully change their attitude and values.

Absolute Insanity. Absolute Parody …
Jonathan Barnbrook is known for his belief in graphic design to facilitate social change. His graphic designs are deeply thoughtful and always provoking. He uses his graphic design as a social and political tool or weapon – similar to Protest or Resistance Art movements. √

As Barnbrook has illustrated, to drink and drive is an absolute '*Stupidity, Insanity and Tragedy*'. These posters deal directly, truthfully, personally and emotionally with the tragic consequences of drinking and driving, but in his typical satirical and ironic √ way he creates a parody by bringing humour into this. √ The brand Absolute Vodka (that should have been the culprit here) is illustrated here ironically and graphically as the victim of 'drinking and driving', the bottle, (not body), outlined as 'dead', crashed cars (not crushed ice in an ice-bucket) and covered in a body (not bottle) bag. √

An excellent example of Barnbrook's twisted black humour – in the end, all to blame – is the Vodka (and not the consumer)! Sad, but true! √

Example 3:

Question: DBE NSC DESIGN THEORY (P1) EXEMPLAR, CAPS November 2014 DESIGN IN A SOCIO CULTURAL/ENVIRONMENTAL AND SUSTAINABLE CONTEXT

5.1.2 Discuss ONE contemporary South African designer AND ONE contemporary International designer you have studied, whose work addresses socio-cultural issues, in at least 200–250 words (ONE full page).

Use the following as a guideline:
- The name of each designer
- Name and discuss one or more design(s) by each and explain how this/these design (s) address (es) socio-cultural issues/ needs.

You may NOT refer to any designer(s) that you have discussed previously or designers referred to in this question paper. (14)

Discussion:

This question is rated as easy.
- **Content/Concept:** Grade 12 candidates will have studied the role of design in a socio-cultural context and will be familiar with the work of contemporary South African and International designers working within this field. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** Guidelines for structuring the response have been provided. There are no visual examples. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.

- **Task:** Candidates must apply their knowledge and understanding of the role and work of designers in addressing socio-cultural issues/needs in a South African context and internationally. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** Candidates must correctly name two relevant contemporary designers, one local and one international, followed by a discussion of one or more designs by each, accompanied by an explanation of how these designs specifically address socio-cultural issues or needs. The answer is limited to one full page or not exceeding 250 words. This is an open-ended question. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum. (7+7 = 14 marks)

Memorandum/Marking guidelines

5.1.2 **(Allocate 14 marks in total; 7 per designer)**
Name of designer: Johannesburg-based design studio Architecture for a Change (AFAC) – South African contemporary designer.

The Mamelodi Pod. √

AFAC designed the Mamelodi Pod, with the aim of raising local living conditions √ and providing a cost-effective housing solution for the poor in settlement districts. √ South Africa has 2 700 informal settlements placing millions of people in inhumane substandard conditions with no proper sanitation, no water supply, electrical connections or storm water removals. √

The Pod is constructed with composite wall panels, comprising galvanised zinc sheets, a layer of Sisalation (a reflective foil material) and isotherm thermal insulation and internal plywood panels. √ This structure of the Pod equips it with excellent insulation, which helps to keep the inhabitants of the Pod warm, which is unheard of in ordinary corrugated iron shacks. This minimises the number of fire incidents in the informal settlements during the winter months. √

The exterior finish material is mostly galvanized zinc sheeting commendable for its durability in all weather conditions, and slightly raised off the ground to alleviate flooding incidents. √ This is elemental because Mamelodi has a high rainfall during the rainy season which often results in flooding that leaves many people homeless. √

The Pod has an exterior toilet designed like a French drain with no need for a sewer connection. This alleviates the problem of poor sanitation often prevalent in informal settlements, minimising the occurrence of sanitation-related diseases. √ The Pod requires a minimum of three people to erect in less than a day, therefore making it a well- suited structure for emergency housing after floods, fires and other natural disasters. √

Name of designer: Veronika Scott √ – International contemporary designer *Sleeping Bag Coat*

Product designer Veronika Scott addresses the issue of homelessness in the city of Detroit with her *Sleeping Bag Coat* design. √ The problem of the immense number of homelessness is exacerbated by the lack of funding for proper shelters. √ For those

who have no home, this coat is their shelter. √ The *Sleeping Bag Coat* is a coat that keeps homeless people warm. √ While also working as a wearable sleeping bag, √ Tyvek insulating material was used in the design. √ Tyvek is an ideal insulating material that is often used in the construction of houses. √

Scott is also founder of The Empowerment Plan √, employing 13 former and current homeless people. √ Her organisation only hires homeless single parents without a violent crime record. √ Employees are paid well above the minimum wage.

The coats are not only ordered by non-profit organisations for free distribution to the homeless, but are also used by the Red Cross for disaster relief. √

TABLE 8:   Examples of questions at difficulty level 2 – MODERATE

Example 1:
<u>Question: 2.4:</u> IEB NSC DESIGN THEORY (P1) NOVEMBER 2010 DESIGN COMMUNICATION   Disturbance Design has created a symbolic communication in their illustration shown above. What, in your opinion does the graphic image represent? Justify your explanation with clear reference to the image and symbols used.
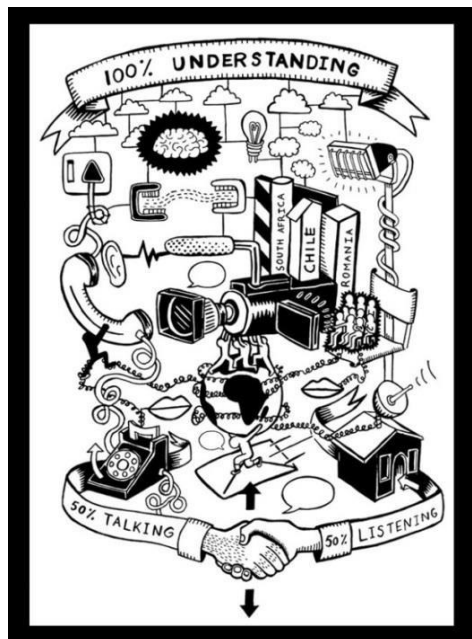
Discussion:

This question is rated as moderately difficult.

- **Content/Concept:** Designers commonly use non-verbal, symbolic imagery to communicate multiple ideas/concepts in graphic form. These can be simple or complex. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.

- **Stimulus:** A 'mind map' style of illustration that candidates are unlikely to have seen before is used to communicate a message. It contains a series of visual clues in the form of symbols and text, all of which are stylised and very simply rendered although its overall effect is somewhat messy. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.
- **Task:** Candidates must analyse the symbols and accompanying text used in the illustration to 'tell the story'. The interpretation of the image is somewhat challenging but there is a wide choice of visual clues for candidates to use. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** The response is open ended but must be justified by appropriate reference to relevant images and/or symbols which, in the candidate's opinion, communicate the message of the illustration. This is an open-ended question. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.

Memorandum/Marking guidelines

QUESTION TYPE / COGNITIVE SKILLS: Analysis (2marks), Synthesis (2 marks)
Display knowledge and appreciation of responsible design by taking into consideration human rights issues throughout the process, such as: local culture, health and safety with specific reference to HIV, access and inclusivity; use of materials that are safe and accessible to all; environmental issues; gender and bias; use of materials and processes that are free from stereotyping; ethics and intellectual property.

Make value judgments informed by a clear understanding of design.

Discuss, explain and demonstrate the context and purpose of the products, images, signs and symbols used in design to convey overt and hidden messages that reinforce or challenge stereotypes, biases and prejudices, past and present.

Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LEVEL: Higher

Represents trade and other agreements between the developing nations of South Africa, Chile and Romania.

Brain = thinking
Lightbulb = idea
Telephone = talking

Example 2:

FIGURE A: **Cyber Bullying Campaign** by PSA (USA), 2013.

> The misuse of personal images through various media platforms shown in the campaign above highlights that 48% of semi-nude and nude photographs sent by 13–17-year-olds through cell phone text messages have ended up in the hands of the wrong person.

5.1.1 What message is conveyed by the posters in FIGURE A above?
In a paragraph (of at least ½ page) explain how the designer makes use of stereotypes, facial expressions, composition and colour to convey the message of the posters. (6)

Discussion:

This question is rated as moderately difficult.
- **Content/Concept:** Grade 12 candidates will be aware of cyber-bullying though social media networks and chat-rooms and should relate to the quote accompanying FIGURE A. The use of stereotyping – and implied bias – in FIGURE A is common in social campaign posters which set out to alert and warn young people of the possible consequences of sending intimate and personal images via social media. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** The two people shown in Figure A represent stereotyped characters who could be unintended recipients of these images.
- **Task:** The written text that accompanies the images provides a context for the interpretation of the images. This needs to be understood in order to respond to the next part of the question because the imagery that accompanies the written text is more complex to interpret. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** Candidates should be able to analyse the graphic techniques used in each poster, interpret and explain how the message is communicated specifically through the composition of each poster i.e. dramatic use of B/W tonal contrasts, stereotyped 'mug' shots framed to look down on the viewer, body language and facial expressions etc. This

should lead them to comment on the use of stereotyping and bias in the posters, possibly by commenting on the implied suggestion that all overweight, balding, leering men are perverts, and that all grandmothers are elderly when most are aged less than fifty! Candidates could also make the point that designers have an ethical responsibility when promoting social messages visually through their choice of images. This is an open-ended question and credit can be given to any valid explanations. No evaluation is required. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.

(6 marks)

Memorandum/Marking guidelines

5.1.1 Allocate 6 marks

The message conveyed in the campaign is that people should put a stop to cyber bullying. √ The campaign makes use of TWO images: a bald, overweight man, stereotypical of a bully/pervert, has a leering expression on his face. √ This communicates the message that cyber bullying can feed sickening tendencies prevalent in our society, √ e.g. paedophilia. √ The other image used is that of a stereotypical grandmother indicating that cyber bullying not only affects the victim whose picture is being circulated. √ It also affects family members of the victim, √ often resulting in shock from younger siblings√, shame and embarrassment for older members of the family and ridicule from the community. √ The pictures are 'grayscale'/black-and-white images, placed against the white typography to draw the attention of the viewer. √ The 'grayscale' and white colour is cold and clinical adding to the seriousness of the message. √ The posters make use of close-up images that are linked to the message, the focal point being the facial expressions which communicate the implications of cyber bullying on the affected parties. √
Credit any other valid statements.

Example 3:

Question 6.1: DBE NSC DESIGN THEORY (P1) MARCH 2013 DESIGN IN A SOCIAL/ENVIRONMENTAL CONTEXT

6.1

FIGURE A: *Quazi Designs*, made from waste magazines (Swaziland), 2009.

6.1.1 Explain why the products in FIGURE A above can be viewed as 'eco-design (2)

Discussion:

This question is moderately difficult.

- **Content/Concept:** The two examples of product design shown in FIGURE A are 'unseen' i.e. typical examples of the contemporary interest shown by product designers in eco-design/green issues but unlikely to have been seen before or studied in class. Therefore, candidates must apply their prior knowledge of work of designers in promoting sustainable 'eco-design'/ 'green issues' products.
- **Stimulus** The two photographs, together with the title information in FIGURE A, provide visual clues for candidates to formulate a valid response to the question. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.
- **Task:** Grade 12 candidates are visually literate. They should immediately recognise that both products are typical examples of 'eco-design' and provide a convincing explanation supported by evidence sourced from the photographs. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** Candidates should be able to show why the specific materials, design methods and techniques used to make the two products in FIGURE A are typical of 'eco design'. They should point out that innovative thinking and techniques in both examples have transformed paper waste, in this case, old magazines into original, desirable, contemporary functional products. Candidates could also refer to the role of eco-design in sustainable job creation. The answer is open ended and valid explanations will be credited. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.   (2 marks)

Memorandum/Marking guidelines

6.1.1 (Allocate 2 marks)

The products are eco-friendly. They use old magazines instead of using newly manufactured material √ that would either deplete the earth's resources or make use of production processes that are harmful to the earth. √ The use of the recycled material minimises landfill issues. √ If the magazines are not used, they may contribute to littering that impact on the environment. √

Credit must be given to any valid and reasonable answer.

TABLE 9:   Examples of questions at difficulty level 3 – DIFFICULT

Example 1:

<u>Question</u> 1.2 DBE NSC DESIGN THEORY (P1) NOVEMBER 2013 DESIGN LITERACY: 'UNSEEN' examples

FIGURE B: M2 Building and showroom for Mazda motors, designed by Kengo Kuma (Tokyo, Japan), 1991.

1.2.1   Define the following concepts with reference to the building in FIGURE B:

- Form follows function
- Deconstruction
- Less is a bore   (6)

Discussion:

This question is rated as difficult because:

- **Content/Concept:** The M2 building shown in FIGURE B is 'unseen' i.e. a typical example of the Post Modern/Deconstruction movement but unlikely to have been seen before or studied in class. Candidates must therefore apply their prior knowledge of modern architectural movements and their characteristics in order to answer this section of the question. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question. The Mazda Motors M2 building shown in FIGURE B was built when Po Mo was a popular architectural style – especially for corporate 'branding'. M2 is shown from two different viewpoints to highlight its design characteristics, give candidates a broader 'look and feel' of the building and its visual impact. The three bulleted concepts were 'coined' by architects/ critics to define the architectural movements they represent. Candidates should recognise them.
- **Task:** Candidates are asked to provide definitions for these concepts by referring to relevant architectural characteristics used in the M2 building. Candidates will find this question challenging unless they are able to use appropriate language and design terminology and have a high level of literacy to give a well-constructed answer. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** The inference of this question is that these concepts give

the M2 building its unique corporate character. Responses will be varied but all should indicate that candidates understand the three listed concepts by identifying relevant architectural features in the design of the M2 building to support their definitions. For example, possible responses could be:

- o Form follows function: M2 does not reflect the concept of form follows function because it is dominated by seemingly functionless architectural forms such as the central grotesque postmodern Ionic column or the four 'porchless' decorative caryatids, both of which could be regarded as visual puns. Its eclectic style confuses and camouflages the purpose of M2 which is essentially the Mazda HQ in Tokyo together with motor showrooms.

- o Deconstruction: M2 exemplifies deconstruction because it consists of a chaotic collage of deconstructed, superimposed and awkward shapes which house the company's administrative requirements. They provoke shock and uncertainty by challenging traditional ideas about logical and flowing structural organisation, spatial planning, order and regularity - and traditional aesthetics in the architectural environment of Japan.

- o Less is a bore: coined by Robert Venturi – one of the original Po Mo architects - in reaction to what he regarded as the sterility of Modernism, best describes the M2 Building because it is eclectic and 'busy' in its use of various styles and visual puns and therefore falls within the broad definition of Postmodernism. Its unique features were, at the time, so different from the architectural environment of Tokyo and therefore served as a unique form of corporate 'branding' for Mazda.

Two marks maximum per correctly referenced definition.   (6 marks)

Memorandum/Marking guidelines

1.2.1 **(Allocate 6 marks)**

Form follows function:
The concept was coined by Bauhaus architects. Emphasis is placed on the function of the design, a case of 'what you see, you get'! √ If a designer decides to build a school or church the building should be interpreted as such. Decoration is basically an afterthought. √

In the M2 building the designer clearly did not follow in the steps of Bauhaus architects. In the true spirit of Postmodernism, he places emphasis on an overload of elements and eclectic styles. √ The architect has made a radical shift from the term Form Follows Function and creates a building that is dominated by a grotesque postmodern Ionic column that consists of a chaotic *collage* of superimposed awkward shapes. √ The function of the building is not clear as the eclectic style confuses and camouflages the meaning or function. √

- **Deconstruction:**
  The term refers to the use of forms and space bombarded by fragmented, √ sharp, clashing angles, skewed shapes and incomplete forms. √ The Deconstruction (movement/style) is strongly influenced by art movements such as Cubism, Futurism and Constructivism. √ The M2 building has clearly been shaped by the Deconstruction movement/style in its use of fragmentation. √ Popular styles deconstructed for reinvention. √
- **Less is a bore:**
  Robert Venturi coined the term during Postmodernism. The term refers to a design that makes use of various styles. √ The term also refers to a reaction to the emphasis on Minimalism, uniformity and rigid adherence to styles of movements such as De Stijl, Bauhaus and the International Style. √ Many describe the M2 building as Postmodernist, Neo-Historical, and Neo-Eclectic architecture which strengthens the idea of 'Less is a Bore'. √ The M2 building can also be described as Pluralistic and Hybrid. √ The above should refer to the building.

Example 2:

Question 5.2.1: DBE NSC DESIGN THEORY (P1) MARCH 2013 DESIGN IN A SOCIAL/ENVIRONMENTAL CONTEXT

FIGURE B: End Conscription Campaign, unknown designer, poster during apartheid, (South Africa), 1980s.

5.2.1   Discuss TWO symbols used in FIGURE B explaining how they support the social message of the poster.   (4)

Discussion:

This question is regarded as difficult.

- **Content/Concept:** Candidates from the post-apartheid 'born free' generation of South Africans do not necessarily have a good grasp of South African history. However, they will be familiar with the role of designers, past and present, as social critics.
- **Stimulus:** Anti-apartheid posters communicated powerful visual condemnations about human rights violations in the apartheid state of South Africa. The iconic symbols, text and title information contained in this End Conscription Campaign (ECC) poster will enable candidates to understand its anti-apartheid message in the socio-political context of apartheid. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.
- **Task:** All candidates are expected to be visually literate. In this example, they will need to conduct a deeper analysis of the more complex socio-political relationship between the written text within the design and the imagery that is used. They will have to select two symbols and explain how they are used to communicate the social message. Hence, **task difficulty** refers to the

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

- **Expected Response:** They should be able to contextualise and interpret the visual metaphors evident in the use of iconic universal symbols, for example: the dove, sunburst, and broken links in a chain or limbs that morph into strong, newly leafed young trees which reach towards the warmth of the sun's rays. There is a clear reference to the Freedom Charter i.e. the word FEED is placed at the base of an arm which symbolises a young tree with its canopy in the form of a hand holding a seedling / sapling; the word TEACH with the hand clasping an open book; HOUSE with the hand holding a house: EMPLOY on an arm with its hand holding a hammer and a spanner. The broken chain was the branding logo for the ECC. The four-mark allocation does not reflect the level of difficulty. There are many equally effective symbols that could be chosen. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum. (2+2 = 4 marks)

Memorandum/Marking guidelines

Allocate 4 marks)
The dominant sun symbolising new life or beginnings as well as power and energy. √ Hands and arms with leaves 'branching' and reaching upwards towards the sun, √ holding symbols like the book (teaching and education), √ house (housing and shelter), √ tools (labour and employment), √ gun snapped (end of violence), √ fruit (feeding and agriculture). √ There is also a chain with broken links symbolising the breaking or ending of violence. √

Credit must be given to any valid and reasonable answer.

Example 3:

Question 6.1: DBE NCS DESIGN THEORY (P1) EXEMPLAR, CAPS, NOVEMBER 2014

DESIGN IN A SOCIO CULTURAL/ENVIRONMENTAL AND SUSTAINABLE CONTEXT

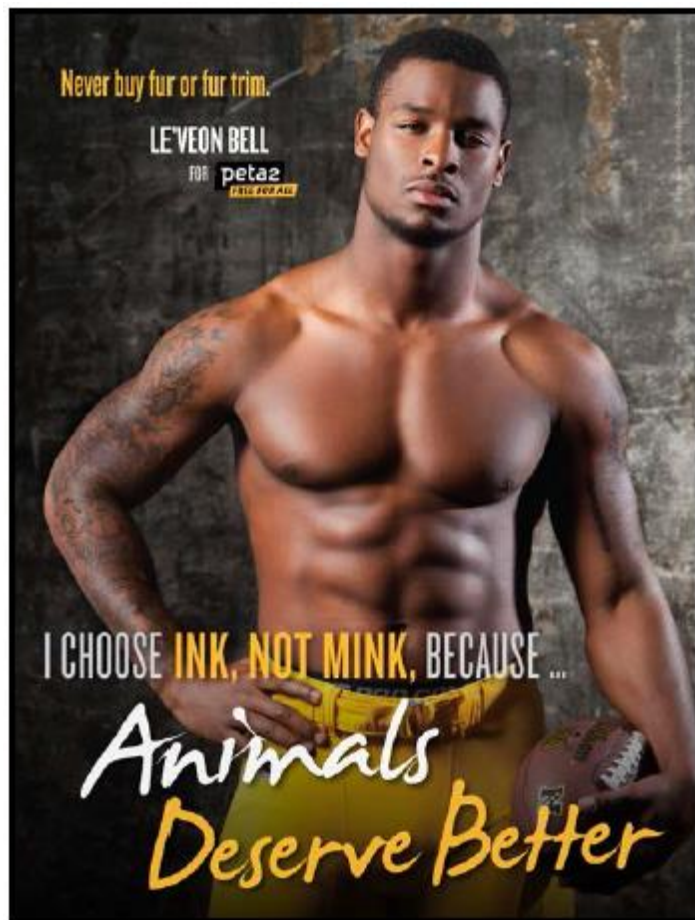FIGURE A: **HSUS poster** (USA), 2013.

FIGURE B: The American National Football League's Le'Veon Bell for the
world's largest animal rights group Peta2's 'Ink, Not Mink' campaign poster (USA), 2013.

6.1 Both posters (FIGURE A and FIGURE B above) are attempting to protect animals from being hunted and slaughtered for fur.

Which of the two posters do you think will be more successful in getting the message across? Motivate your answer. (6)

Discussion:

This question is rated as difficult.

- **Content/Concept:** The designers have used non-verbal, symbolic imagery to communicate an emotive issue about animal cruelty in graphic form. Interpretation of the imagery is required to make meaning of the messages conveyed. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** The violent imagery of the Humane Society (HSUS) poster and the glossy sports magazine style image of Peta2's 'Ink, Not Mink' campaign are used in very different ways to highlight the inhumane hunting and slaughtering seals for their fur. This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.
- **Task:** Candidates will have to analyse, interpret and evaluate the contrasting methods used in each poster to convey the message that the hunting and slaughtering of seals in FIGURE A for their fur, and, in FIGURE B,

that the wearing of fur is unacceptable and also constitutes animal cruelty. They have to decide which of the two posters is the more successful in raising awareness of and stopping the seal fur trade. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.

- **Expected Response:** Candidates should compare the posters to decide which is the more successful. They must justify their conclusion. There are many possible answers. For example, content is approached very differently in each poster. FIGURE A uses horror. The photographic collage of real images 'tells the story' using an emotive visual emphasis on the threatening body language of the seal hunter and the small defenceless seal juxtaposed by a larger close up sad-eyed image of a seal pup. The content in FIGURE B is delivered in a more socially acceptable way using a 'cool' sexy, glossy mood photograph of Le'Veon Bell, a popular sports hero with his muscular torso patterned with fashion statement tattoos. They need to decide whether 'STOP Canada's Massive Seal Hunt' which is ironically impersonal and clear cut is more effective than the low key 'I CHOOSE INK, NOT MINK, BECAUSE Animals Deserve Better'? This is a challenging question. Candidates will have to provide a coherent and reasoned motivation for their choice. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.

(6 marks)

Memorandum/Marking guidelines

6.1 **(Allocate 6 marks)**

If the candidate said that FIGURE A is more successful, the following reasons are possible:

- FIGURE A is more successful as a poster because the writing of the word 'STOP' is very large and bold, immediately attracting the eye. √ The colour use is also very bold (red against blue, contrasting warm and cool colours) and clear. √ The message is immediately understood √ and the threat to the innocent-looking seal is obvious by the threatening body language of the seal hunter. √ The message of FIGURE B 'I choose ink, not mink …' could be confusing to some people and is not as a clear a message as 'STOP Canada's Massive Seal Hunt'. √ FIGURE B also does not actually show seal killing and the poster less effective. √

If the candidate said that FIGURE B is more successful, the following reasons are possible:

- FIGURE B makes use of a popular, well-built, 'cool' sports hero to attract viewers to read the message of the poster √, whereas FIGURE A conveys the message using an expected scene of the actual occurrence. Many viewers would be inspired to support the beliefs of a role model. √ FIGURE B holds the interest of the viewer by using a challenging statement 'I use ink, not mink ...' which requires that the viewer engages with the message √ in order to understand it. The message of FIGURE A is very literal and could be experienced as boring. √ FIGURE B makes use of a variety of font which makes the poster more exciting to read than FIGURE A. The colour use of FIGURE B (bright yellow, brown and white) is more modern, sophisticated and

visually exciting than the basic red, blue and white used in FIGURE A, giving the poster more impact. √ The fact that the model in FIGURE B dominates the format makes it an 'in your face', confronting image and helps to express the message more 'loudly' than the images used in FIGURE A. √

Credit any valid statements.

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:

Question 1.1: DBE NSC DESIGN THEORY (P1) MARCH 2013 DESIGN LITERACY: 'UNSEEN' EXAMPLES
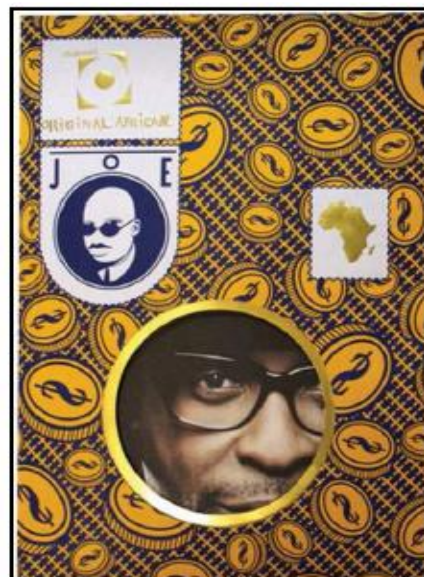

FIGURE A: *Coco*, magazine cover page.

FIGURE B: *Joe*, magazine cover page.

Designed by Peet Pienaar's design studio, The President (Cape Town), 2009.

1.1.1	The two magazine covers in FIGURE A and FIGURE B above are referred to as gender exclusive. Explain the meaning of the words 'gender exclusive' in relation to the images above. (2)
1.1.2	Discuss how the following elements and principles in FIGURE A highlight the 'gender exclusive' feeling:

- Colour
- Shape
- Texture
- Unity and variety   (8)

Discussion:

Both Q1.1.1 and Q1.1.2 are very difficult.

- **Content/Concept:** Candidates have to apply their knowledge of design history and design terminology together with an awareness of contemporary global and pan African socio-political debates concerning the nature and visual depiction of 'identity' and 'power', for example, race, religion, gender, sexual preference, political or religious beliefs and gender bias.

- **Stimulus:** Candidates are provided with two examples of a well-known magazine cover page for discussion and response. What makes this question so challenging is that there are two visual messages at play – the overt gender exclusivity of **Coco** and **Joe** and the more covert critique of the disempowerment of women through the unquestioned and taken for granted gender stereotyping. There is also possibly another stereotype at play manifested in the choice of female and male names, **Coco** and **Joe.** This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question.

- **Task:** Q1.1.1 requires candidates to provide a definition of 'gender exclusive' in relation to the various stereotyped, biased and in this case, ironic, way in which this is visually communicated in FIGURE A and FIGURE B. In Q1.1.2, candidates must discuss how the bulleted design elements and principles highlight the gender exclusive feeling in FIGURE A only. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.

- **Expected Response:** Q1.1.1: while this question may appear to be straightforward, in explaining the meaning of the term 'gender exclusive', candidates must apply their understanding of gender exclusivity as it is constructed through FIGURE A and FIGURE B. They must consider the graphic techniques, composition, the visual 'clues', and considered use of design elements and principles to reinforce the message of gender exclusivity, for example, signs and symbols, patterns, and choice of colours etc. This process will require candidates to make a visual analysis of each cover design, interpret the information and the nonverbal messages that are being communicated, and contextualise and evaluate both to respond fully to the question. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.   (2 marks)

- Q1.1.2: Candidates should continue with the exploration of the theme by analysing the given design elements – namely colour, shape and texture,

and the principles of unity and variety and discussing the ways in which they highlight the feeling of gender exclusivity. This is open ended and relevant responses and insight will be credited. The eight marks allocated to this question reflect its level of complexity and challenge.   (8 marks)

Memorandum/Marking guidelines

1.1.1   (Allocate 2 marks)

The one section *Coco* is exclusively dedicated to females and their preferences. √ The other half or section (Joe) deals exclusively with male related issues and interest. √ The female 'feel' of the design is reinforced by the use of lacy/doily patterning. √ Whereas FIGURE B is more masculine as seen with the coins and graphic patterning. √

1.1.2   (Allocate 8 marks)

- **Colour**:
  In both the Coco and Joe covers runs a gold and navy-blue colour scheme. √ Peet Pienaar commented that the choice for the colours were influenced by what happens on the streets in Africa, where luxury is mixed with poverty. √. The choice for the colour scheme also relates to royalty or wealth in both Western and African societies. √ It is clear that the design team of The President (under guidance of Peet Pienaar) made a deliberate decision about the choice of colours. √ The colour scheme is not gender specific or stereotypical or inclusive (e.g. blue for boys or pink for girls). √ The fact that Africa is printed in gold reinforces the idea that in Africa gold is to be found √ and it further unifies the design of the covers with the idea that all Africans (men and women) should be striving to be economically strong and independent. √

Shape:
FIGURE A: COCO COVER: The specific use of a doily/lacy or scalloped shaped textile in the background strengthens the soft and feminine feel. √ Choosing a lacy/doily with a tartan/crisscross pattern, comments on Africa reflecting an ex-colonial British or Victorian context, e.g. the Victorian lace pattern has become part of contemporary African decorative pattern. √ The repetitive use of circular, square and rectangular forms is a clear influence of African decorative craft patterns and art. √

FIGURE B: JOE COVER: The same Western tartan/lacy pattern used in the *Coco* cover is repeated in the background. √ Numerous American Dollar coins are thrown and suspended on top of the tartan material. √ The inclusion of the Dollar coins echoes a business world dominated by men or more specifically black men. √ The repeated use of the same geometric shapes in both the covers relates to a new society that wants to enforce equality between the sexes and emphasizes a society that is money driven. √
- **Texture**:
  Both covers make use of visual and simulated texture e.g. the imitated or illustrated lace. √ The tactile or actual texture of the printed cover is smooth and glossy to the touch. √
- **Pattern**:

Diagonal lines are used to create the grid or tartan/crisscross pattern in the background. √ The use of diagonal lines creates a feel of dynamic movement. √ The closely 'knitted' grid also creates an optical illusion and creates a grey tonal value. √

The grid pattern used for the *Coco* cover can reflect women who are more organised and neat. √ On the other hand, the *Joe* cover (with added 'free flowing' dollar coins) can reflect men who in general are more unstructured √ unstoppable, √ spontaneous and playful√, willing to gamble or take chances√

Credit must be given to any valid and reasonable answer.

Q1.1 LEVLE	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS (10)
Lower order		30%	1.1.2	3
Middle order		40%	1.1.2	4
Analysis Synthesis Evaluation		30%	1.1.1 +1.1.2	3

Example 2:

Question 3.2: DBE NSC DESIGN THEORY (P1) Exemplar November 2014 DESIGN LITERACY 'UNSEEN' EXAMPLES

FIGURE A: **The Roman Colosseum** completed in 80 AD.

FIGURE B: **The Blue Volcano Stadium**, Zagreb, Croatia, designed by Njiric and Arhitekti, 2012

3.2 Write an essay (of at least 200–250 words: ONE full page) in which you compare the ancient Roman structure featured in FIGURE A with the stadium in FIGURE B. You may also compare FIGURE A with any other modern example you have studied this year.

Use the following as a guideline in your essay:
- Purpose
- Materials and technology
- Target market   (10)

Discussion:

This question is rated as very difficult.
- **Content/Concept:** This is a comparative question relating to stadium architecture, past and present. They should be able to use appropriate design terminology and write a well-constructed essay using the guidelines provided in the question. The comparison must be integrated. Candidates will not be allocated any marks for a comparison delivered in two separate essays, or for information supplied in table form. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question. Candidates must refer to FIGURE A, the Colosseum in Rome, and they can either choose FIGURE B, The Blue Volcano Soccer Stadium in Croatia, OR any other relevant example of stadium architecture chosen by the candidate. They will be familiar with the Colosseum, as an example of Roman stadium architecture and they will have studied contemporary stadium architecture. However, they probably will not have studied FIGURE B which is an 'unseen' example. They are allowed to choose any other relevant example of contemporary stadium architecture to replace FIGURE B in their comparison.
- **Task:** While candidates are assisted by the inclusion of guidelines, unless they have a good general knowledge of stadium architecture and its social purpose, past and present, and can construct a valid and coherent comparison between the ancient and the modern approaches to the design

and function of stadiums, they will find this a challenge. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.

- **Expected Response:** The comparisons will be based on an understanding of the purpose of stadiums in general, in the past and present, and specifically that of the two examples; the use of building materials and the technology available at the time of construction of each stadium, and the target markets for each stadium. The ten marks allocated to this question reflect its level of complexity and challenge. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum. (10 marks)

Memorandum/Marking guidelines

QUESTION 3.2 (Allocate 10 marks in total)

In this question, the candidate is expected to compare and should not be allocated any marks for two separate essays, or for information supplied in table form.

A comparison between the Colosseum in Rome and the Blue Volcano soccer stadium in Croatia (or an example chosen by the candidate):

Purpose: The Colosseum was built for the emperors, Vespasian and Titus. √ It was built to entertain emperors and Romans with bloody sports, involving people, wild animals, gladiators and chariot races. √ The Blue Volcano Stadium was built to host soccer matches, but is also able to host diverse events such as skate-boarding and wall-climbing events. √ The Blue Volcano stadium in Zagreb, Croatia, designed by Njiric and Arhitekti, is an example of green/eco-friendly architecture. √
The huge crowd capacity of the Colosseum made it essential that the venue could be filled or evacuated quickly. They solved this by using multiple entrances. √ The Blue Volcano stadium also makes use of multiple entrances that allows for easy filling and evacuation. √

Materials and technology: The Colosseum was made from travertine stone which was set without mortar and held together by 300 tons of iron clamps. √ It was built by hand without the help from machines. √ The Blue Volcano Stadium is housed in an artificial hill made from recycled rubber. √ The corrugated aluminium sheets were sprayed with a blue pigment. √ The stadium features a balloon-like structure that covers the central area and so provides much-needed shading for the spectators. √

This balloon-like 'cloud' is made from sewn-in photovoltaic cells which generates renewable energy, sustainable for this unique stadium. √ The stadium has an open roof which allows natural light to enter the stadium. √

Target market: The target market of the Colosseum is largely determined by the form of activity that is hosted. A wide spectrum of the Roman population was catered for with various forms of entertainment. √ The Blue Volcano Stadium caters primarily for soccer fans, but also targets people interested in wall climbing and skate boarding. √

Alternatively, candidates who did not use FIGURE B in the comparison, but used other examples, must also be credited.

Credit must be awarded for any valid statements.

Example 3:

| Question 6: IEB NCS DESIGN THEORY, NOVEMBER 2010 DESIGN IN CONTEXT: HISTORICAL

The concept of "dematerialisation", "breaking the box" and "transcending boundaries" has been a constant preoccupation with 20th and 21st Century designers.

Discuss the statement above by referring to the works of at least TWO major international designers working after 1950. Discuss clearly how they have been influenced by the concepts above by referring to relevant works in detail.

[25]

(You may not repeat the same information that you used in answering another question). |
| --- |

Discussion:

 This question is rated as very difficult.

- **Content/Concept:** The design concepts such as the ones selected for this question are in common use and almost taken for granted but frequently not well understood or related to particular twentieth century and current design movements. Thus, **content** difficulty indexes the difficulty in the subject matter, topic or conceptual knowledge.
- **Stimulus:** This refers to the difficulty that candidates face when they attempt to read, interpret and understand the words, phrases in the question, or source material that accompanies the question. No visual examples are provided. Instead, candidates are given a written statement to discuss which refers to three major design concepts i.e. "dematerialisation", "breaking the box" and "transcending boundaries".
- **Task:** Candidates must discuss this statement with detailed reference to the work of two (or more) major international designers, post 1950, who have been influenced by one (or more) of these concepts. Hence, **task difficulty** refers to the difficulty that candidates confront when they try to formulate or produce an answer.
- **Expected Response:** This is an open ended, essay style question. However, candidates, in their discussion of the statement, must be able to describe, in detail, relevant examples of work which clearly shows the influence of one (or more) of these concepts on at least two relevant major international designers, post 1950. A standardised rubric is given in the memo to guide the marking of all design history essay questions. It defines the criteria, descriptors and mark allocations to be used by all examiners and markers. The twenty-five marks allocated to this question reflect its level of complexity and challenge. Ultimately, this refers to the difficulty imposed by examiners in the mark scheme and memorandum.

Memorandum/Marking guidelines

Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

Make value judgments informed by a clear understanding of design.

Understand design theory and use design terminology correctly

Discuss, explain and demonstrate the context and purpose of the products, images, signs and symbols used in design to convey overt and hidden messages that reinforce or challenge stereotypes, biases and prejudices, past and present.

Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LEVEL: Higher (11 marks), Middle (3 marks), Lower (11 marks)

The answers to this question will vary substantially. However, all should refer quite clearly to the specific question in case:
- concept of "dematerialisation" - Deconstructivism, use of glass
- "breaking the box" - Anti-design, Postmodernism
- "transcending boundaries" - Googie

There are no right or wrong answers, but the candidate must justify their positions with clear discussions of designers and their works. Discretion is required in the marking to allow for personal interpretation (to some extent) of the variety of trends in design during each era. Students but must refer to relevant and appropriate designers of each movement in question.

There should be a clear and detailed justification of choice of movements.

Deconstructivism – incl. Frank Ghery, Zaha Hadid, Rem Koolhaas, Santiago Calatrava, Peter Eisenman, Bernard Tschumi, Daniel Libeskind, David Carson, Tibor Kalman, Rei Kawakubo.

Use the rubrics suggested at the beginning of this section for marking the essay.

Memphis
An anti-design movement energized Italian design throughout the 1960s and '70s. Such radical design groups as Archizoom, Superstudio, and Studio Alchimia were established in opposition to the pure functionalism of the International Style. In 1981, Ettore Sottsass formed a loosely organized group to pursue an ironic approach to design in which surface decoration was paramount. When the group met one evening at Sottsass' home, Bob Dylan's song "Stuck Inside of Mobile with the Memphis Blues Again" was playing. Struck by the diverse implications of "Memphis," the designers adopted the name.

It suggested not only the typical American city, the blues, and suburbia, but also conjured visions of the ancient Egyptian capital, thus signalling contemporary and historical meaning as well as high and low culture. Memphis annually introduced

new furniture, lighting, textiles, ceramics, and glass objects in Milan from 1981 through the late 1980s.

Memphis Designers – Sottsass, De Lucchi, Bedine, Zandra Rhodes

"Form swallows function" Fred Baier 1981
Characteristics – counter consumerism, Italian design collaborative -reaction against slick, black humourless design of 1970's. In Italy, in the late 1960's there was a protest against establishment design. There was a rejection of consumer-orientated design. Most products in protest took an ironic or provocative stance. Memphis group began as a spin-off from Studio Alchymia. challenged conformist approach, shocking, bright, polychrome, gaudy colours, plastic, vibrant, eccentric, ornamental, untasteful, aim to reinvigorate radical design, eclectic influence from art deco and pop, kitsch and futuristic themes, experimentation with unconventional materials, historic forms, concepts in stark contrast to so called 'Good Design'.

Objects designed for mass production, shrilly colourful, playful and witty.
Furniture made from flashy coloured plastic laminates emblazoned with kitsch geometric and leopard-skin patterns usually found in comic books and cheap cafes. lights made from industrial materials – printed glass, celluloids, fireflake finishes, neon tubes and zinc-plated sheet-metals – jazzed up with flamboyant colours and patterns, spangles and glitter. By glorying in the cheesiness of consumer culture, Memphis was "quoting from suburbia," as Sottsass put it.

It was conceived by the group to be a 'fad', which like all fashions would very quickly come to an end. In 1988 Sottsass dismantled the group. Italy has always been front and centre in design; be it cars, fashion, architecture, or furnishings, Italian designers are innovative and on the cutting edge of what's hip and couture.

So, it was in 1981 in Milan, when a group of designers revealed a collection of home furnishings called "Memphis". Tired of the stark, dull, basic black themes so common in traditional minimalist design, this group sought to break the rules with colour, shape, and true function, and managed to become enormously popular in the process.

At the heart of the Memphis movement was Ettore Sottsass, a very successful designer in his own right. Sottsass was born in 1917 in Austria, but he and his father (himself a celebrated architect) called Milan home. After attending the Polytechnic of Turin, Sottsass opened his own studio in Milan. He went on to work and study design in New York and in India before returning to Italy to lend his services to the Olivetti company.

With Olivetti, Sottsass designed innovative and functional computers, office furniture, typewriters, and calculators. He created the outer casing for the Elea 9003 computer, which won him the prestigious Compasso d'Oro (Golden Compass)

award in 1959. Sottsass also created the wildly popular Olivetti Valentine; a portable typewriter that featured a bright red case and was intended for use anywhere but in the office. He loved to use bold colours in office furniture and equipment.

Two decades later, Sottsass was still challenging conventional design. He and a group of twenty-something designers, including Martine Bedin, Aldo Cibic, Michele De Lucchi, Matteo Thun, and Marco Zanini, met up in Sottsass' apartment to discuss a new line of home furnishings. On the record player that night was Bob Dylan's "Stuck Inside of Mobile with the Memphis Blues Again". The group originally decided on the name "The New Design" for their collection, but after the LP they were listening to, continued to skip on the word "Memphis", a new title was born.

Each designer brought a different aesthetic to the table. Collectively, they decided to work independently on their designs and bring the collection together with the common goal of breaking away from the traditional modernist design themes. And so, Memphis was born.

On September 18th, 1981, the House of Memphis displayed their work with their first show at the Arc '74 showroom in Milan. They had added journalist Barbara Radice to their team, to market their work and write press releases for the international media. The buzz over this new and innovative collection was huge, and the media immediately fell in love with Memphis.

Show attendees were shocked at the gaudy, kitschy colours and prints. Many pieces were covered in plastic laminate, which was a far cry from the standard minimalist design that was so popular at the time. Large, chunky, bright and functional pieces were presented to the press and public alike, taking the design world by storm. Sottsass dubbed Memphis the "new international design".

Included in the Memphis collection was the Super Lamp; a metal semi-circle painted black with rainbow-coloured sockets to fit six uncovered light bulbs. There was the Beverly cabinet, which featured hues of yellow and green with snakeskin print doors. The Carlton bookshelf was a marvel of creative design with its angled shelves and many bright colours.

Memphis was an instant success, and for four years the team continued to create limited edition, functional pieces that sported colourful and bold paint, fabric, and laminate. Famous fashion designer Karl Lagerfield and American architect Michael Graves both furnished their offices with Memphis designs. Designers from around the globe joined the movement and created their own Memphis pieces.

In 1985, Sottsass began to grow disillusioned with the group and the constant press surrounding it. Wanting to move on with his career and start something new, he left the group. After struggling to find another niche, he started up yet another

company called Sottsass Associati where he was able to concentrate on architecture. Many of his associates from the Memphis group later joined him there.

In 1988, Memphis officially disbanded. Sottsass continues to be recognized as a leader in the Anti-Design movement, which challenged the traditional and minimalist ways of furnishing homes and offices. Memphis pieces have become highly collectible items and are exciting finds at auction houses and vintage showrooms the world over.

Postmodernism:
The last quarter of the twentieth century saw a surge of unbridled consumerism manifested in a number of diverse, often contradictory, design currents. Some architects and designers chose to conform to the previously established intellectual strictures of modernism, seeking expression through form rather than applied ornament. Others, inspired by texts that denounced the cool aridity of modernism – including Robert Venturi's Learning from Las Vegas (1972), Collage City (1973) by Colin Rowe and Fred Koetter, and Rem Koolhaas' Delirious New York (1978) – developed a postmodernism that celebrated the vernacular and reinterpreted motifs of the past. Still others used the design of objects as a means to make countercultural social or political statements. Many of the leaders of the Studio Craft Movement consciously abandoned the creation of useful objects in favour of non-functional art. Toward the end of the 1980s, designers, recognizing the inherent beauty of materials developed for science, began to employ them in a wide range of consumer products. In the century's last decade, the environment became a major concern for designers offering "green," socially responsible solutions to design problems.

A rejection of the sovereign autonomous individual with an emphasis upon anarchic collective, anonymous experience. Collage, diversity, the mystically unrepresentable, Dionysian passion are the foci of attention. Most importantly we see the dissolution of distinctions, the merging of subject and object, self and other. This is a sarcastic playful parody of western modernity and the "John Wayne" individual and a radical, anarchist rejection of all attempts to define, reify or re-present the human subject.

Postmodernism is difficult to define, because to define it would violate the postmodernist's premise that no definite terms, boundaries, or absolute truths exist. In this article, the term "postmodernism" will remain vague, since those who claim to be postmodernists have varying beliefs and opinions on issues. To the postmodernist, the Western world society is an outdated lifestyle disguised under impersonal and faceless bureaucracies. The postmodernist endlessly debates the modernist about the Western society needing to move beyond their primitiveness of ancient traditional thought and practices.

Their concerns, for example, often include building and using weapons of mass destruction, encouraging an unlimited amount of consumerism thus fostering a wasteful throwaway society at the sacrifice of the earth's resources and environment, while at the same time not serving the fair and equitable socioeconomic needs of the populace.

Postmodernists believe that the West's claims of freedom and prosperity continue to be nothing more than empty promises and have not met the needs of humanity. They believe that truth is relative and truth is up to each individual to determine for himself. Most believe nationalism builds walls, makes enemies, and destroys "Mother Earth," while capitalism creates a "have and have not" society, and religion causes moral friction and division among people.

Postmodernists are typically atheistic or agnostic while some prefer to follow eastern religion thoughts and practices. Many are naturalist including humanitarians, environmentalists, and philosophers. They challenge the core religious and capitalistic values of the Western world and seek change for a new age of liberty within a global community.

From the late 1970s through the 1980s, many architects and designers, reacting against the dictates of modernism, looked to Neoclassical forms and materials for inspiration. Visual references derived from art and architecture superseded functionalism and overt historical references and decoration transformed architecture, furniture, table top accessories, even jewellery, into objects of fantasy. Well-known architects Michael Graves, Robert Venturi, and others accepted commissions to design products for such diverse international companies as Knoll, Alessi, and Formica.

Late Modernism – Hi Tech
International Style architecture developed in Europe between the world wars and dominated design throughout the twentieth century. From 1975 onward, late modernist projects were guided by the conviction that rationalist architecture had yet to be fully realized. Designers sought to integrate modern technology with formal elements derived from the basic grid. The use of industrial materials – predominantly stainless steel and other metal s– and of minimalist, linear forms evokes the language of the idealistic International Style as well as a Japanese design philosophy of doing more with less.

9.   Concluding remarks

This exemplar book is intended to be used as a training tool to ensure that all role players in the Design 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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