



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2013

DESIGN: PAPER I

MARKING GUIDELINES

Time: 3 hours

150 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

INSTRUCTIONS TO MARKERS

- Please mark clearly in RED pen. The Moderator will mark in GREEN.
- Place a tick **above each substantiated fact** (not in the margin). This will enable the Moderator to standardise effectively.
- Please indicate **marks per sub-question as an underlined number** in the right hand margin at the end of each sub-question.
- Indicate **total marks PER QUESTION** at the **end of the question** as a **circled total**.
- Where a script has been marked, but the information is either irrelevant/does not answer the question OR is over and above information required, please indicate that marking has occurred in the margin as a squiggled line. This is to prevent remarking of scripts – if a page is left totally blank, the checkers will presume it has not been marked.
- Enter marks/question/candidate on the data capture form prepared by the Examiner. No candidate numbers are to be recorded, only the marks.
- Please record relevant comments per centre as to specific problems/credits encountered PER CENTRE so as to enable constructive feedback to the centres.

SECTION A DESIGN LITERACY**QUESTION 1 THE DESIGN PROCESS****QUESTION 1.1 (1 mark)****QUESTION TYPE/COGNITIVE SKILLS: Synthesis (1 mark)****LO 1 AS 1 Demonstrate a sound understanding of the interrelated nature of the planning, action and reflection cycle which informs the design process.****LEVEL: Higher (1)**

A designer should evaluate their design **constantly** during the design process. Accept any answer that acknowledges constant evaluation, no substantiation needed.

Total possible marks – 1**QUESTION 1.2 (4 marks)****QUESTION TYPE/COGNITIVE SKILLS: Application (2 marks) Synthesis (1 mark) Evaluation (1 mark)****LO 1 AS 1 Demonstrate a sound understanding of the interrelated nature of the planning, action and reflection cycle which informs the design process.****LO 2 AS 1.1 Apply and provide evidence of the design process.****LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.****LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.****LO 3 AS 3.2 Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.****LEVEL: Middle (2) Higher (2)**

One mark to be awarded for any **substantiated valid discussion on/reason for** the use of constant evaluation and review during the design process. Use the following as guidelines.

The evaluation and review process is important during the:

Ideation phase:

The design brief should be reviewed and analysed in terms of needs, problems and opportunities so that appropriate research can take place to inform the specifications of the design solution. It helps by being able to identify any problems that might not have been foreseen.

Concept phase:

Rough ideas should be evaluated against the needs of the design brief, as it keeps the aim in focus as it is easy to get side-tracked during the creative process.

Development phase:

The final designs at the end of the development phase must be evaluated before production begins against the specifications of the design brief.

Production phase:

Constant evaluation will ensure quality control during mass production.

Exhibition phase:

After reviewing the product before marketing, the product use should be evaluated and reviewed by consumer testing.

Feedback from the product's market performance should be reviewed using market surveys.

Designs should be constantly reviewed as new factors can be considered, like improvements in materials, ergonomic studies and production technologies.

Total possible marks – 4**QUESTION 1.3 (5 marks)**

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Application (2 marks), Synthesis (1 mark) Evaluation (1 mark)

LO 1 AS 1 Demonstrate a sound understanding of the interrelated nature of the planning, action and reflection cycle which informs the design process.

LO 2 AS 1.1 Apply and provide evidence of the design process.

LO 2 AS 1.4 Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.

LEVEL: Lower (2), Middle (2), Higher (1)

One mark/substantiated fact to be awarded for any correct relevant point that explains the exhibition phase.

- A maximum of three marks to be awarded for the explanation.
- Two marks to be awarded for correct naming of two relevant communication techniques that might be used during the exhibition phase.

Use the following information as a guideline.

The exhibition phase takes place after the design product itself has been made. Once the product is manufactured and leaves the production line, the design is placed into its context and once more, the designer's intervention is needed. Actions in this phase involve monitoring the effects of product use on business, environment, social, cultural, and technological contexts.

Issues need to be addressed such as:

- Planning the marketing strategy for the product
- packaging, instructional leaflets and labelling
- logistics – transportation and distribution
- waste management and recycling
- advertising and promotion
- visual merchandising in store
- improvements
- Evaluate product performance and
- Maintain reflection on the process and its end results, constantly modify.

Communication products during this phase might include:

- Marketing materials – pamphlets, flyers,
- Support material – brochures, instruction manuals
- Advertising – film commercials, billboards
- Packaging – point-of-sale displays, swing tickets

Total possible marks – 5**QUESTION 1.4 (2 marks)**

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (1 mark), Application (1 mark)

LO 2 AS 1.4	Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.
LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LEVEL:	Lower (1), Middle (1)

1 mark to be awarded per correct fact relating to the use of one material/tools/machine/convention/technique. Use the following information as guidelines.

1.4.1 Laser cutter

Laser cutting is a technology that uses a laser to cut materials, and is typically used for industrial manufacturing applications, but is also starting to be used by schools, small businesses, and hobbyists. Laser cutting works by directing the output of a high-power laser, by computer, at the material to be cut. The material then either melts, burns, vaporises away, or is blown away by a jet of gas, leaving an edge with a high-quality surface finish. Industrial laser cutters are used to cut flat-sheet material as well as structural and piping materials. (2)

1.4.2 Rapid prototyping

Rapid prototyping is a group of techniques used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data.

Construction of the part or assembly is usually done using 3D printing technology. The first techniques for rapid prototyping became available in the late 1980s and were used to produce models and prototype parts. There are six types of rapid prototyping:

Stereo-Lithography Apparatus (SLA); Fused Deposition Modelling (FDM); Thermojet; Three-Dimensional Printing (3-D Printing); Selective Laser Sintering (SLS); Laser Engineered Net Shaping (LENS) (2)

1.4.3 Woodwork Router

A router is a tool used to rout out (hollow out) an area in the face of a relatively hard workpiece, typically of wood or plastic. The main application of routers is in woodworking, especially cabinetry. In traditional woodworking, it was a tool particularly used by pattern makers and staircase makers and consisted of a broad-based wooden hand plane with a narrow blade projecting well beyond its base plate. (2)

1.4.4 Graphics tablet

A graphics tablet or digitiser is a computer input device that enables a user to hand-draw images and graphics, similar to the way a person draws images with a pencil and paper. These tablets may also be used to capture data or handwritten signatures. It can also be used to trace an image from a piece of paper which is taped or otherwise secured to the surface. Capturing data in this way, either by tracing or entering the corners of linear poly-lines or shapes is called digitising. The device consists of a flatsurface upon which the user may 'draw' or trace an image using an attached stylus, a pen-like drawing apparatus. The image generally does not appear on the tablet itself but, rather, is displayed on the computer monitor.

Some tablets are intended as a general replacement for a mouse as the primary pointing and navigation device for desktop computers. (2)

1.4.5 **3-D scanner**

A 3D scanner is a device that analyses a real-world object or environment to collect data on its shape and possibly its appearance (i.e. colour). The collected data can then be used to construct digital, three dimensional models.

Many different technologies can be used to build these 3D scanning devices; each technology comes with its own limitations, advantages and costs. Many limitations in the kind of objects that can be digitised are still present, for example, optical technologies encounter many difficulties with shiny, mirroring or transparent objects.

Collected 3D data is useful for a wide variety of applications. These devices are used extensively by the entertainment industry in the production of movies and video games. Other common applications of this technology include industrial design, orthotics and prosthetics, reverse engineering and prototyping, quality control/inspection and documentation of cultural artefacts.

(2)

1.4.6 **Rotational moulding**

Rotational Moulding (BrE moulding) involves a heated hollow mould which is filled with a charge or shot weight of material. It is then slowly rotated (usually around two perpendicular axes) causing the softened material to disperse and stick to the walls of the mold. In order to maintain even thickness throughout the part, the mould continues to rotate at all times during the heating phase and to avoid sagging or deformation also during the cooling phase. Over the past two decades, improvements in process control and developments with plastic powders have resulted in a significant increase in usage.

(2)

1.4.7 **Lathe**

A lathe is a machine tool which rotates the workpiece on its axis to perform various operations such as cutting, sanding, knurling, drilling, or deformation, facing, turning, with tools that are applied to the workpiece to create an object which has symmetry about an axis of rotation. Lathes are used in woodturning, metalworking, metal spinning and glass-working. Lathes can be used to shape pottery, the best-known design being the potter's wheel. Most suitably equipped metalworking lathes can also be used to produce most solids of revolution, plane surfaces and screw threads or helices. Ornamental lathes can produce three-dimensional solids of incredible complexity. The material can be held in place by either one or two *centres*, at least one of which can be moved horizontally to accommodate varying material lengths. Other work-holding methods include clamping the work about the axis of rotation using a chuck or collet, or to a faceplate, using clamps or dogs. Examples of objects that can be produced on a lathe include candlestick holders, gun barrels, cue sticks, table legs, bowls, baseball bats, musical instruments (especially woodwind instruments), crankshafts, and camshafts.

(2)

1.4.8 **Smart materials**

Smart materials or designed materials are materials that have one or more properties that can be significantly changed in a controlled fashion by external stimuli, such as stress, temperature, moisture, pH, electric or magnetic fields. There are a number of types of smart material, some of which are already common. Some examples are as following:

- Piezoelectric materials are materials that produce a voltage when stress is applied. Since this effect also applies in the reverse manner, a voltage across the sample will produce stress within the sample. Suitably designed structures made from these materials can therefore be made that bend, expand or contract when a voltage is applied.
- Shape-memory alloys and shape-memory polymers are materials in which large deformation can be induced and recovered through temperature changes or stress changes (pseudo-elasticity). The large deformation results due to martensitic phase change.
- Magnetostrictive materials exhibit change in shape under the influence of magnetic field and also exhibit change in their magnetisation under the influence of mechanical stress.
- Magnetic shape memory alloys are materials that change their shape in response to a significant change in the magnetic field.
- pH-sensitive polymers are materials that change in volume when the pH of the surrounding medium changes.
- Temperature-responsive polymers are materials which undergo changes upon temperature.
- Halochromic materials are commonly used materials that change their colour as a result of changing acidity. One suggested application is for paints that can change colour to indicate corrosion in the metal underneath them.
- Chromogenic systems change colour in response to electrical, optical or thermal changes. These include electrochromic materials, which change their colour or opacity on the application of a voltage (e.g., liquid crystal displays), thermochromic materials change in colour depending on their temperature, and photochromic materials, which change colour in response to light—for example, light sensitive sunglasses that darken when exposed to bright sunlight.
- Ferrofluid
- Photomechanical materials change shape under exposure to light.
- Self-healing materials have the intrinsic ability to repair damage due to normal usage, thus expanding the material's lifetime
- Dielectric elastomers (DEs) are smart material systems which produce large strains (up to 300%) under the influence of an external electric field.
- Magnetocaloric materials are compounds that undergo a reversible change in temperature upon exposure to a changing magnetic field.
- Thermoelectric materials are used to build devices that convert temperature differences into electricity and vice-versa. (2)

1.4.9 **Overlocking machine**

An overlocking machine stitch sews over the edge of one or two pieces of cloth for edging, hemming or seaming. Usually an overlocking sewing machine will cut the edges of the cloth as they are fed through, though some are made without cutters. The inclusion of automated cutters allows overlocking machines to create finished seams easily and quickly. (2)

1.4.10 Heat Gun (2)

A heat gun is a device used to emit a stream of hot air, usually at temperatures between 100 °C and 550 °C (200 – 1 000°F), with some hotter models running around 760 °C (1400 °F), which can be held by hand. Heat guns usually have the form of an elongated body pointing at what is to be heated, with a handle fixed to it at right angles and a trigger, in the same general layout as a handgun, hence the name. Heat guns are used in laboratory and workshop settings. Different types of heat gun operating at different temperatures and with different airflow can be used to strip paint, shrink heat shrink tubing, shrink film, and shrink wrap packaging, dry out damp wood, bend and weld plastic, soften adhesives.

(2)

Total possible marks – 2**[12]**

QUESTION 2 DESIGN COMMUNICATION**QUESTION 2.1 (2 marks)****QUESTION TYPE/COGNITIVE SKILLS: Knowledge (1 mark), Comprehension (1 mark)****LO 3 AS 1.2 Understand design theory and use design terminology correctly.****LO 3 AS 3.1 Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.****LEVEL: Lower (2)**

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.

Total possible marks – 2

QUESTION 2.2 (6 marks)**QUESTION TYPE/COGNITIVE SKILLS: Comprehension (2 marks), Analysis (4 marks)****LO 1 AS 2.2 Display knowledge and appreciation of aesthetics and functionality throughout the design process.****LO 3 AS 1.2 Understand design theory and use design terminology correctly.****LO 3 AS 1.3 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.****LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.****LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.****LO 3 AS 3.1 Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.****LEVEL: Lower (2), Higher (4)**

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.

Total possible marks – 6

QUESTION 2.3 (4 marks)

QUESTION TYPE/COGNITIVE SKILLS: Analysis (2 marks); Evaluation (2 marks)

LO 3 AS 1.3	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.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LO 3 AS 3.1	Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.
LEVEL:	Middle (2 marks), Higher (2 marks)

Candidates should give credible reasonable suggestions as to the possible reasons for the changes made to the logos. One mark per credible answer.

Use the following information as marking guidelines.

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 more humble, less corporate, makes a personal connection with consumer.

Radial movement suggests more progressive company.

The precision and complexity of the radial, symmetrical pattern implies advancement, technology.

Total possible marks - 4

QUESTION 2.4 (1 mark)

QUESTION TYPE/COGNITIVE SKILLS: Comprehension (1 mark)

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LEVEL: Lower (1)

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.

Total possible marks – 1

QUESTION 3 VISUAL ANALYSIS

QUESTION 3 (15 marks)	
QUESTION TYPE/COGNITIVE SKILLS: Knowledge (3 marks) Application (3 marks), Analysis (6 marks), Synthesis (3 marks)	
LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 3 AS 1.2	Understand design theory and use design terminology correctly.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LEVEL:	Lower (3 marks) Middle (9 marks) Higher (3 marks)

This question requires that candidates analyse one of the products using the headings provided. The analysis must convey a clear sense that the candidate understands visual analysis. There cannot be any confusion between terms.

The use of design vocabulary is important in the answers to this question and a suitable level of design-speak should be evidenced in the answer. However, it is important that allowance be made for some variation in the analysis of the images.

One mark to be awarded per substantiated observation/analysis for each image. THREE marks total per heading.

Use the following as a guideline; allowing credit for any other credible observations, analysis and interpretations.

	Protea Chandelier Willowlamp	Lillypad housing Callebaut	IBM Paul Rand
Line	Line is created by the actual material of the ballchain which loops and folds upon itself. The line is organic and delicate, constantly moving as a result of the lightweight ballchain.	A long undulating line flows continuously around the top edge of the structure. The structural lines of the concentric white aerated acrylic structure are intended to give strength and stability to the superstructure. The lines of the top skylights create a sense of flowing movement around the entire structure.	Outline is created by the use of flat colour on the black background. The black lines break the shapes of the bee and the letter M. A series of lines are created by the horizontal fracturing of the bee and the M.
Shape/Form	The lengths of ballchain are connected to a copper template which acts as a support structure from which they hang. The graded attachment of the ballchain to the copper structure creates the suggestion of three dimensional shapes. The	The shape of the housing structure is organic and biomorphic. A concentric radial structure in the centre of the structure can be seen as the internal skeleton of the construction. The form is inspired by a lily pad (biomimesis), with a	Shapes are flat and simplified in this rebus. The depiction of the eye and bee shows extreme stylisation into pictograms. There is a strong use of positive and negative shape.

	<p>overlapping of the different layers of ballchain creates a sense of depth. Dependant on where one observes the light, the layering of ballchain over ballchain and copper structure creates different fractal images.</p>	<p>heavy submerged cone anchoring the flat leaf-like structure. The actual leaf-like forms have concave and convex surfaces to aid with streamlining for flowing movement and reaction to wind and water.</p>	
Rhythm	<p>There is a constant sense of rhythm established by the repetition of the petal-like shapes, and by the linear construction.</p>	<p>Rhythm is established by the smooth undulating movement of the white structures forming the underlying skeleton. Regular repetition of green vertical farming panels create rhythm.</p>	<p>Rhythm is created from left to right, as the reader begins with the strong black circle on the white eye. The thick black line that is formed leads into the horizontal lines of black that fragment the bee and the M. These allow a constant flow from left to right. The repetition of the dot, in the eye and the bee, creates repetition, as does the repetition of linear motifs of the fragmented bee and M.</p>
Colour	<p>The metallic colour is as a result of the ballchain material which has been powder-coated. As the light reflects off the metal balls, a glimmering play of highlights and shadows accentuates the monochromatic colour of the light. The bronze colour suggests luxury and glamour.</p>	<p>The white colour of the aerated acrylic is used to cool the structures down by reflecting sunlight. The green areas indicate plants for self-sustainability. The pool areas are also white so as to reflect the translucent colour of the water on top of it.</p>	<p>The colours are saturated and are applied flat. The use of polychromatic elements conveys a sense of fun. The use of a flat black background provides strong contrast.</p>
Balance	<p>Balance is symmetrical from a side view and radial from a view underneath the chandelier. The balance gives a sense of formality.</p>	<p>The housing construction is balanced literally as it floats on a wide hull. Although the vertical facades are not symmetrical, they radiate around a central area. There is a sense of asymmetrical balance.</p>	<p>The image is asymmetrically balanced as the eye and M motif is balanced around the centralised bee motif. The horizontal composition establishes a sense of calm.</p>

Total possible marks – 15

QUESTION 4 TERMINOLOGY**QUESTION 4 (10 marks)**

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (5 marks) Application (3 marks) Synthesis (2 marks)

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.

LEVEL: Lower (5) Middle (3) Higher (2)

The answers given by candidates to these definitions **MUST** be **framed within a design context** specifically. One mark is to be awarded per relevant point made in the definition, with a maximum of two marks to be awarded per correct answer.

Use the following as guidelines:

4.1 intellectual property

Intellectual property is a legal concept which refers to creations of the mind for which exclusive rights are recognised. Under intellectual property law, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works; discoveries and inventions; and words, phrases, symbols, and designs. Common types of intellectual property rights include copyright, trademarks, patents, industrial design rights, trade dress, and trade secrets.

4.2 zeitgeist

The Zeitgeist (spirit of the age or spirit of the time) is the intellectual fashion or dominant school of thought that typifies and influences the culture of a particular period in time.

4.3 hybridisation

Hybridisation is a new approach in design aimed at transferring logics, codes and complex qualities of biological systems, e.g. autonomy, self-organisation, adaptation and hologrammatic principle, to the design of sustainable products and services. Hybrid design refers to technological transfer from fields with high scientific and technological content. It involves the incorporation of nature to compliment the development of designs. Growing design, or cloning design, and designing objects or building that fit like a glove, or inspirational usages of skeletal shapes, animal and natural skins, should be considered for the future of design.

4.4 Universal design

Universal design refers to broad-spectrum ideas meant to produce buildings, products and environments that are inherently accessible to both people without disabilities and people with disabilities. For instance, providing ramps for wheelchair access, braille on elevator doors.

Universal design emerged from slightly earlier **barrier-free** concepts, the broader accessibility movement, and adaptive and assistive technology and also seeks to blend aesthetics into these core considerations. As life expectancy rises and modern medicine increases the survival rate of those with significant injuries, illnesses, and birth defects, there is a growing interest in universal design. There are many industries in which universal design is having strong market penetration but there are many others in which it has not yet been adopted to any great extent. Universal design is also being applied to the design of technology, instruction, services, and other products and environments.

Curb cuts or sidewalk ramps, essential for people in wheelchairs but also used by all, are a common example. Colour-contrast dishware with steep sides that assists those with visual or dexterity problems are another. There are also cabinets with pull-out shelves, kitchen counters at several heights to accommodate different tasks and postures, and, amidst many of the world's public transit systems, low-floor buses that 'kneel' (bring their front end to ground level to eliminate gap) and/or are equipped with ramps rather than on-board lifts.

4.5 **Consumerism**

Consumerism is a social and economic order that encourages the purchase of goods and services in ever-greater amounts. The term is often associated with criticisms of consumption and the negative effects of globalisation. In this sense, consumerism is usually considered a part of media culture.

However, the term 'consumerism' is also used to refer to the consumerists movement, consumer protection or consumer activism, which seeks to protect and inform consumers by requiring such practices as honest packaging and advertising, product guarantees, and improved safety standards. In this sense it is a movement or a set of policies aimed at regulating the products, services, methods, and standards of manufacturers, sellers, and advertisers in the interests of the buyer.

4.6 **Adhocism**

The tendency to establish temporary, chiefly improvisational policies and procedures to deal with specific problems and tasks. A design strategy that uses improvisation. Notions of 'Adhocism' were coined by architectural designer, theorist, and sometime designer Charles Jencks and Nathan Silver in their book *Adhocism: The Case for Improvisation* (1972). They considered the ways in which designers could take immediate action through the use of readily available components in ways that had never been conceived in their original design. Hippy communities in the United States had explored some of these ideas in the 1960s, as in Drop City, where dome dwellings were constructed from car roofs bought cheaply from scrapyards, reusing materials abandoned by the consumer society.

4.7 **Technocratic**

In Design, a technocratic approach is one that relies heavily on solutions that are derived from a scientific and technological arena, rather than from social, cultural or economic contexts. Decision making is determined by scientists, engineers, and technologists who have knowledge, expertise, or skills.

4.8 **Bespoke**

Bespoke refers to designs that are made to a buyer's specification, implying customized measuring and fitting. The term built to order is also used. 'Bespoke' describes a high degree of 'customisation', and involvement of the end-user in the production of the goods.

4.9 Entrepreneur

A person who organises, operates, and assumes the risk for a business venture.

4.10 Scoping

Scoping is a technique used during the ideation phase of the design process to identify the key issues of concern at an early stage in the planning process. Scoping should be carried out at an early stage in order to aid the selection process and identify any possible alternatives. The scoping process should involve *all interested parties* such as the proponent and planning or environmental agencies and members of the public. The Design Scope outlines the general aims and goals of the project design and lists the major deliverables and milestones.

(5 × 2) marks each
[10]

50 marks

SECTION B DESIGN IN CONTEXT – HISTORICAL

Candidates are required to answer TWO QUESTIONS from this section in essay format.

Marks awarded in this section must be clearly indicated and labelled according to the marking grid outlined in the examination paper.

Structure	Logical flow of introduction, body, conclusion	3
Context	Appropriate contextual relevance to the answer	5
Facts	Depth of factual discussion and reference to designers and works that are pertinent to the answer	7
Analysis	Detailed discussion of strategic works	7
Terminology	Relevant use and level of 'design-speak'	3
Total marks: 25		

Assessment of the essays should take into account the following breakdown:

Section of essay	Marks	Criteria	Cognitive skills	Level	Marks
Structure	3	Introduction, body and conclusion	Evaluate	Higher order	1
			Synthesis	Higher order	2
Context	5	Understanding of contextual background to the question	Synthesis	Higher order	3
			Evaluation	Higher order	2
Content	7	Depth of discussion, body of works, accuracy of information	Knowledge	Lower order	3
			Application	Middle order	3
			Analysis	Higher order	1
Visual analysis	7	Visual analysis, discussion of actual works	Knowledge	Lower order	1
			Application	Middle order	4
			Analysis	Higher order	2
Terminology	3	Design –speak, terminology	Knowledge	Lower order	3
	25				25

Q5	WEIGHTING %	MARKS
Higher order	44%	11
Middle order	28%	7
Lower order	28%	7
	100%	25

MARKING PROCEDURE

- The marker should read through the essay, ticking relevant facts/terms/points.
- Markers should be very clear in their marking of the essays and should place their ticks **DIRECTLY ABOVE/ON the fact/term/concept being awarded** the mark and NOT in the margin. In this way, moderation can be accurate.
- Thereafter, each tick given must be categorised by writing an S for structure, C for context, F for facts, A for analysis and T for terminology next to the relevant tick. Use the detailed explanation that follows.
- The totals for S, C, F, V and T should be clearly noted at the end of the essay.
- It is possible that an essay has ONLY facts, but no context. This will result in a number of F ticks that amount to more than the maximum of 7 marks. This should be shown in the question total at the end of the essay as follows: If a candidate gets 10 ticks for Facts, write 10 – 3 (7).

Follow the detailed marking guideline that follows:

	Label	Criteria	Max marks
Structure	S	<p>Maximum of 3 marks to be awarded.</p> <ul style="list-style-type: none"> • Response – 1 mark ONE STRUCTURE MARK to be awarded for an appropriate introduction clearly responding to/addressing the issues being asked in the question. Students cannot merely write a rehearsed essay on a movement. If the introduction does NOT CLEARLY address the specific question, no mark is to be awarded. • Length- 1 mark ONE STRUCTURE MARK for an adequate length essay, of at least 250 words. The argument/discourse should flow logically and should be written in full, logical sentences with no point-form listing of facts or headings, unless the question specifically asks for them. If the essay is under a page, no mark to be awarded. • Synthesis/Conclusion – 1 mark ONE STRUCTURE for an appropriate and relevant conclusion. If there is no relevant conclusion, no mark to be awarded. 	3
Context	C	<p>Maximum of 5 marks to be awarded.</p> <ul style="list-style-type: none"> • ONE CONTEXT MARK should be awarded for each relevant contextual factor and interpretation informed by the specific question. • These factors can relate to the relevant political, social, cultural, economic and environmental circumstances that impacted on the designed products. However, reference to the biographical details of designers are mostly irrelevant, unless they apply to the designs themselves or to the specific question. • Any extraneous context factors outside the reference of the question should be ignored. 	5
Facts	F	<p>Maximum of 7 marks to be awarded.</p> <ul style="list-style-type: none"> • ONE FACTUAL MARK should be awarded for each relevant and correctly spelt designer (the first time the designer's name is mentioned, not subsequent naming). • ONE FACTUAL MARK for each relevant and correctly spelt design work that is an appropriate example to substantiate the answer. • Marks should be awarded for a maximum of 3 designers/3 works each to avoid listing. If other works are discussed in detail, marks should be awarded under Analysis for the discussion, but not for the name of the work. • ONE FACTUAL MARK should be awarded for each relevant and correct date/fact regarding the design works. • Any extraneous facts outside the reference of the question should be ignored. 	7
Analysis	A	<p>Maximum of 7 marks to be awarded.</p> <ul style="list-style-type: none"> • ONE ANALYSIS MARK should be awarded for each relevant and correct description and analysis of a design work using the elements and principles. • No marks should be awarded for unvalidated value judgements. 	7
Terminology	T	<p>Maximum of 3 marks to be awarded.</p> <ul style="list-style-type: none"> • ONE TERMINOLOGY MARK should be awarded for each relevant and correct term used/relevant use and level of 'design-speak' • The use of correct design terms, language and references will be an indicator of the quality of the answers. 	3

The following detailed rubric with level descriptors could be used to assist in the marking of questions in this section:

Level	Section of essay	Criteria	Marks	Total
7	Context (5)	Clear response to question, appropriate contextual framework relevant to the answer, shows insight well above expected levels of cognitive thinking, new viewpoints, shows insight into higher cognitive thinking	4 or 5/5	23 – 25 92 – 100%
	Content/Facts (7)	Substantial depth of factual discussion, provided all the important, relevant points in a factually correct, accurate discussion	7/7	
	Analysis (7)	Discussion of works reveal an excellent understanding of analysis of works/interpretation	7/7	
	Structure (3)	Intro and conclusion directly address question, argument flows logically Well structured, sound, sensible writing	2 or 3/3	
	Terminology (3)	Excellent use of appropriate terminology/vocabulary	2 or 3/3	
6	Context (5)	Clear, accurate understanding of the topic, good insights expressed	4 or 5/5	20 – 22 80 – 88%
	Content/Facts (7)	Substantial depth of factual discussion, provided most of the critical points names of designers and works, factually correct, spelt correctly	6 or 7/7	
	Analysis (7)	Good and substantial analysis of works	6 or 7/7	
	Structure (3)	Well-structured essay, intro and conclusion directly address question	2 or 3/3	
	Terminology (3)	Good use of appropriate terminology/vocabulary	2 or 3/3	
5	Context (5)	A fair response to the question, some good insight	4 or 5/5	16 – 19 64 – 76%
	Content/Facts (7)	Mostly factually correct; enough relevant and correct facts that are substantiated with evidence in works, names of designers and works spelt correctly,	4 or 4/7	
	Analysis (7)	Enough relevant works discussed and some good analysis	4 or 5/7	
	Structure (3)	Structured essay with intro and conclusion	2 or 3/3	
	Terminology (3)	Use of adequate appropriate terminology	2 or 3/3	
4	Context (5)	An adequate response to the question, but lack of contextual clarity, lost focus in places; but manages to mention some important facts	3 or 4/5	12 – 15 40 – 60%
	Content/Facts (7)	Provided some good factual content but missed some critical focus in places; some factual omissions;	3 or 4/7	
	Analysis (7)	Enough relevant works discussed and some analysis	3 or 4/7	
	Structure (3)	Structured essay with intro and conclusion	2 or 3/3	
	Terminology (3)	Use of adequate appropriate terminology	1 or 2/3	
3	Context (5)	A confused response, gets lost in places and loses focus	1 or 2/5	8 – 11 32 – 44%
	Content/Facts (7)	Provided some good facts but not always relevant; factual omissions or errors	3 or 4/7	
	Analysis (7)	Some limited analysis of works	2 or 3/7	
	Structure (3)	Some structure, fragmented discussion	1 or 2/3	
	Terminology (3)	Some use of terminology	1 or 2/3	
2	Context (5)	Poor understanding of context	1 or 0/5	5 – 7 20 – 28%
	Content/Facts (7)	Large gaps in knowledge; repetition and irrelevance present	1 or 2/7	
	Analysis (7)	Insubstantial analysis of works	1 or 2/7	
	Structure (3)	Poorly structured, no introduction or conclusion	1 or 0/3	
	Terminology (3)	Basic use of terminology	1 or 0/3	
1	Context (5)	Little evidence of contextual understanding	1 or 0/5	0 – 4 16%
	Content/Facts (7)	Large gaps in knowledge; little factual information	1 or 0/7	
	Analysis (7)	Does not refer to analysis of works	1 or 0/7	
	Structure (3)	Very poorly written, unstructured, no intro or conclusion	1 or 0/3	
	Terminology (3)	Insubstantial use of terminology	1 or 0/3	

QUESTION 5 (25 marks)**QUESTION TYPE/COGNITIVE SKILLS: Comprehension, Application, Analysis, Synthesis, Evaluation**

LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

LO 3 AS 1.1 Make value judgments informed by a clear understanding of design.

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 1.3 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.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LEVEL: Higher (11 marks), Middle (7 marks), Lower (7 marks)

[25]

The answers to this question will vary substantially. However, all should refer quite clearly to the specific question.

The answers to this question should clearly:

- Debate the origins and characteristics of ONE design period/style since 1960.
- The essay should begin by briefly saying whether the candidate agrees or disagrees with the statement in italics above and give reasons why.
- The answer should make reference to whether the movement/period was rebelling against or perhaps imitating the past. The essay should clearly point out what was copied and/or discarded.
- The answers to this question will use examples that vary substantially, dependent on the interpretation. However, all should refer quite clearly to the specific question, tracking the theme of *imitation, a revisionist pastiche, an attempt to revive the past*.
- The candidate should identify specific motifs that were resurrected from the past, giving detailed descriptions and analyses of at least TWO works.

Interpretations could be:

- **Pop-u-Luxe** inspired by Streamline Moderne/Consumerist style
Reaction to: Anti-Modernism (International Style)
- **Pop-u-Luxe** inspired by **Googie** inspired by Art Deco and Art Nouveau
Reaction to: Anti-Modernism (International Style)
- **Memphis** inspired by Anti-Design/Pop-u-Luxe
- **Anti-Design** inspired by Pop-u-Luxe and Googie
Reaction to: Anti-Modernism (International Style)
- **POMO** inspired by all of the above AND historical movements
- **DECON inspired by Russian Constructivism**
- The late International style and Consumer movement into the 1950's with Raymond Loewy and built-in obsolescence which continues into subsequent styles. In fact until the present!
- Pop-Luxe, specifically with regards to the use of plastics and a throw-away aesthetic, popular youth culture.
- The Anti-Design Movement, which, although critical of the materialistic culture, used a parody of the very movements they were rejecting, to promote their ideological aims.
- Memphis was fun, fashion, ephemeral, bright melamine plastic and meant to be a fad.

- The Hi-Tech movement also created an extensive ecological hazard with their creation of electronic advancement and technological creation of e-waste, which is highly bio-hazardous. Technotronic revolution, Dieter Rams and ABS plastics and electronic goods.
- PoMo encouraged the extension of plastic into a wide range of kitsch, fashion products, faux textures, melamine, formica and so on.

Example: Pop-Luxe movement

60's worldwide economic prosperity led to an overall sense of optimism that infused artistic sensibilities. Pop was coined in the 1950s to the emergence of popular culture. The influence of television, radio and advertising led to mass consumerism on a wide scale. Pop celebrates the popular consumer culture in America.

The teenager became one of the most important consumers. The design is also more youth-based and less serious when compared with the 'Good Design' of the 1950s. The desire was to express a youth culture in rebellion towards conservatism, the playful sub-culture revealed in Mary Quant's design of the 'miniskirt' and 'hot pants'. Youth identity and music culture became a main focus, and was reflected in patterns, motifs and materials like the designs of Panton working with op art psychedelia. Psychedelic wallpaper patterns frequently used in interiors and on furniture surfaces, for instance, in Panton's interior design for Der Spiegel's canteen. The red/orange highly saturated circles repeated all over the wall, floors and as the lighting detail, created an atmosphere of wild fun.

Pop departed from Modernism's safe, utilitarian mode of expression. A 'throw away' culture reflected Pop's rejection of the idea that designed objects needed to last forever, and introduced the idea of fashion and ephemerality. The concept of the 'throw-away' resulted from a reaction to tradition and durability. This was an 'age of affluence' – products were easily dispensable, expendable and gimmicky. Pop designers deliberately focused on a piece's disposability by using low-cost, flimsy materials. Characterised by such whimsical constructions as Peter Murdoch's disposable paper chair (1964), the furniture of the age was a cheap yet glamorous approach to contemporary design. Many surfaces of all products were brightly coloured, patterned, like the polka dots of Murdoch's chair.

The introduction of PVC in the mid-1960s was particularly suited to Pop Culture. With PVC new inflatable chairs, sofas, pillows appeared, even tables and lighting. Plastic and nylon fabrics in Mary Quant's fashion, the properties of plastic, a perfect example of 'use-it -today' and 'sling-it-tomorrow' ethos during the 1960s. Ease of mass production and development of consumerist style. Plastics were frequently used and tinted with colours of yellows, light blues, light greens, light purples and/or bold colours. Development of colour finishes and surfaces, development of plastics in Pop design. Verner Panton's S-chair, first mass-produced injection-moulded chair. ABS plastic, organic double parabolic curve for stability ... Eero Aarinen glob chair, pastilli chair, plastic blow chair by De Pas et al, Joe Columbo with his wide range of plastics like Universale chair.

The 'Blow Chair' (a blow-up lounge chair) by d'Urbino, Lomazzi and de Pas, 1967.

This Blow chair was cheap and could be discarded once popped. It parodied (made fun of) the idea of a solid, durable armchair by using see-through plastic. 'Techno-chic' made sculptural use of plastics. The chair is composed of simple inflated cylinders of PVC. This was used by the teen culture. Products were mass produced. Quality was not important, but quantity.

Memphis

1981 in Milan Italian Memphis group began as a spin-off from Studio Alchymia. A design collaborative led by Sottsass, Memphis was a reaction against the slick, black humourless design of the 1970s. It was a time of minimalism with such products as typewriters, buildings, cameras, cars and furniture all seeming to lack personality and individualism. Designers disagreed with and challenged conformist design approach. 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. Sottsass and his collaborators longed to be liberated from the tyranny of smart, but soulless 'good taste' in design. By glorying in the cheesiness of consumer culture, Memphis was 'quoting from suburbia,' as Sottsass put it. 'Form swallows function' Fred Baier 1981 Memphis Designers – Sottsass, De Lucchi, Bedine, Zandra Rhodes.

Their main aim was to reinvigorate the Radical Design movement, intended to develop a new creative approach to design. They drew inspiration from such movements as Art Deco and Pop Art, styles such as the 1950's Kitsch and futuristic themes. Critics challenged the non-conformist approach, called Memphis shocking, bright, polychrome, gaudy colours, plastic, vibrant, eccentric, ornamental, untasteful, eclectic influence from art deco and pop, kitsch and futuristic themes, historic forms, concepts in stark contrast to so called 'Good Design'.

Exhibited first in 1974 Milan, collection of home furnishings mainly clocks, lighting, furniture and ceramics. Experimented with unconventional materials, kitsch motifs, gaudy colours and prints. Eventually, Memphis style emerged, turning Modernist logic on its head with avant-garde and frivolous conceptions. 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. Other pieces of furniture and lights were made from industrial materials – printed glass, celluloids, fireflake finishes, neon tubes and zinc-plated sheet-metals – jazzed up with flamboyant colours and patterns, sangles and glitter. Ultrafragola mirror, superboxes and furniture for Poltrona.

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

Furniture made from flashy coloured plastic laminates emblazoned with kitsch geometric and leopard-skin patterns usually found in comic books and cheap cafes. 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. 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. A sense of humour and incongruity is common – Sottsass uses a tilted shelf to provide a sense of humour and incongruity – seems here to contradict the purpose of a shelf as a horizontal surface.

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.

QUESTION 6 (25 marks)

QUESTION TYPE/COGNITIVE SKILLS: Comprehension, Application, Analysis, Synthesis, Evaluation (25 marks)

LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

LO 3 AS 1.1 Make value judgments informed by a clear understanding of design.

LO 3 AS 1.2 Understand design theory and use design terminology correctly

LO 3 AS 1.3 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.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LEVEL: Higher (11 marks), Middle (7 marks), Lower (7 marks)

[25]

The answers to this question should refer quite clearly to:

- The **evolution of the Hi-Tech** movement from the 1970s into the contemporary era using appropriate examples.
- Identify the origins, characteristics and main factors contributing to the evolution of the movement,
- Facts should be substantiated, backed up with reference and discussion of a specific product and/or process.
- TWO relevant designers and their works must be discussed in detail.

Candidates can choose from a myriad of designers including:

Renzo Piano, Richard Rogers, Norman Foster, Dieter Rams, Jonatahn Ives, Santiago Calatrava. Discretion is required in the marking to allow for personal interpretation.

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

Exemplar essay

High-tech architecture, also known as Late Modernism or Structural Expressionism, is an architectural style that emerged in the 1970s, incorporating elements of high-tech industry and technology into building design.

The Hi-Tech movement grew out of a climate of technological advancement in the 1970s, as a result of developments in the aerospace and manufacturing industries. This reflected a renewed belief in the power of technology to improve the world and the style emerged as a utilitarianism that countered the excesses of the Pop era. The style was initially named by two design journalists, in the book 'High-Tech: The Industrial Style and Source Book for the Home' describing an emerging trend in interior and architectural design. Photographs documented how designers and architects were applying industrial materials and characteristics to products and structures.

High-tech architecture celebrated and incorporated elements of high-tech industry and technology into building design. **Richard Rogers and Renzo Piano's Centre Pompidou** in Paris is a radical design of an inner city cultural centre, which takes the form of a 7-story glass rectangle forming a superstructure, supported by a metal framework of steel girders and tie-beams anchored on cross-bars. This space frame exoskeleton has an industrial appearance resembling a prefabricated mecano-like structure. A vast internal space is freed up by placing the stairs and escalators between floors in a large plexiglass tube on the outside of the structure. The extensive glazing shows the outside world the activity going on inside this cultural centre, This building highlights one of the aims of high-tech architecture, to boast the technical elements of the building by externalising them. Colour-coded ducts are attached to the outside of the building: blue for air; green for fluids; yellow for electricity cables; and red for movement and flow (elevators) and safety (fire extinguishers). The technical aspects create the building's aesthetic.

The style could be seen in many architectural structures, all of which accentuated and externalised the building's technical and functional components, and used an orderly arrangement of pre-fabricated elements. **Richard Rogers' Lloyd's Bank Building** in London makes use of stainless steel sheeting and exposed pipes to create a 'nuts-and-bolts' aesthetic. **Norman Foster, in his Hong Kong and Shanghai bank** building uses a suspension technology and a skeleton of triangulated components.

These interior detailing of these architectural structures were fitted with furniture and fittings that used factory-produced industrial materials to create minimalist, linear forms - metal cladding, chemical glass, metal deck plate, restaurant supply fittings, factory and airport runway light fixtures, movers' quilts, industrial carpeting, etc. Technological instruments also became a common sight for people at the time because of the use of ramps, video screens, headphones, and bare scaffolds.

In terms of product design, **Dieter Rams** took the introduction of the microchip and housed it in pocket calculators, like his **ET 66 for Braun**, that used a minimalist, functionalist and rationalist aesthetic. At this time, word processors, videogames and other electronic devices were being developed by Microsoft and Apple. This industry has continued to grow enormously over the past 50 years. From the 1990s, **Jonathan Ives** would collaborate with Steve Jobs to revolutionise the electronic and digital products produced by Apple, making it the top international brand in 2012 with the **i-Phone, i-Pad** and myriad other products.

Renzo Piano has continued to design iconic buildings up to the present day. **The Shard and the California Academy of Sciences**. The Academy of Sciences San Francisco is a green museum in San Francisco's Golden Gate Park opened in 2008. The facility is a half a billion dollar building that makes use of some of the most high tech construction methods and sustainable materials. The Academy is a single structure but contains multiple venues, including the aquarium, the planetarium, the natural history museum and the 4-story rainforest. In addition, there's a 3D theatre, a lecture hall, a Naturalist Centre, two restaurants, an adjacent garden and aviary, a roof terrace, and an Academy store. Included in the building's design is a two and half acre living roof covering the massive building's surface. The building looks like a part of the park from some views. The building's aim was to become the greenest museum in the world.

In his efforts to make the greenest museum possible Piano is very concerned with energy efficiency and the building has a number of energy saving devices. The 2.5 acres of living roof will absorb nearly two million gallons of rainwater per year that would otherwise go down the drain. During heavy downpours when the living rooftop is at maximum capacity, water will be siphoned off the roof to an underground water table system that will siphon it back into the park. Piano was determined to build it without air conditioning. Through a complicated system of weather sensors that tell a central computer what motorised windows to open and close, the entire museum is cooled

with untreated outside air. Even the skylights automatically pop open to vent hot air. The undulating roofline brings cool air into the open courtyard at the centre of the building, naturally ventilating the surrounding exhibit spaces.

The Academy is now the largest public Platinum-rated building in the world, and also the world's greenest museum. The Academy earned the platinum rating (highest rating possible) for Leadership in Energy and Environmental Design (LEED). This commitment to sustainability extends to all facets of the facility - from the bike racks and rechargeable vehicle stations outside the building to the radiant sub-floor heating inside the building to the energy-generating solar panels on top of the building!

The Shard is a 95-storey skyscraper in London, the tallest building in the European Union, and the second-tallest in Europe, after Moscow's Mercury City Tower. The Shard contains premium office space, a hotel, luxury residences, retail space, restaurants, a five-storey public viewing gallery and a spa. In addition to the tower, major improvements are underway in the London Bridge rail and Tube station and the surrounding area; these improvements will include a new public concourse, as well as a public piazza, a museum, and local housing and regeneration programmes. The Shard has a crystalline façade transforming the London skyline with a multi-use 310 m (1,016 ft.) vertical city of high quality offices, restaurants, the 5-star Shangri-La hotel, exclusive residential apartments and the capital's highest public viewing gallery, The View from The Shard, offering 360° views. Well-connected and comprehensively serviced by central London's transport infrastructure, facilities and amenities, The Shard is a timeless reminder of the power of imagination to inspire change.

Norman Foster has continued to create architectural masterpieces, receiving an OBE and title as Baron Foster of Thames. Today, Foster + Partners works with its engineers to use computer systems. They pay attention to basic physical laws such as convection. They have created efficient buildings like the **Swiss Re London headquarters**. The walls let in air for passive cooling and then let it out as it warms and rises.

High-tech architecture appeared as a revamped modernism, an extension of previous ideas helped by even more technological advances. This category serves as a bridge between modernism and post-modernism, however there remain grey areas as to where one category ends and the other begins. In the 1980s, high-tech architecture became more difficult to distinguish from post-modern architecture. Many of its themes and ideas were absorbed into the language of the post-modern architectural schools.

QUESTION 7 (25 marks)

QUESTION TYPE/COGNITIVE SKILLS: Comprehension, Application, Analysis, Synthesis, Evaluation (25 marks)

LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

LO 3 AS 1.1 Make value judgments informed by a clear understanding of design.

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 1.3 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.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LEVEL: Higher (11 marks), Middle (7 marks), Lower (7 marks)

[25]

The answers to this question will vary substantially. However, all should refer quite clearly to the specific question.

In this essay, candidates should respond directly to the idea that Postmodernism is inherently democratic and is a reflection of the multicultural, multi-ethnic societies in which we now live.

They should define/use the terms multicultural and multi-ethnic.

They should discuss how eclecticism and revivalism is used in actual design examples.

THREE designs must be discussed.

Use the following information as guidelines:

PoMo

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.

Multiculturalism is an ideology that promotes the institutionalisation of communities containing multiple cultures. It is generally applied to the demographic make-up of a specific place. Different groups; social, cultural, political diversity; the doctrine that several different cultures (rather than one national culture) can coexist peacefully and equitably in a single country.

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.

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, tabletop 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.

A reaction to the sometimes wasteful mass-consumerism of the 60s resulted in an emphasis on reducing waste. The movement referred back to older styles in an eclectic and ironic (mocking) manner. Bauhaus has been humanised, e.g. Graves' Bauhaus-like triangular kettle with a bird whistle.

Functional objects have a playful, hip (absurd) use of colour. E.g. red, yellow and white – reminiscent of toy alphabet blocks and kindergarten toys. Combinations of geometric forms to create a shelf, which is reminiscent of a person (Sottsass). Pastiche – Patterns often mocked natural fur, (e.g. leopard skin) and industrial markings (e.g. cast non-slip plates). Metaphor was often used. E.g. Sottsass' sideboard has the shape of a mythical ('magical', rune-like) symbol. It looks like a man or monster figure.

Eclecticism (borrowing) is common. Motifs, e.g. Doric rectangular shapes are 'borrowed' from ancient sources like Greek, Roman and Renaissance architecture.

PoMo and development of plastic faux surface treatments and 80's, influence of Alessi and hi-end plastic products.

QUESTION 8 (25 marks)

QUESTION TYPE/COGNITIVE SKILLS: Comprehension, Application, Analysis, Synthesis, Evaluation (25 marks)

LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 3 AS 1.1	Make value judgments informed by a clear understanding of design.
LO 3 AS 1.2	Understand design theory and use design terminology correctly.
LO 3 AS 1.3	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.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LEVEL:	Higher (11 marks), Middle (7 marks), Lower (7 marks)

[25]

The answers to this question will vary substantially. However, all should refer quite clearly to the specific question. 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 in Deconstructivist design.

In this essay, candidates should respond directly to the statement that "Deconstructivism reflects the disintegration of our contemporary world and the fragmentation of society. However, it can be argued that deconstructing embraces the idea of reconstruction and reinvention as our society responds to changing states of reality." Candidates should make their position clear.

They should discuss how the main motifs in Deconstructivism can be interpreted.

TWO relevant designers and their designs must be discussed.

Use the following information as guidelines:

Rise of the digital era, the matrix

Proliferance of CAD/CAM

Developments of space-age materials and technologies like aerogel

Concept of 'dematerialisation' –

Deconstructivism – use of glass, new materials, insane geometry,

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

50 marks

SECTION C DESIGN IN CONTEXT (CONTEMPORARY)

Candidates answer TWO QUESTIONS from this section. They may include drawings and mind maps to support their answers.

Markers must check that candidates do not duplicate their discussion of specific designers in different questions.

QUESTION 9 DESIGN IN A CULTURAL CONTEXT

QUESTION 9.1 (3 marks)

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Comprehension (1 mark)

LO 3 AS 1.2 Understand design theory and use design terminology correctly

LEVEL: Lower (3)

The answer requires a clear explanation of this design slang term/colloquialism. One mark/substantiated relevant and correct point made.

Borax is a derogatory term applied to designs produced in America and Britain in the 1930s, '40s and '50s of adding surface details to household products, furniture and cars in an attempt to enhance their consumer appeal rather than their function. For instance, the use of gleaming chromium detailing and exaggerated tail fins on automotive styling cars, extravagant streamlining and over-embellished surface treatments such as those found on juke boxes. Cheap merchandise, especially tasteless furnishings.

Total possible marks – 3

QUESTION 9.2 (6 marks)

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Application (4 marks)

LO 3 AS 1.2 Understand design theory and use design terminology correctly

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LEVEL: Lower (2) Middle (4)

The answer requires that students understand the difference between the two terms, necessitating a comparative methodology. One mark should be awarded per credible definition, one mark for the clear understanding of the difference between terms.

Use the following definitions as guidelines:

9.2.1 Classic and Vintage

- Classic-timeless, belonging to the highest rank or class. Serving as the established model or standard: a classic example of colonial architecture. Having lasting significance or worth; enduring. Formal, refined, and restrained in style. Simple and harmonious; elegant: the classic cut of a suit; the classic lines of a clipper ship.
- Vintage-belonging to an earlier time, either restored or in usable original condition. The term vintage relates primarily to '*a period of origin or manufacture*'. *An item described as 'vintage' should speak of the era in which it was produced.* Vintage can mean an item is of a certain period of time, as in 'vintage 1950s' but it can also mean that the item exhibits the best of a certain quality, or qualities, associated with or belonging to that specific era. In other words, for the term vintage to accurately apply to it, an item should be somewhat representational and recognisable as belonging to the era in which it was made.' 'Vintage' should not be used in reference to objects less than 20 years old.

The term classic refers to designs that are timeless in their style, whereas vintage refers to a particular style.

9.2.2 Retro and Kitsch

- Retro is produced in the current time but harkening to an earlier time – 'relating to, reviving, or being the styles and especially the fashions of the past: fashionably nostalgic or old-fashioned.' Retro furniture may not actually be old but it references styles of the recent past.
- Kitsch – Art, objects, or design considered to be in poor taste because of excessive garishness or sentimentality, pretentious, but appreciated in an ironic way.

Retro is the application of past design styles to contemporary design, but kitsch refers to products that are overly embellished.

QUESTION 9.3 (6 marks)**QUESTION TYPE/COGNITIVE SKILLS: Knowledge (1 mark), Comprehension (1 mark)****Analysis (2 marks) Synthesis (1 mark) Evaluation (1 mark)**

LO 1 AS 2.1 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.

LO 2 AS 1.4 Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.

LO 3 AS 1.1 Make value judgments informed by a clear understanding of design.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LEVEL: Lower (2), Higher (4)

In this answer, candidates are required to give **three reasons**/justifications as to why craft-as-design should be supported by using at least TWO design examples. Credit must be given to any valid and reasonable answer. Marks should be allocated at ONE mark/substantiated fact.

Use the following as guidelines.

Justification for craft:

Employment creation for low-skilled workers who have traditional crafts background.

Craft uses mainly hand-labour, so there is reduced need for electricity/power and few industrial emissions (it is a **green technology**).

Craft often uses materials that are inexpensive, **reclaimed, recycled**.

There are many examples of designer-crafters that can be used as examples:

Local:

Zenzulu – Uses traditional Zulu Craft technique such as basket weaving.

Heath Nash – reclaims plastic waste.

Ardmore ceramics – using traditional coiling and slabbing pottery techniques

Nesta Nala – uses pit-fired ceramics

Haldane Martin – uses Zulu weaving techniques

Mielie – uses hooking and crochet techniques

International:

Campana brothers using traditional furniture-making skills in Brazil.

Tord Boontje uses traditional crochet, weaving skills in COOPA ROCA collaboration, glass cutting in tranSglass project.

QUESTION 9.4 (10 marks)**QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Comprehension (1 mark)****Application (2 marks), Analysis (2 marks) Synthesis (2 marks) Evaluation (1 mark)****LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.****LO 3 AS 1.2 Understand design theory and use design terminology correctly.****LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.****LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.****LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.****LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.****LEVEL: Lower (3), Middle (2), Higher (5)**

Candidates are required to discuss the work of **ONE** contemporary designer who creates designs that **revive the vernacular, conserve indigenous heritage** or pays **homage to our multicultural identity**.

The answer should clearly address how the designer **revives the vernacular, conserves indigenous heritage** or pays **homage to our multicultural identity**.

They must refer to at least **THREE** designs by the designer to substantiate their discussion, discussing **ONE** in detail.

ONE mark to be awarded per relevant fact/analysis.

Examples – Local:

Peter Rich	(Mapungubwe Interpretation centre/Alexandria Heritage Centre/Makuleke Cultural Project/The Mennel Pavilion)
Beverley Price	(Nespresso Collar/Ndebele range/Tin City range/Mapungubwe project)
Design Team	(Young at Heart Retro collection/Young at heart nostalgia/African Archive)
Peet Pienaar	(Afromag/Toffie Culture festival/Afro Coffee)
Garth Walker	(Constitutional Court typograph/Ijusi magazine/Impact printmaking conference)
Haldane Martin	(Zulu Mama Chair/Riempies range/Shongolo couch)

International:

The Campana Brothers	(favela chair/Melissa + Campana shoes and bag)
Marcel Wanders	(new antiques/crochet table/Zeppelin)
Demarkersvan	(Cinderella/laced fence/lightwind/industrialised wood)
Hella Jongerius	(Beads and Pieces/Flower pyramid/Chicle project)
Atelier Works	(Historic Property Restoration/Look brochure/cut book for Richard Morrison/Tate galleries signage)
Tord Boontje	(Come Rain Come Shine light – COOPA ROCA/Meta, Armoire/Meta, Fig leaf)

Answers may not be a repetition of any examples used in the question, or in any other answers in the paper. Examiners must take care to check that information has not been duplicated elsewhere.

One mark should be awarded per substantiated, relevant fact. Actual design examples must be discussed in detail and not only generic information should be used. Credit must be given to any valid and reasonable answer.

Haldane Martin – revives vernacular Zulu weaving techniques: Zulu Mama Chair, Riempies Range, Shongolo Couch

Martin uses unemployed women to use recycled plastic in construction of Zulu Mama; uses recycled plastic milk bottles, which cuts down on waste dumping. Unlike Martin, most mainstream manufacturers won't work with recycled plastic because it is not defined as 'virgin' plastic (pure new plastic). He has sourced a recycler and a plastic extruder and then got them to work together. Out-sources the weaving which creates jobs. The spiral weaving technique, which is unique to Southern Africa is a very durable weaving pattern and has created beautiful and organic shapes. This has great export potential, which will benefit the economy. He believes in working cooperatively which is also good for job creation. The Zulu Mama chair is sophisticated, contemporary and very comfortable. He creates collector's items which are satisfying people's need of aesthetics and functionalism; also uses riempie weaving technique in range,

Fernando and Humberto Campana, Brazilian Designers. Revive vernacular of Brazil (favela chair/Melissa + Campana shoes and bag)

Drawing inspiration from Brazilian street life and carnival culture, the brothers FERNANDO AND HUMBERTO CAMPANA combine found objects – such as scraps of wood and fabric off-cuts – with advanced technologies to create a vibrant, energetic and definitively Brazilian approach to design.

Central to their practice is the importance of materials. The challenge, as the Campanas see it, is to transform something poor into something decadent and opulent. Inspired by Brazilian street life and carnival culture, the brothers combine found everyday objects such as scraps of wood and furry toys-with advanced technology to create a vibrant, energetic and specifically Brazilian approach (a busy, ostentatious, vibrant 'carnival' lifestyle) to design. Their cues come from everyday scenarios and unexpected combinations of found materials – such as rubber hose, tissue paper, string or fabric. Fernando and Humberto Campana transform mundane materials into objects that celebrate the discarded and are instilled with the spirit of contemporary Brazil that embraces the need for responsible design practice in improving our environment.

In the Vermelha chair, the brothers tie and weave an abundance of brilliantly coloured cord through a metal frame. 'We always say that first comes the material, then the form and finally we elaborate the function of the product by studying its ergonomics, limitations and capabilities.

The streets of São Paulo are a sort of laboratory for our designs. Whenever we need inspiration, we rely on the chaos and beauty of the city we live in. A good example of this is the Vermelha chair. The idea emerged when we bought a large bunch of rope from a street stall and brought it back to the studio. When we placed it on a table, we observed it deconstructing before our eyes. At that moment we both looked at each other and almost simultaneously remarked: 'This is the chair we want to build. It is a representation of Brazil in its beautiful chaos and deconstructiveness.' To replicate this deconstruction in the chair, we were careful to study the construction of the mess of ropes.'

Their Sushi chair transforms strips of brightly coloured plastic and carpet underlay into decorative rolls which then 'upholster' a basic frame. In the Favela Chair, wood, 1991, they have created a truly unique, environmentally conscious chair by using discarded waste wood. Inspired by the haphazard and chaotically built shanty towns of São Paulo, the Campanas designed a chair using similar construction techniques, i.e. Favela chair from scraps of wood they found on the streets. The result is an intricately fabricated chair, carefully assembled piece – by – piece using hundreds of recycled components. The end result means that this design does not impact on the ecology as trees do not have to be cut down for production. In this regard, discarded wood pieces are used in a creative way to create a sustainable design solution that also looks good. This process of transformation has injected a new energy into contemporary design by presenting a bold, vibrant alternative to the rationalist ideals of the long dominant European modern movement.

The material tradition of Brazil is based on craftsmanship and economy of means. By experimenting with high and low tech materials and using artisanal techniques, the Campanas are able to harness the energies of their inherited tradition while defining a new aesthetic based on experimentation and advanced technologies.

They have also created a fresh and surprising way of looking at things. By weaving the fabric of São Paulo into their objects, the brothers present a very personal portrait of their city. 'Our designs were born in the street, from the urban kitsch of the popular quarters and contact with nature,' they say. 'Whenever we can, we go back to our farm. Nature revitalises our ideas.'

Exemplar Peter Rich – conserves indigenous heritage

Mapungubwe Interpretation centre/Alexandria Heritage Centre/Makuleke Cultural Project/The Mennel Pavilion.

Johannesburg-based Peter Rich was awarded the 'Oscar' of World Architecture for the Mapungubwe Interpretation Centre in Limpopo Province. Rich was named winner for the category of Culture: World Building of the Year award at the 2009 World Architecture Festival held in Barcelona in November 2009. The Mapungubwe Interpretation Centre, commissioned by South African National Parks (SANParks) three years ago, is an important building for South Africa. It was constructed on a site with great historical and archaeological significance in the Mapungubwe National Park, in the Limpopo Province.

Mapungubwe is being hailed as South Africa's Lost City of Gold. Mapungubwe is an area of open savannah at the confluence of the Limpopo and Shashe Rivers and abutting the northern border of South Africa and the borders of Zimbabwe and Botswana. One thousand years ago, Mapungubwe was the centre of the largest kingdom in the subcontinent, where a highly sophisticated people traded gold and ivory with China, India and Egypt. The Mapungubwe Landscape was declared a World Heritage Site on 3 July 2003.

Mapungubwe Hill means 'place of jackals'. It is a sandstone hill, with vertical cliffs about 30 metres high and a plateaued top approximately 300 m in length. The hill was inhabited for about seventy years between 1220 AD and 1290 AD by an advanced culture of people for the time – the ancestors of the Shona people of Zimbabwe. The Iron Age site, discovered in 1932 but hidden from public attention until only recently, has been declared a World Heritage Site by the United Nations Educational, Scientific and Cultural Organisation (Unesco). The site has been excavated by the University of Pretoria who now has a rich collection of artefacts made of gold and other materials, as well as human remains, discovered there.

The most spectacular of the gold discoveries is a little gold rhinoceros, made of gold foil and tacked with minute pins around a wooden core. The rhino, featured in one of South Africa's new national orders – the Order of Mapungubwe – has come to symbolise the high culture of Mapungubwe. The rhino is also a symbol of leadership among the Shona people of Zimbabwe. Other artefacts made in similar fashion include the Golden Sceptre and the Golden Bowl, found in the same grave on Mapungubwe Hill.

'The jury voted for the Mapungubwe Interpretation Centre because it was the most 'architecturally and psychologically powerful' project of all. Rich adds that the building's authenticity was also an important factor. 'What drew people to the building is that it evokes the same sentiments one experiences when walking into a ruin – a deep sense of history and emotion,' Rich says.

The complex landscape was both the inspiration for the design and the source of most of the materials for its construction. The Centre is situated at the confluence of the Limpopo and Shashe rivers. The interpretation centre is set on the side of a mesa, formed from the dramatic geological events that resulted in the Limpopo river changing its course from flowing into the Atlantic ocean to discharging into the Indian ocean. The ceremonial centre of this civilisation is located on a sister mesa, one kilometre away from the site, and is the visual climax of the architectural experience orchestrated in the design of the centre.

Its significance called for a unique design approach – particularly as it would house artefacts from the region's prehistory. 'The architecture needed something special. You couldn't just have gum poles and thatch to display gold and artefacts. I wanted it to be a piece of landscape, not a building,' Rich explains. It is also not in keeping with a particular fashion and style. 'One person aptly described it as something that looks like it has grown out of the ground,' he says.

This resulted in a composition of structures that are authentically rooted to their location. The equilateral triangle provides the primary ordering, set out from a line running parallel to the contours. Secondary elements are fixed in position by this geometrical system, significant because of its reference to triangular motifs etched on stones uncovered on Mapungubwe hill.

The heart of the interpretation centre is visually contained by two hollow cairns that evoke the route-markers found in southern African cultures. Timbered vaulting is used to construct the billowing forms that expose the arched edges of their thin shells, an analogy of the archaeological revelation of past cultures. The domical language is contrasted by the delicate walkways that create a zigzagging ramped route through the complex. The visitor's first view, across a seasonal stream, is of the principal vaults springing directly from the land on robust buttresses.

The arrival point is marked by the first of the hollow cairns, lit by an oculus that tracks the path of the sun. The experience of the internal exhibition space is cavernous, articulated by the exposed tiles made from the local soil. Light is filtered through fused coloured glass, with dappled patterns reflected from the ponds that cool the air that naturally ventilates the buildings.

The termination of this central space is a second cairn, representing the sunset and housing the golden rhinoceros that has become a southern African icon. Visitors have a choice of route: ramp and stair, internal and external, to move into the upper parts of the vaults and appreciate the privileged view of the lower volume, as did the ancestors from their elevated position on the plateau of the hill. Volumes are linked by terraced seating, contrasting the structured horizontality of the contours with the diaphanous domes and arches.

The route continues outside the covered spaces, leading to the highest part of the site and affording a view across a flat expanse to Mapungubwe hill in the distance, with its backdrop of the Limpopo.

The route provides the visitor with a multiplicity of experiences, evoking the complex social interactions of the many cultures that have traversed the site. The surfacing of all of the masonry in local rubble stone creates a timeless quality. It is as if they had erupted from the earth in a geological event similar to that which created the mesas of the site and Mapungubwe hill. The dome shaped roof is made from tiles that have been constructed with local soil.

The strong southern light is tempered by rusted steel screens that echo the network of branches of indigenous trees; horizontally slatted natural timber evokes traditional shade structures.

Rich only used carbon-friendly construction methods, because the sustainability component of the project was important. He emphasises that this decision wasn't motivated by green building trends, but to highlight the vulnerability of the local ecology. 'The green concept of building should become the standard. Architects shouldn't be patted on the back for it,' he says. The building has an 80% lower carbon footprint compared to conventional buildings, as most of the materials used for the roof and cladding are from the site.

The project's agenda extends beyond the presentation of the area's history to awaken an understanding of the vulnerability of the local ecology. This is a poverty relief project using ecological methods and materials. These objectives are manifested in the construction process of the Centre in which unemployed local people were trained in the manufacture of stabilised earth tiles and in building the vaulting.

Local stonemasons were employed to clad the building and unemployed people were trained in the manufacture of stabilised earth tiles and in building the Timbrel vaults. This is a long-forgotten construction technique using interlocking terracotta tiles to construct self-supporting arches.

**Garth Walker – pays homage to our multicultural identity.
Ijusi, Concourt signage, Impact conference**

Garth Walker trained as a graphic designer and photographer at Technikon Natal in Durban in the mid-1970s. After studying graphic design, Walker formed one of the most well-known design studios, Orange Juice, in 1995.

Inspired by his immediate environment of Durban and KwaZulu-Natal, Walker created a corporate international design style but with an African element. According to Walker, 'we really have been pioneers in the mythical 'African' design language'. Walker's influence is gleaned from documenting what he called the 'world around him' with an emphasis on 'street design', and the emerging graphic styles of Durban's pavement traders, the ordinary street people, townships and street graphics. He photographs all the visual elements and uses these in his designs.

Our visual language is our most powerful traditional weapon. It's our tool of change. His work has also been published in over 100 books internationally and his work is still exhibited worldwide. The recipient of over 60 local and international awards, Garth has been profiled in I.D. magazine under the headline 'International Global top 40'. He is now running Mr Walker Design Studio. So what is African design? With camera in hand, Walker traverses sections of Durban most white guys wouldn't dare drive. He's in search of Indian drag racing and Zulu memorial sites, anything that suggests the mixed-up hybrid identity that Walker believes makes South Africa so compelling.

The material uncovered on these meanderings often appears in Ijusi as is, not sterilised in any way. For him, it's imperative to take a hard look at the so-called 'African Renaissance' and move beyond simplistic notions of Africa, pervasive here and abroad. Durban really is a 'fruit salad' of everything, everywhere, countrywide.'

In 1995, Orange Juice published the first issue of their experimental graphics magazine, I-Jusi. Now something of an institution, *i-jusi* (from the Zulu for juice) has been widely praised for the way it vigorously promotes and encourages an intelligent, dissident voice and a design language rooted in the South African experience. The magazine has been exhibited in over 25 countries and is held in the collection of MOMA, the Victoria and Albert Museum and Bibliothèque Nationale d'France.

The strictly non-commercial 16-page A3 magazine is published in a limited print run of 500 copies per issue. In the spirit of *ubuntu* (we exist relative to one another) the *i-jusi* production team all contribute their services gratis. *i-jusi* has been exhibited in 8 countries, has won countless design awards and been featured in most of the world's graphic design magazine.

Creatives from all disciplines are encouraged to experiment in freedom their personal views on 'I am an African ...' *i-jusi* aims to encourage and promote South African graphic design to interested creatives and writers worldwide. The *i-jusi* initiative is part of Orange Juice Design's commitment to developing a design language rooted in the African experience. Paging through the *Ijusi edition* – 'South African Stories' – one finds design, photography and writing inspired by and interpreting local culture: muthi-markets, street-side barber tents, and the signage of day labourers seeking work.

Published four times a year, each *i-jusi* issue is themed on topics relevant to contemporary South Africa. Designers, design students, illustrators, photographers and writers are encouraged to create in total freedom and to explore their personal views on life in a free and democratic South Africa. The three-part collaboration with *Bitterkomix* was recently acquired by MOMA's permanent design collection in New York.

With recent issues of *i-jusi* focusing on death, religion, pornography, and street style, the reader is presented with a vision of a Third World country in a monumental struggle. South Africa has the usual problems of an 'economy gone south,' a falling job market, debates on privatisation, education, housing and health care. But Walker adds, 'our biggie is crime which affects everyone (including fraud and bribery in the public sector), and AIDS (highest in the world).'

There has also been a consistent migration into South Africa from other African countries adding to overpopulation in the cities. These issues are reflected in *i-jusi* and sometimes offered with a sardonic twist, low-ball humour, scathing commentary, or personal soul baring combined with visual motifs and idiosyncratic iconography that blatantly could come from nowhere else. Walker admits that design confrontational content for social comment is still a small movement.

Number 8 Black and White Issue Walker's own perspective on South Africa is that it is 'a land with no 'grey': things are black and white. It's a land where the animals may be beautiful, but eat you, where you may have a gun in your ear since someone may want your running shoes or your car.' Through *i-jusi*, Walker presents a vision for a new South Africa where the black and white, multi-cultural, multi-lingual, multi-dimensional diversity of this place has a voice. Walker's approach to his exhibition for the 2008 Saint-Étienne Design Biennale is provocative and confrontational.

Working from the theme of Africa in 2036 (chosen by the festival as it is a twin calendar year of 2008), Walker deferred from depicting 'people running around in silly outfits, playing on their cell phones that can also poach eggs', rather showing a hard-core futuristic Africa in all its glorious wretchedness.

Inviting two other South Africa designers – Wilhelm Kruger and Brandt Botes – to help fill an exhibition space that could fit a few kombis, the work is an indictment of the continued platitudes that perpetuate the myth of Africa. Taking a hair-raisingly cynical approach, the work engages directly with what the three perceive will still be threats in 18 years' time – the spread of HIV/Aids, the never-ending war on terror, the hustling nature of the new political business elite, the self-perpetuating weapons trade, and the neo-colonialist economic power of China and India.

Walker and his co-artists employ a number of fictional characters to vitalise the politically incorrect narrative: Jabu Ndlovu, a young Zulu designer and disillusioned activist; the Betrayed Boer, a right winger for whom everything went up in smoke; and the Cynical Columnist, a French African from Senegal who's living in France because the mother country didn't deliver the dream he thought it would.

The Jabu character takes the lead, representing the South Africans of all races who tend to forget about the struggle, romanticise the benefits of apartheid and generally feel that their expectations have been sold out. Walker explains: 'By 2036, the G8 will have become the G13, including South Africa. We would have sold out and become complicit in the exploitation.'

Walker was also commissioned to create the typography and signage for the Constitutional Court in Johannesburg.

QUESTION 10 DESIGN IN AN ENVIRONMENTAL CONTEXT

QUESTION 10.1 (3 marks)

QUESTION TYPE; COGNITIVE SKILLS: Knowledge (2 marks) Application (1mark)

LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LEVEL: Lower (2 marks) Middle (1 mark)

Candidates select ONE of the sets of terms and explain the difference between the two terms, necessitating a comparative methodology. One mark should be awarded per credible definition, one mark for the clear understanding of the difference per question.

Use the following definitions as guidelines:

10.1.1 Repurposing and upcycling

- Repurposing is when a designer takes an existing object and uses it in a new context or use. For instance, adapting an old suitcase to become a storage cabinet.
- Upcycling involves the remanufacturing of a material into a different product with a different material-use cycle. For example: a PET bottle made into fibres for high performance polyester clothing, which itself can be recycled. Creative designers and artists are perhaps the most inventive when it comes to upcycling or creating new products from old waste.

A growing number of designers upcycle waste materials such as car window glass and recycled ceramics, textile offcuts from upholstery companies, and even decommissioned fire hose to make belts and bags.

10.1.2 Biomimesis vs biomorphism

- Biomimesis is the examination of nature, its models, systems, processes, and elements to emulate or take inspiration from in order to solve human problems. The term *biomimicry* and *biomimetics* come from the Greek words bios, meaning life, and mimesis, meaning to imitate. Other terms often used are bionics, bio-inspiration, and biognosis.
- Biomorphism is the use of biological-inspired forms that are rounded and organic.

Maximum number of marks – 3

QUESTION 10.2 (2 marks)

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (1 mark), Comprehension (1 mark)

LO 2 AS 1.4 Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.

LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.

LEVEL: Lower (2)

Candidates to explain the concept of cradle to cradle. One mark/substantiated fact. Use the following as a guideline.

Cradle to cradle is a material use cycle that seeks to eliminate waste and/or and virgin resource extraction through the creation of closed/continuous loops. Cradle-to-Cradle traces a material from the time it is extracted to the point at which it is recycled/reclaimed.

Maximum number of marks – 2

QUESTION 10.3 (6 marks)

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Application (2 marks), Analysis (2 marks)

LO 2 AS 1.4 Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.

LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.

LO 3 AS 3.2 Demonstrate an understanding of responsible design by taking into account human rights and environmental issues throughout the process.

LEVEL: Lower (2), Middle (2), Higher (2)

Answers to this question will be diverse and marking should allow for a range of different answers. Marks to be awarded as:

- ONE mark for relevant material or technology.
- TWO marks for an explanation of properties/characteristics.
- TWO marks for an explanation as to why the material is sustainable.
- ONE mark for the name of a design product that uses the material/technology.

Example:

Bioplastics are plastics derived from renewable biomass sources, such as vegetable oil or cornstarch. Bioplastics are used in the creation of many modern products like tractors, water bottles, and takeaway cutlery. Ecoware is a line of bio plastic dishware by British designer Tom Dixon is made of a bio-degradable plastic from bamboo fibre. The line comes in a rich chocolate colour and is sustainably made from 85% bamboo with a binder made from a water-soluble polymer. After 5 years the Ecoware objects can be composted back to the earth.

Other examples could refer to:

New forms of energy

XYZ – Freeplay radio/sOccket/Microbial fuel cell

Yves Behar-Scoot hydrogen powered bike/OLPC

Maximum number of marks – 6**QUESTION 10.4 (4 marks)****QUESTION TYPE/COGNITIVE SKILLS: Knowledge (4 marks)**

- LO 3 AS 1.4** Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
- LO 3 AS 1.5** Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
- LO 3 AS 2.1** Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.
- LO 3 AS 2.2** Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.

LEVEL: Lower (4)

This answer requires that candidates identify TWO contemporary designers who have reinterpreted, reinvigorated or reused products, materials, methods or techniques.

ONE mark to be awarded for correctly identifying a designer.

ONE mark to be awarded for correctly naming an appropriate and correct design work.

Once again, there are many designers that could be used in this answer. One mark to be awarded for each the name of a relevant designer and another mark each for a product.

Ryan Frank – Strata Range/Hackney Range/Zig storage

Heath Nash – Colourball light

Campana brothers – Favella chair

Tord Boontje – tranSglass

Maximum number of marks – 4

QUESTION 10.5 (10 marks)**QUESTION TYPE/COGNITIVE SKILLS: Knowledge (2 marks), Comprehension (2 marks)****Application (2 marks), Analysis (2 marks) Synthesis (1 mark) Evaluation (1 mark)**

LO 1 AS 2.1	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.
LO 2 AS 1.4	Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.
LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 2 AS 3.2	Understand the health and environmental implications related to the use of materials.
LO 3 AS 1.1	Make value judgments informed by a clear understanding of design.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LO 3 AS 2.1	Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.
LO 3 AS 2.2	Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.
LO 3 AS 3.2	Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.
LEVEL:	Lower (4), Middle (2), Higher (4)

Candidates are required to identify a designer who re-interprets nature in some way in their work. Leeway should be allowed for differing interpretations of using nature. There are many designers who can be used in this answer.

- Reinterpreting natural materials
- Reinterpreting natural shapes/forms
- Reinterpreting natural systems

Candidates must mention at least **THREE** works and discuss **ONE design** in detail.

Examples suggested in the PAT task include:

Andy Horn (House Prinsloo/House Brodie/House Morris/Niewoudtville caravan park)
 Porky Hefer (Nest with Society for the Blind/Found Objects (Swarm series)/Lite/Black Hole tyre swing with Nelson Banderson)

International:

Zaha Hadid (Zaragoza bridge pavilion/London Aquatics Centre/Melissa shoes/Dubai Opera house)
 Castor Design (Sauna box/Recycled Tube light/Blind Stool)
 Gary Harvey (Newspaper dress/Levi 501 corset dress/camouflage dress)
 Gary Harvey (Newspaper dress/Levi 501 corset dress/camouflage dress)
 Vincent Callebaut (Lily pads/Dragonfly/Perfumed jungle)
 Tord Boontje (TranSglass/Come Rain/garland light)

Ronan and Erwan Bouroullec (Algue for Vitra/Cloud for Capellini/Joyn for Vitra/Corniches for Hay)

Answers may not be a repetition of any examples used in the question, or in any other answers in the paper. Examiners must take care to check that information has not been duplicated elsewhere.

One mark should be awarded per substantiated, relevant fact. Actual design examples must be discussed in detail and not only generic information should be used. Credit must be given to any valid and reasonable answer.

Example: Yves Behar and the Fuse Project

Behar incorporates environmental sustainability with social sustainability. Behar states: 'To create a sustainable future, design must be deeply in tune with human needs, deeply connected with emotional needs, deeply self-expressive. Human needs include a healthy environment, which means that the products have to be non-toxic as well as low-energy-consuming.'

For Herman Miller, recently developed the LEAF light, a light that consumes 40% less energy than a compact fluorescent light bulb. Behar designed both the light source and the light. The light includes the ability to switch from an efficient colder light to a warmer mood glow. Leaf is a sculptural-looking creation made of two slim torqued aluminium parts. The arm is anchored by a solid disk containing a PC board; atop it are controls similar to the iPod's touch wheel. Slide your finger along the edge one way and the light glows golden; slide it the other way and the lamp emits the sort of pure white light that graphic designers need to run colour tests. (In technical terms, it goes from 5 500 to 2 500 Calvin on the heat spectrum.) The dimmer works the same way; and a tap at the centre, right on the backlit Herman Miller logo, turns the light on and off.

A grid of LEDs is fixed onto the head of the light. Heat-the number-one problem with using LED technology – is dissipated using a series of 'chimneys,' little holes that allow it to escape. A three-layer heat sink – backed by copper and aluminium – keeps the temperature below a manageable 60 degrees Celsius.

LEAF is about giving a full spectrum of choices to express light's magical and sensory variations. The human senses are engaged through a touch-sensitive interface allowing infinite choices of the light effect: from a cool colour spectrum for an efficient work light to a warm colour for a reflective mood, as well as the continuous adjustment from bright to dark. This poetic interaction follows a principle of 'technology with humanity' and is achieved through the use of compact LEDs rather than halogen or fluorescent bulbs.

Unlike other LEDs that burn hot and require complicated cooling systems, LEAF stays cool to the touch through the use of a patented heat distribution system that we developed with an engineering group, achieved through an engineered heat sink and the stamp-formed, sculptural aluminium blade that allows heat to be dispersed and released without the use of a cooling fan. This literally allows you to grab the light without any worry of burning your hand.

Environmentally speaking, LEAF's sculptural form was created to minimise material use and mechanical complexities while maximising light options. Its LEDs consume between eight and nine watts of power, carry a 60 000-hour lifespan at full power (about seven years in continuous use), and cut energy use by 40% when compared with standard CFLs.

The steel components of LEAF contain approximately 25% recycled content and are 100% recyclable as a technical nutrient. All die-cast aluminium components are made from 100% recycled material. Aluminium components can be segregated and returned to the recycling stream as a technical nutrient. Plastic components are identified with an ASTM recycling code whenever possible, to aid in returning these materials to the recycling stream. LEAF's packaging materials include corrugated cardboard and a polyethylene plastic bag to protect it from soiling or dust. Each of these materials is part of a closed-loop recycling system.

Maximum number of marks – 10

QUESTION 11 DESIGN IN A SOCIAL CONTEXT**QUESTION 11.1 (2 marks)****QUESTION TYPE; COGNITIVE SKILLS: Knowledge (2 marks)**

LO 1 AS 2.1 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.

LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LEVEL: Lower (2 marks)

This answer expects that candidates list the name of a designer that has produced a design contributing to HIV prevention and awareness. ONE mark to be awarded for the correct name of the designer and ONE mark for the correct name of the design itself. No justification needed.

Examples:

... xyz – Pronto Condom

Brown cow studio – UWC HIV Awareness campaign

NIKE Foundation – RED campaign

Total possible marks – 2**QUESTION 11.2 (4 marks)****QUESTION TYPE/COGNITIVE SKILLS: Knowledge (1 mark), Comprehension (1 mark), Analysis (1 mark) Evaluation (1 mark)**

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LO 3 AS 2.1 Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

LO 3 AS 2.2 Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design

LO 3 AS 3.2 Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.

LEVEL: Lower (2), Middle (1), Higher (1)

Candidates need to define anthropometrics and ergonomics and briefly discuss how they are used in design for disability or special needs.

ONE mark to be awarded for correct explanation of ergonomics.

ONE mark to be awarded for correct explanation of anthropometrics.

TWO marks to be awarded for the discussion of how both concepts are used in design for disability or special needs.

Use the following as a guideline:

Anthropometrics literally means man (anthro) measurements (metric). It is the measurement of the size and proportions of the human body, as well as parameters such as reach and visual range capabilities.

Ergonomics (also known as Human Factors) is a multidisciplinary scientific discipline concerned with the understanding of interactions among humans and other elements of a system to optimise human well-being, overall system performance and reducing human error.

Anthropometrics enables us to properly size items for people who have movement disabilities to 'fit' the user. It also enables us to efficiently manufacture prosthetics for a standardised system. Ergonomists are able to design products that are comfortable and work efficiently.

Total possible marks – 4

QUESTION 11.3 (9 marks)	
QUESTION TYPE/COGNITIVE SKILLS: Knowledge (3 marks), Application (2 marks), Analysis (2 marks) Evaluation (2 marks)	
LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LO 3 AS 2.1	Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.
LO 3 AS 2.2	Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.
LO 3 AS 3.2	Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.
LEVEL:	Lower (3), Middle (2), Higher (4)

The answer to this question necessitates that candidates specify THREE design examples, relating them to the issues of urban renewal and urban planning; transportation and urban mobility; equitable access and social regeneration.

Marks should be allocated for:

ONE mark for the correct name of a design and the designer's name. If only one of these is present, award half a mark

ONE mark for a brief description of the design.

ONE mark for the explanation of how the product addresses one of the above issues.

The range of designers used for this answer will be dependent on the specific case studies that the candidate has focused on.

Examples could be:

MMA	(/10 × 10 Housing);
Petzer and Jonker	(Hippo water roller);
Mohammed Bah Abba	(Pot-in-Pot cooler);
Tsai Design Studio	(Safmarine Sports Container/Vissershok school/nested bunkbeds)
...XYZ	(your street sign/pronto condom/monitor freeplay)
Mokena Makeka	(CT Station/Greenpoint stadium/Retreat SAPS/PTSSC Athlone)
Monkeybiz	(Women's Empowerment Beading Project – identify specific examples)

International:

Shigeru Ban	(Paper house, Lake Yamanaka/Kobe catholic Church and refugee housing/Christchurch Cathedral)
Vestegaard Frantzen	(Lifestrav/Permanet/Carepack)
Yves Behar	(OLPC/Y-water/Scoot)
Wieden + Kennedy	(The Girl Effect/Honda Grr commercial/Nature City for MOMA exhibition 'Foreclosed: Reassembling the American dream')
Maya pedal	(Bicycle Mill/Blender/mobile water pump)

Total possible marks – 9**QUESTION 11.4 (10 marks)**

QUESTION TYPE/COGNITIVE SKILLS: Knowledge (3 marks), Application (2 marks), Analysis (3 marks) Evaluation (2 marks)

LO 1 AS 2.1	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.
LO 2 AS 1.4	Demonstrate an awareness of the various materials and production processes relevant to the chosen discipline/s.
LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LO 3 AS 2.1	Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.
LO 3 AS 2.2	Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.
LO 3 AS 3.2	Demonstrate an understanding of responsible design by taking into consideration human rights and environmental issues throughout the process.
LEVEL:	Lower (3), Middle (2), Higher (5)

This answer requires that candidates select a designer (or design project) that has made the world a safer place to be by providing access to basic human rights like water, shelter or food security. Marks should be awarded for:

Name of the designer
Outline their aims and stylistic characteristics,
mentioning at least THREE works and
discussing ONE design in detail.

Examples could be:

Local:

Tsai Design Studio (Safmarine Sports Container/Vissershok school/nested bunkbeds)
 ... XYZ (your street sign/pronto condom/monitor freeplay)
 Mokena Makeka (CT Station/Greenpoint stadium/Retreat SAPS/PTSSC Athlone)
 Monkeybiz (Women's Empowerment Beading Project – identify specific examples)

International:

Shigeru Ban (Paper house, Lake Yamanaka/Kobe catholic Church and refugee housing/Christchurch Cathedral)
 Vestegaard Frantzen (Lifestraw/Permanet/Carepack)
 Yves Behar (OLPC/Y-water/Scoot)
 Wieden + Kennedy (The Girl Effect/Honda Grr commercial/Nature City for MOMA exhibition 'Foreclosed: Reassembling the American dream')
 Maya pedal (Bicycle Mill/Blender/mobile water pump)

Total possible marks – 10

Answers may not be a repetition of any examples used in the question, or in any other answers in the paper. Examiners must take care to check that information has not been duplicated elsewhere. One mark should be awarded per substantiated, relevant fact. Actual design examples must be discussed in detail and not only generic information should be used. Credit must be given to any valid and reasonable answer.

QUESTION 12 DESIGN IN A BUSINESS CONTEXT

QUESTION 12.1 (5 marks)

QUESTION TYPE; COGNITIVE SKILLS: Knowledge (2 marks), Analysis (1 mark) Application (2 marks)

LO 2 AS 1.8 Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 1.4 Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.

LO 3 AS 1.5 Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

LO 3 AS 3.1 Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.

LEVEL: Lower (2) Middle (2) Higher (1)

Candidates are required to explain what the marketing mix is (Product, Price, Promotion, Place) by referring to a specific design.

ONE mark to be awarded for a general definition of the marketing mix.
 The marketing mix involves the **strategic co-ordination** and planning of the interaction of the right components to get your product noticed and sold in the global marketplace.

To be awarded marks for the 4 components (Product, Price, Promotion, Place), the candidate must **substantiate** the elements by referring to a specific design product. For example:

	Apple	Puma
Product	High end technology, communications products appeals to professional/educated demographics	Sports and leisurewear, sports apparel Sporty, casual, younger target market
Price	High end, customers prepared to pay high prices	Middle to high range because of lots of competition
Promotion	Subtle Slick minimalist packaging in neutral tones, understated, emphasise quality, satin-finish	Sponsorships, Events, billboard advertising, use of flashy red colour, neon lights
Place (distribution)	Customised branded retail stores in upmarket shopping centres near offices	Nomad stores near current events

If the answer only lists the 4 terms Product, Price, Promotion, Place, ONLY 2 marks are to be awarded.

QUESTION 12.2 (4 marks)	
QUESTION TYPE; COGNITIVE SKILLS: Knowledge (2 marks), Analysis (2 marks)	
LO 3 AS 1.2	Understand design theory and use design terminology correctly.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 3.1	Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.
LEVEL:	Lower (2) Middle (2)

Candidates need to clearly explain the difference between guerrilla marketing and viral marketing. One mark to be awarded for the correct definition, another for an example/per substantiated fact. Use the following as a guideline.

Guerrilla marketing is an advertising strategy using low-cost surprise or atypical tactics to promote an unconventional interaction with a product or idea. The concept of guerrilla marketing was invented as an unconventional system of promotions that relies on time, energy and imagination rather than a big marketing budget. It includes graffiti, sticker bombing, flash mobs, street giveaways of products, PR stunts, or any unconventional marketing intended to get maximum results from minimal resources.

Viral marketing is a marketing technique that uses social networks and technology to increase brand awareness as consumers spread the word through mail messages, etc. **Viral marketing** is a marketing techniques that use pre-existing social networks and other technologies to produce increases in brand awareness or to achieve other marketing objectives (such as product sales) through self-replicating viral processes, analogous to the spread of viruses or computer viruses.

It can be delivered by word of mouth or enhanced by the network effects of the Internet and mobile networks. Viral marketing may take the form of video clips, interactive Flash games, advergames, ebooks, brandable software, images, text messages, email messages, or web pages. The most common utilised transmission vehicles for viral messages include: pass-along based, incentive based, trendy based, and undercover based. However, the creative nature of viral marketing enables 'endless amount of potential forms and vehicles the messages can utilise for transmission' including mobile devices.

The ultimate goal of marketers interested in creating successful viral marketing programs is to create viral messages that appeal to individuals with high social networking potential (SNP) and that have a high probability of being presented and spread by these individuals and their competitors in their communications with others in a short period of time.

QUESTION 12.3 (2 marks)

QUESTION TYPE; COGNITIVE SKILLS: Knowledge (1 mark), Application (1 mark)

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 3.1 Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.

LEVEL: Lower (1) Higher (1)

One mark to be awarded for the correct definition, another for an example/per substantiated fact. Use the following as a guideline

Trend forecasting is the prediction of future trends in design by analysing current buying behaviour and future events. Manufacturers and retailers use trend forecasters like Li Edelkoort to pre-empt seasonal buyer behaviour in terms of trends and volume.

QUESTION 12.4 (2 marks)

QUESTION TYPE; COGNITIVE SKILLS: Knowledge (2 marks)

LO 3 AS 1.2 Understand design theory and use design terminology correctly.

LO 3 AS 3.1 Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.

LEVEL: Lower (2)

One mark to be awarded for the correct definition, another for an example/per substantiated fact. Use the following as a guideline:

Visual merchandising refers to the way in which you display and sell your product. This applies to packaging as well as to in-store layout and display. **Visual merchandising** is the activity and profession of developing the floor plans and three-dimensional displays in order to maximise sales. Both goods or services can be displayed to highlight their features and benefits. The purpose of such visual merchandising is to attract, engage and motivate the customer towards making a purchase.

QUESTION 12.5 (12 marks)**QUESTION TYPE; COGNITIVE SKILLS: Knowledge (4 marks), Analysis (4 marks) Application (4 marks)**

LO 2 AS 1.8	Interpret, use and explain the choice of design elements, principles and materials in the final product, service or environment.
LO 1 AS 2.2	Display knowledge and appreciation of aesthetics and functionality throughout the design process.
LO 3 AS 1.2	Understand design theory and use design terminology correctly.
LO 3 AS 1.4	Investigate, reflect on and interpret information from a variety of sources that show global influences in shaping the development of design.
LO 3 AS 1.5	Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.
LO 3 AS 2.1	Demonstrate an understanding of the ways in which design can be used to reinforce or challenge social, cultural, environmental and ethical issues.
LO 3 AS 2.2	Demonstrate an understanding of the designer's responsibilities in relation to environmental issues and sustainable design.
LO 3 AS 3.1	Demonstrate a basic understanding of marketing design products in terms of target market, packaging and advertising.
LEVEL:	Lower (4) Middle (4) Higher (4)

Candidates can refer to any contemporary local or international designer in answering this question. The question paper clearly specified what content the answer should include. Marks should be awarded for the following:

Name the designer and **THREE** relevant designs (4)

Candidates should briefly describe the main characteristics of the designs. Award one mark per relevant fact to a maximum of 3 marks. (3)

The candidate should discuss **ONE** work in more detail explaining how the designer/design company promotes the principles of responsible design and fair trade. The candidates should convey an understanding of responsible design and fair trade. (5)

Use the information below as a guideline.

The Fair Trade Movement promotes a trading system that eliminates the middleman. It is a trading partnership promoting equitable trade in today's global marketplace. It is an alternative system of international trade in which workers receive living wages and employment opportunities for the goods they produce, instead of being exploited by multinational corporations.

It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalised producers and workers – who are typically economically disadvantaged artisans and farmers from developing countries. The Fair Trade producers partner with international organisations that help them build their skills to market and sell goods such as crafts, and agricultural products such as coffee and chocolate. For commodities, farmers receive a stable, minimum price.

Responsible design is defined as designs that contribute to improving human well-being and livelihood. The idea is that designers and creative professionals have a responsibility and are able to cause real change in the world through good design and have responsibility over the choices they make in design processes. For instance, designers can contribute to designing more ecological products by carefully selecting the materials they use. Designers should also be designing for people's needs rather than their wants.

Answers can refer to a wide range of case studies that were covered in the PAT tasks. Once again, answers cannot be generic and based on general knowledge, but **MUST** be based on **SPECIFIC** designed products by **SPECIFIC** designers/design companies/consultancies.

The following examples were suggested in the PAT task, although **ANY** relevant designers/design companies can be used.

Local:

... XYZ	(BOP Ecommerce Business kit/BATSA Shuttle/First National bank signage)
Nicholas Criticos for Woolworths	(Re: brand/interior change to green grocer look/new Woolworths signage and shop layout)
Black River FC	(Nandos brand and advertising campaigns: Loeries campaign; Sanlam spoof; Julius)

International:

David Butler of Coca Cola brand management	(aluminium Coca Cola bottles with Turner Duckworth/interactive vending machine/motion graphics – THE MOVIE/recycling bin with Yves Behar's Fuseproject)
Ross Lovegrove	(solar tree/eye digital camera/dna stair/future primitivism)
Mayapedal	(Bicycle Mill/Blender/mobile water pump) Bicycle machines New uses for old products
Fuseproject with Yves Behar	(Pumavision–Clever Little Bag/Jawbone/Coca-Cola bin)