



Province of the
EASTERN CAPE
EDUCATION

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REPUBLIC OF SOUTH AFRICA

CHIEF DIRECTORATE – CURRICULUM MANAGEMENT

**GRADE 12 LEARNER SUPPORT
PROGRAMME**

**REVISION AND REMEDIAL TEACHING
INSTRUMENT:
ANSWERS**

SUBJECT: DESIGN – FIRST PAPER

June 2009

This document consists of 35 pages.

Strictly not for test/examination purposes

SECTION A

QUESTION 1 (20 marks)

AS1: Make value judgements informed by a clear understanding of Design.

AS 2: Understand Design theory and use Design terminology correctly.

1.1 1.1.1 It can be said that the design is reminiscent of the cultural dress style of at least one African culture, the Xhosa female, in that the design of the dress is made up of clearly distinct sections:

- A tight bodice
- A long skirt which consists of 3 distinct sections
- Shoulder straps

The cultural dress of the Xhosa female also consists of a tight bodice and a layered skirt of which the hip area is covered by a tight blanket.

Allocate 2 marks for any well-motivated answer.

(2)

1.1.2 Line:

The emphasis is on the vertical in that:

- The dress is floor length.
- The design of the bodice is made up of alternating, contrasting vertical lines. These help to break up the solidity of the bodice's broad dark band and reminds us of the proud upright posture of the African woman which add to the feeling of elegance.

The vertical emphasis is broken by some strong horizontals such as:

- The light band that forms the upper edge of the bodice.
- The dark lower edge of the bodice which forms a clear dividing line between the hip-hugging top section of the skirt and the bodice.
- The dividing line between the tight-fitting upper part of the skirt and the double layered flare of the lower half.
- The pattern created by the lacings of the bodice at the back has a horizontal emphasis, even though they criss-cross diagonally.

Strong diagonals are evident in that:

- Both shoulder straps go over the same shoulder creating strong diagonals that break the strong vertical/horizontal emphasis.
- The layers of the flared section of the skirt, (each layer is cut so that it is longer on the one side than the other, thereby creating two opposing diagonals).
- The same opposing diagonal tension can be seen in the diagonal lacing of the bodice at the back of the dress.

All of the above add to the feeling of dynamism in the design.

Curvilinear line is represented by:

- The slight curve of both the upper and lower edge of the bodice as well as on the hemline of the two layers of the skirt. It helps to soften the verticals and horizontals and is reminiscent of the soft, sensuous curves of the female form.
- The figure-hugging bodice and upper section of the skirt further highlight the curvilinear lines of the female form.
- This emphasis on the curvilinear is repeated in the pattern of the lighter coloured fabric.

Movement:

- The undulating (wavy, flowing) diagonals of both flared sections of the skirt create the feeling of movement in counter-directions.

Contrast:

- The vertically lined pattern of the bodice contrasts with the curvilinear lined patterning on the material of the upper sections of the skirt.
- The light patterned material, (visible in the upper sections of the skirt, the upper edging of the bodice, the shoulder straps and the thin vertical lines on the bodice), contrasts with the darker plain material of the bottom layer of the skirt, the bodice, and the dark lace-ups at the back of the dress.

Balance:

- The balance is asymmetrical due to the fact that both straps go over the left shoulder. The straps also take the eye outwards until it is in line with the flared skirt on the left of the figure.
- This strong focus of emphasis on the one side is counter-balanced by the flare of the patterned section of the skirt on the opposite side.
- Further, the cut-away shoulder section, (i.e. the side without shoulder straps) is counter-balanced by a corresponding cut-away section of the bottom flare of the lower section of the skirt.

All of the above also add to the dynamism of the design.

Any FOUR elements or principles may be discussed. Allocate 6 marks for 6 well-motivated statements. (6)

- 1.1.3 It is important for the development of a South African identity. To remind us of our past identities helps us to retain an idea of who we are. It engenders a pride in who we are and fosters a national identity. It helps us in marketing South African products internationally. (2)

Q1.1	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation Visual comprehension	30%	Part of 1.1.2	3
Middle order	Application of elements	50%	1.1.1 + Part of 1.1.2	2 + 3
Higher order	Analysis Synthesis Evaluation	20%	1.1.3	2

- 1.2 Form/shape (2- and 3 dimensional):
The building consists of a simple triangular form with rounded edges. The simplicity of this form gives it great impact. This very organic, triangular, three-dimensional form with no vertical lines is unusual and unexpected, as buildings generally have some verticals as well as block-like forms. Its form is futuristic, suggestive of a space-ship or flying saucer. It is entered through a curved opening, similar to that of a cave, which enhances its strangeness. Light enters the building from above through segments suggestive of the petals of a flower.

Line:

The outline of the main building forms a sweeping curve around the triangular shape, giving the building a dynamic quality. The building is made up of segments that fit together to form lines that resemble seams. The regular and perfect repetition of these very straight lines from the top centre out and around the sides of the building is mechanical, but is also suggestive of forms from nature such as the caterpillar.

Texture:

The building is constructed on the outside from very modern materials, i.e. steel and reinforced plastic. These materials are smooth, impersonal and technological, contributing to the futuristic, other-worldly character of the building.

Unity:

The building forms a strong unified whole because it consists of one dominant triangular form. The shape of the roof 'light' is also triangular, with rounded corners, further supporting the sense of unity. The repetition of the 'seam' line formed by the steel segments, as well as that of the colour also help to bring about a sense of unity.

Movement and rhythm:

The sweeping outline of the form is very dynamic. The lines formed by the segments repeat to create a very regular, almost mechanical rhythm.

Contrast/ Emphasis:

The light, smooth surface of the steel walls is broken by the contrasting dark, sharp lines of the segment edges. The strong horizontal line moving around the top section of the building is also broken by the 'seam' lines of the segments cutting across it in the opposite direction. The straight lines and rectangular shapes of these segments contrast with the curved shape of the building as a whole. These contrasts give the work impact and interest, intriguing the viewer. Emphasis is created through the lines that converge around the triangular flower shape on top creating a point of emphasis or focal point. Further emphasis is also created by the fin or leaf-like shapes that project upwards from the roof.

Marks must be given to a discussion of any 5 elements and/ or principles – or other relevant Design terminology such as 'decoration' or 'function'. The learner must say 'HOW' the element or principle has been used, as well as 'WHY' (i.e. for what effect).

(10)

[20]

Q1.2 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation/ Comprehension	30%	Part of 1.2	3
Middle order	Application	50%	Part of 1.2	5
Higher order	Analysis Synthesis Evaluation/ Deduction	20%	Part of 1.2	2

QUESTION 2 (10 marks)

AS3: Discuss, explain and demonstrate the context and purpose of the products, images, signs and symbols used in Design.

AS2: Understand Design theory and use Design terminology correctly.

2.1 2.1.1

Target Market	
Figure A	Figure B
<p>Sensuous, sophisticated, sexually mature women – the age-group probably ranging from the late twenties to early forties.</p> <p>This is evident in the sensual Marilyn Monroe style face with the pouting lips and glamorously tousled hair, as well as in the provocatively sexual pose which is emphasized by the clinging satin dress. Jennifer Lopez as a celebrity icon represents all of this.</p>	<p>Successful businessmen in important positions, probably in the thirties to forties age-group and who live fast, high-profile, corporate lifestyles.</p> <p>This is evident in the focused stance and the seriously intent facial expression. The suit subscribes to the dress-code of a CEO and everything else about him points to a man who is:</p> <ul style="list-style-type: none"> • Up-to-date (the newspaper under his arm) and makes use of the latest technology (the stylish watch and latest cellphone). • On time (the very visible upmarket watch on an arm which is held in a state of tension ready to be consulted at any moment). • Always available and ready to communicate (he is shown listening intently with the cellphone held to his ear).

(4)

- 2.1.2 Learners must demonstrate a clear understanding of the term, stereotype.

A stereotype in advertising can be described as a fixed image of someone or something that is promoted and held up as an ideal to strive for by society, but it does not take into account the individual, i.e. it tells you how a person must be and not how they are.	
FIGURE A	FIGURE B
The stereotype is that women must be sophisticated, glamorous, sensuous and beautiful.	Men must appear strong, professionally dressed, business-like and successful.

(2)

- 2.2 2.2.1 The Gestalt principle of Figure-ground can be applied to the design in FIGURE C. Equal emphasis is placed on the foreground (the spanner) and the background (the letters, E & C), creating an unstable figure-ground relationship.

(2)

- 2.2.2 The spectator is encouraged to lend a 'helping hand'. The outstretched hands symbolise assistance. Because the hands are literally outstretched around the globe we understand that help is required globally. The arms, portrayed in different colours, appeal to the different races and cultures of the world to volunteer their help.

(2)
[10]

Q2 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation/ Recall/ Comprehension	30%	Part of 2.1.1	3
Middle order	Application	50%	Part of 2.1.1, 2.1.2, 2.2.1	1 + 2 + 2
Higher order	Analysis Synthesis Evaluation/ Deduction	20%	2.2.2	2

QUESTION 3 (10 marks)**AS1: Make value judgements informed by a clear understanding of Design.****AS2: Understand Design theory and use Design terminology correctly.****AS4: Investigate, reflect on and interpret information from a variety of sources that show global influences shaping the development of Design.**

3.1 3.1.1 Learners must answer in paragraph form using full sentences.

	FIGURE A	FIGURE B
Context	<p>Belongs to the time period 1880 – 1905 and is more than likely to come from France or England.</p> <p>The word Art Nouveau literally refers to 'The New Art' of the time.</p> <p>It was an eclectic style (it borrowed the best characteristics from other styles to create something entirely different).</p> <p>It was characterised by the use of flowing curved lines and elegant designs.</p>	<p>It is a recent design that clearly owes its shape and form to the minimalist trend of modern day Design, but it can also be described as eclectic because the style borrows heavily from the Bauhaus School, established in Germany between the First and Second World War.</p>
Influences	<p><u>Japanese art:</u></p> <ul style="list-style-type: none"> • Japanese prints – characterised by flat areas of colour and flowing lines. • The grid patterns of Japanese room interiors. • Decorative detail on objects, e.g. fans and kimonos. <p><u>Viking legends and ancient gospel books:</u></p> <ul style="list-style-type: none"> • They inspired romantic ideas and lavish ornamentation. <p><u>Celtic Art:</u></p> <ul style="list-style-type: none"> • Elaborate, curving, linear Celtic designs twisted together decoratively. 	<p><u>The Bauhaus School of Architecture, Design and Craftsmanship in that:</u></p> <ul style="list-style-type: none"> • It is a clear example of 'Form Follows Function'. • It conforms to the Bauhaus concept of Functionalism because it is a machine-made product which is well designed, efficient and useful. • It is made from a modern material(s), namely metal (possibly combined with wood) and marks a shift from craft to machine

		<p><u>Symbolism:</u> Refers to another art movement of the same period. They influenced Art Nouveau with their:</p> <ul style="list-style-type: none"> • Disregard for perspective, use of flat forms and flat areas of colour. • Use of organic, curved outlines, sensual designs using curves derived from nature and the female form. 	<p>values. It is therefore a clear example of the machine aesthetic.</p> <ul style="list-style-type: none"> • It bridges the gap between craft and industry in that it is well designed and does not necessarily have to be hand-made. • It reflects the Bauhaus sense of space and equilibrium in that the design appears to be in a state of perfect balance. • The material as well as its constructive potential has become the subject. • The design unifies the Design principles of balance, unity, contrast/emphasis, rhythm and movement. • It is well-designed, efficient and useful. <p><u>The Arts and Crafts movement:</u></p> <ul style="list-style-type: none"> • Although it is not clear what material the surface of the table is made of it can be said to follow William Morris's idea of 'Truth to Materials' in that they are left relatively unadorned so that the beauty of the material can shine through. In this case the frame is clearly made out of some type of metal, possibly steel.
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Form	<p>The treatment of form can be considered to be 'pure' Art Nouveau in their treatment of line, shape and decorative detail.</p> <ul style="list-style-type: none"> • Each of the three legs are in the form of an identical stylised dragonfly, decoratively carved. • Their elegant flowing curves, shapes and forms reflect the rhythm of the 'whiplash' line. These same lines are repeated on the outer edge of both table surfaces. • The dragonflies stand vertically upright on their long tails while their heads and wings are used as supports for the table-top. 	<p>Simple shapes and forms reflect the minimalist style of the Bauhaus:</p> <ul style="list-style-type: none"> • The design is made up of simple geometric shapes held in a state of perfect balance. • The structure consists of two identical metal rings held apart by eight identical verticals, which form the legs of the table. • The overall appearance resembles the shape of a drum. • The simple unadorned shapes of the frame create a feeling of openness that offset the heaviness of the large flat circular plane of the tabletop. It creates the effect of a large disc being held in a state of perfect equilibrium. • Because the legs of the table are evenly spaced they create a series of open identical rectangular shapes that take the eye around the table, further emphasizing the roundness of the table-top.
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Line	<p>The use of the 'whiplash' line is clearly repeated throughout and serves to unify the design:</p> <ul style="list-style-type: none"> • Along the edge of the two flat table surfaces, (the large and smaller one). • In the bodies of the dragonflies that form the legs of the table. • Decorative line is also used as detail on the three legs of the table and adds variety and contrast against the smooth, polished table surfaces. 	<p>The combination of contrasting curved and straight lines create a feeling of unity.</p> <p>Opposing verticals and horizontals, curves and rectangles form the essence of the design, but are in a state of perfect balance with the rest of the design and do not dominate in any way.</p>
Functionality	<p>The table is functional as a table but is not an example of 'Form Follows Function' because of the use of decorative detail typical of the Art Nouveau period.</p>	<p>It reflects the Bauhaus concept of Functionalism because:</p> <ul style="list-style-type: none"> • The design is clearly suited to the purpose for which it is designed. • There is no additional detail and can therefore be said to be a true example of 'Form Follows Function'.

- 3.1.2 A design by any contemporary South African designer from the Woolworths book 'Living with Design Daily' or from 'Craft Art South Africa' can be discussed briefly.

Example:

'Butter Dish' by Carrol Boyes.

This work was first modeled in clay and then cast in pewter. The form is unevenly rounded, heavy and chunky, reminiscent of hand-hewn, ancient, metal bowls. A highly simplified rounded figure with arms stretching around the edge of the bowl emerges from one side of the outer wall. The gleaming silver of the pewter lends a luxurious quality to the work and subtly reflects shapes and colours from its surroundings. Organic, circular line dominates the work. The pewter has been buffed to a smooth, sensuous, gleaming finish on the outside, which is enhanced by the contrasting, unpolished, rough inner walls.

(4)
[30]

Q3 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Knowledge, Comprehension	30%	Part of 3.1.1, 3.1.2	1 + 2
Middle order	Application of elements	50%	Part of 3.1.1, 3.1.2	3 + 2
Higher order	Analysis Synthesis Evaluation	20%	Part of 3.1.1	2

QUESTION 4 (30 marks)

AS1: Make value judgements informed by a clear understanding of Design.

AS2: Understand Design theory and use Design terminology correctly.

AS4: Investigate, reflect on and interpret information from a variety of sources that show global influences shaping the development of Design.

AS5: Analyse, interpret and critically reflect on examples and relate them to their cultural, historical and contemporary contexts.

4.1

FIGURE A:

This is an Art Nouveau door handle.

Reasons:

- Use of flowing, exaggerated curvilinear line in the surface detail.
- Use of only organic, curved shapes creating a dynamic design.

FIGURE B:

This is an Art Deco door handle.

Reasons:

- Typical Art Deco use of stepped shapes is visible on the edges and is inspired by Egyptian and Aztec discoveries of the time.
- The handle is geometric and forms an elongated zigzag shape typical of Art Deco.

FIGURE C:

This is a Bauhaus door handle.

Reasons:

- The forms are simple, pure and geometric.
- No surface decoration is visible.

(3 x 3)

(9)

- 4.2 Bauhaus.
Reason:
The emphasis is on form and edge rather than on decoration. (1)

Q4.1 + 4.2 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Knowledge/ Comprehension	30%	Part of 4.1	3
Middle order	Application of elements	50%	Part of 4.1	5
Higher order	Analysis Synthesis Evaluation	20%	Part of 4.1 4.2	1 1

- 4.3 ONE OF THE FOLLOWING STYLES MAY BE CHOSEN:

THE MODERNIST AGE

Aims:

- To search for a style that reflected the 'modernity' of the age.
- To appeal to the world mass market.
- To create/promote well-designed products that were also functional and economical.
- To experiment with new materials/shapes that had wide consumer appeal.
- To design new and innovative products (transistor radios, plastic chairs, domestic lighting, buses, motor cars, aeroplanes, refrigerators and the juke).
- To design for a new target market – the teenager.

Influences:

The influence of:

- (i) America (1935 – 1955) due to:
 - Highly developed business and industrial skills.
 - Postwar immigration of leading European designers.
 - The 1939 New York Exhibition and its pioneering of German Bauhaus design principles which emphasised contemporary, modern appearances, finishes and materials.
 - The rise of a new, style-conscious, wealthy mass market.
- (ii) The analytical approach of 20th century design due to the Bauhaus (logical, economic, standardised and simplified design with the emphasis on mass produced technological goods made from new materials).
- (iii) The effect of the study of hydro- and aerodynamics on the streamlining of designs.
- (iv) New materials:
 - metals (tubular steel, aluminium and chrome) and metal alloys.
 - a new range of glass.
 - a new range of plastics (Bakelite and polyurethane).

- Plywood.
 - reinforced concrete.
- (v) Scandinavian furniture designs:
Their emphasis on functional, organic, streamlined, futuristic and ergonomic shapes, as well as their use of both natural materials (wood and leather) and plastics.

STYLE:

- Softer, no longer geometric
- Seamless, integrated designs
- Bulbous, teardrop body shells hiding the inner workings of the new mechanical and electrical products.
- Functionalist
- Experimentation with the aesthetic potential of new materials.
- Expressive, organic forms used for soft, lounge furnishings and decorative art objects.
- Used the results of research into hydrodynamics, aerodynamics and ergonomics to improve product performance.
- No unnecessary decoration, particularly in Architecture.

SUBJECT MATTER:

- The redesign of any utilitarian objects using new media. Such objects may include toothbrushes, household appliances, motorcars, radios, posters, film, billboards, television and magazines.
- Anything that was popular and in demand.

CHARACTERISTICS:

Shape/form: (2-or 3 dimensional)

- 'Streamform'/ teardrop shape for transportation vehicles.
- Simplified, streamlined and smoothed to create a modern look.
- Futuristic shapes (buildings, transportation and household goods) – reflected preoccupation with world interest in outer space, e.g. dome shape in buildings and stadiums.

Line:

- Speed and chevrons on vehicles to suggest forward motion and speed. Also used on household goods (e.g. vacuum cleaners and radios).
- Curved lines and undulating shapes in modern furniture designs.

Colour:

- Wide range of new colours available due to the development of chemical dyes, (used on household goods and in the automotive and textile industries).
- Pastel colours used for cars and household interiors.
- Brilliant primary colours used for advertising.

Space:

- Modernist building placed the emphasis on space rather than mass. Space was divided and closed according to the building's function, resulting in open-plan designs.

WORKS:

Furniture: The Ant Chair (1952)

- Designed by Danish designer, Arne Jacobsen.

Context:

- Designed for a Danish medical group.
- Had to be something that could be produced easily under factory conditions.
- Must retain a 'handmade' quality.

Influences:

- Charles Eames: furniture to be seen as a beautiful object in its own right not just as a utilitarian object.
- The design influenced by the 'Tongue Chair' made out of a single moulded plywood piece.

Materials:

- The seat is a single moulded piece of plywood.
- The frame for the seat and the legs are made out of chrome-plated tubular steel.

Functionalism:

- Chair design is compact and lightweight so that they can be easily stacked.
- It is ergonomically designed.
- The design worked so well it is considered a classic and is still used all over the world.

USE OF ELEMENTS:

Shape and Form: (2-or 3 dimensional)

- Shape resembles the head of an ant with its head raised.
- Reflects a combination of modernist ideals (simplified and streamlined) and the Nordic love of Naturalism (organically curved lines).
- It is in the shape of an hourglass and is attached to three tubular steel legs. The seat is bolted to the frame of the legs.

Line:

- Shape of chair bounded by an organic, wavy, flowing line.
- Legs are straight and are spaced so that people's legs do not become entangled in them and to ensure a stable base. It also makes them easy to stack.

Colour:

- Seat – originally made from natural wood veneers laminated together.
- Legs – originally grey plastic, then changed to the shiny silver colour of the chrome.
- Modern versions can be brightly coloured.

Allocate 10 marks.

POP/NEW AGE (Also known as the Age of Affluence) (1955 – 1975)

Aims:

Style is international:

- American designers – completely restyled products and emphasised the use of technology and scientific research.
- British designers – designs to reflect modern life. Believed that Design is the vital link between the scientist and the artist, the engineer and the common man.
- Modern designers – Do not follow a single design idea, design styles can co-exist and taste is continuously questioned.

INFLUENCES AND SUBJECT MATTER: (Any of the following):

- The requirements of the youth culture – fashionable, funky clothing that is continuously updated (T-Shirts).
- The rise in consumerism and the worldwide economic boom of the time.
- Movies, film and the life of filmstars.
- The desire for cars and luxury household goods.
- Science and the preoccupation with outer-space (space and science-fiction motifs).
- Advertising: through the media (film, glossy magazines), the use of the psychology of social status' to sell household goods through the media/ the start of branding and logo advertising (example: the 'Apple' logo).
- Fashion and consumer trends by the latest designers, (the miniskirt by Quant/ the 'Mini'/ 'Beetle' and Vespa Scooter).
- Pop Art: the work of Andy Warhol/Roy Lichtenstein, emphasizing everyday subject matter/ The Pop culture which was anti-snobbery/ Op Art – a branch of Pop Art (introduced optical illusion to household and textile design).
- The Anti-Design Movement (Italy, 1940's and 50's) – reaction to rectangular forms and design as a cheap marketing ploy. The (Sottsass) 'redefined' design through the use of shocking colour, visual puns/undermined objects' formal function/ questioned relevance of taste and function.
- Humour and Wit began to appear in all aspects of design (Alessi's lemon squeezer, toys).
- Kitsch – playfulness and irony in design (bad taste with an edge to it), undermining the aesthetic seriousness of things previously considered beautiful (Andy Warhol's Marilyn Monroe images seen as an art form – 'High Kitsch').

CHARACTERISTICS: If learner makes reference to the new materials, they must get marks.

- These were dictated by the wide range of new processes and materials available from chemical processes, for example:
- Wood could be moulded.
- Plastic was invented – Cellulose acetate/ celluloid was made from chemically treated cotton – It had a divided range of applications.
- Acrylic, fiberglass, Styrofoam, PVC plastic, chromed steel and meta, alloys, moulded glass, synthetic rubber, textile fiber, nylon, epoxy and cellophane.

Shape, form and line: (2 - and 3 dimensional)

- Reaction to Bauhaus 'hard-edge' Design.
- Works characterised by biomorphic shapes of American Abstract Art movement and natural forms with shapes that were fluid, undulating and curvaceous (influence of Scandinavian designers).
- The simple lines of the Asian (Japanese) traditions.
- Experimented with new shapes from new materials (e.g. injection moulded plastic), the single pedestal/cantilevered chair. Formal legs replaced by tensioned and sprung support systems.
- Traditional materials (cane and wood) transformed through new processes, (e.g. plywood) enabling new moulded shape.

Colour:

- A larger variety of new synthetic paints in a wide range of tones were widely available.
- Greater opportunity for general public to transform own living environment.
- The development of acrylic paints.

WORKS :

Technology: The Sunbeam Mixmaster food processor designed by Swedish designer Ivar Jepson.

Purpose:

- A new scaled-down version of earlier large, unwieldy industrial machines. It was robust, versatile and easier to use for domestic purposes.

Social Context:

- To have the latest model was a domestic status symbol. It ensured the continuous updating of designs. It was one of the latest, newly designed, essential tools for the household along with the refrigerator, stove, kettle, a washing machine, toaster, food processor and vacuum cleaner.

Function and design:

- Consisted of a food processor and a mixer unit that could be detached and used as a hand-mixer.
- Its space-age streamlining influenced by the car industry (chrome housing, interlocking paddles and adaptable speeds which could be programmed by twisting the calibrated plastic cap at the end of the machine. Its beaters pulled out of the spindle and fitted to the sides and bottoms of the bowl.
- It was used to make juice, peel fruit, shell peas, press out pasta and grind coffee. Attachments could be fitted to provide other functions – e.g. for opening cans.

Shaping the environment:

- The amount of time spent on domestic chores was significantly reduced – creating more leisure time.

Use of the Principle:

- Balance – the balance is asymmetrical with an emphasis on the left side which is balanced by the base.

Allocate 10 marks. (2 marks for every heading and information)

POST MODERNISM

Aims:

- To move away from the authoritarianism of Modernism (where adherence to strict rules is expected) and a wish to replace this with variety and individuality.
- To create designs that satisfy human needs – to move away from cold, impersonal, machine-like designs.
- To create designs that can be appreciated and understood by the general public and that are not elitist like those of the Modernists (i.e. only understood by a select few).
- To reinstate links with past design styles and to create a balance between modernism and tradition.
- To acknowledge local, existing styles and the needs of individuals.

(10)

Any TWO of these aims or any other relevant aims can be mentioned.

Influences:

- VENTURI: Venturi's slogan 'Less Is Bore' is a counter-statement to the Modernist belief that 'Less Is More'. His rejection of their emphasis on purity, simplicity and austerity influenced Post Modernists.
- THE ANTI-DESIGN MOVEMENT of the 1960 in ITALY: Memphis Studio, Archizoom and Super studio are all design groups that form part of this movement. Their use of eclectic sources as inspiration as well as their combination of cheap and expensive materials and of popular and high culture influences Post Modernism.

- FEMINISM:
The emphasis on the female point of view starts to influence designs.

Any TWO of these influences or any other relevant influences can be mentioned.

Characteristics:

- Post Modernist designs are called eclectic – designers borrow from past styles (eg. Greek and Roman building elements) and combine these in one design. This can lead to a lack of coherence.
- Transient and glossy images are often used.
- Ornamentation/decoration becomes important again. Colour, distortion, kitsch, humour, wit and irony become essential components.
- Modern techniques, materials and forms are combined with traditional techniques, materials and forms (eg. smooth, machine-like, geometric, steel forms are combined with wooden organic, curved, arch forms).

AN EXAMPLE OF ONE WORK:

‘THE GHOST CHAIR’ by Phillipe Starck

- Aim, Function and Context:

The chair’s shape clearly reflects the shape of a Baroque chair designed during the reign of French king Louis XV, but it is made from plastic – a very modern, transparent material. This merging of old and new is very typical of Post Modernism. The function of the chair is to be a strong seat that can carry the weight of a body. The fact that it is transparent undermines this function.

This playful questioning of the function of a structure is a rejection of the Modernists belief in Functionalism and also typical of Post Modernism.

(10)

- Form and Line:

The chair consists of elegant, simple, curving lines and forms that reflect tradition and help to convey grandeur and dignity. The smooth, unadorned surfaces change the forms to being modernist and minimalist.

- Colour, material, texture and technique:

The chair is produced from transparent polycarbonate plastic in various pastel colours, such as pale apricot, antique yellow, ghost grey and pale green. It is also produced in very bright colours.

These light-hearted, fun-filled colours undermine the stately character of the original chair and give it a modern twist.

Allocate 10 marks.

Q4.3 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Recall	30%	Part of 4.1 – essay	2 x 3 = 6
Middle order	Application	50%	Part of 4.1 – essay	2 x 5 = 10
Higher order	Analysis Synthesis Evaluation	20%	Part of 4.1 – essay	2 x 2 = 4

- 4.4 Learners must formulate a discussion on how the use of new materials and technologies has impacted on 20th century global Design.
Note: A learner may use any example from an LTSM as prescribed in the LPG (e.g. a website).

Any two of the following examples may be used, or any other two relevant examples.

Example 1:

Designer = Cesare Columbo (manufactured by Kartell) 1965
'4867 chair' (describe briefly):

- A stackable plastic chair with cylindrical hollow legs which are made separately and then attached.
- The hole at the back of the seat is needed to remove the chair from the mould.
- Materials: ABS plastic (explain briefly – see below)
- Technology: Injection moulded (explain briefly – see below)
 - Injection moulding is a manufacturing technique for making parts from both thermoplastic and thermosetting plastic materials in production. Molten plastic is injected at high pressure into a mould which is the inverse of the product's shape. Injection molding is the most common method of production of plastic designs, with some commonly made items including bottle caps and outdoor furniture.

- ABS is a polymer. It is a thermoplastic blend made from petrochemicals (resulting in depletion of fossil fuels), but can be re-cycled. The advantage of ABS is that this material combines the strength and rigidity of polymers with the toughness of rubber. The most amazing mechanical properties of ABS are resistance and toughness. A variety of modifications can be made to improve impact resistance, toughness, and heat resistance. ABS is suitable for outdoor applications.

Allocate 5 marks.

Example 2:

Name of material: Plywood

Properties, process and technology:

Plywood is a type of engineered wood made from thin sheets of veneer, called plies or veneers. The layers are glued together, each with its grain at right angles to adjacent layers for greater strength. There are usually an odd number of plies, as the symmetry makes the board less prone to warping, and the grain on the outside surfaces runs in the same direction. The plies are bonded under heat and pressure with strong adhesives, making plywood a type of composite material.

A common reason for using plywood instead of plain wood is its resistance to cracking, shrinkage, twisting/warping, and its general high degree of strength. It has replaced many dimensional lumbers on construction application for these reasons.

A vast number of plywood exists for different applications. Softwood is typically used for construction and industrial purposes. Plywood has been used in furniture-making since the 18th century if not earlier. The material was also explored in the 20th century and later designers bent the material in three dimensions, exploring its sculptural potential. Plywood for indoor use has limited water resistance, while outdoor and marine grade plywood is designed to withstand rot. The use of water resistant glue prevents delamination and ensures that it retains strength in high humidity.

Example of product: Seat of the 'Ant Chair' by Arne Jacobsen

Allocate 5 marks.

Example 3:

Name of material: Acrylic Glass (PMMA)

Properties, process and technology:

This thermoplastic and transparent plastic is sold by many trade names, i.e. Plexiglass, Perspex, Acrylex, Acrylyte. The material was developed in 1928 in various laboratories and was brought to market in 1933. PMMA is often used as an alternative to glass and is preferred on account of its moderate properties, easy handling and processing, and low cost.

Thermoplastic PMMA is typically processed at 240° – 250°C. All common moulding processes may be used, including injection moulding, compression moulding or extrusion. PMMA is softer and more easily scratched than glass, but scratches may also be easily removed through polishing. PMMA filters ultraviolet light and has excellent environmental stability compared to other plastics such as polycarbonate, and is therefore often the material of choice for outdoor application.

Example of product: 'Bubble Chair' by Eero Aarnio (1968)

Example 4:

Name of material: Polyurethane (Flame-retardant)

Properties, process and technology:

Flame-retardant additives are often used to reduce the risk and severity of polyurethane foam combustion. A wide variety of flame-retardants are known and commercially available for this purpose. The phase-out of the widely used flame retardants in 2004 due to its persistent and bio-accumulative properties has prompted the flame retardant industry's move towards the use of more sustainable, halogen-free flame retardant alternatives. In recent years there has been the introduction of sustainable, halogen-free flame-retardant solutions for polyurethane foam.

Polyurethane foam products have many uses. Over three quarters of the global consumption of polyurethane products is in the form of foams, with flexible and rigid types being roughly equal in market size. In both cases, the foam is usually behind other materials: flexible foams are behind upholstery fabrics in commercial and domestic furniture; rigid foams are inside the metal and plastic walls of most refrigerators and freezers, or behind paper, metals and other surface materials in the case of thermal insulation panels in the construction sector. Its use in garments is growing: for example, in lining the cups of brassieres. Polyurethane is also used for mouldings which include door frames, columns, balusters, window headers, pediments, medallions and rosettes.

Polyurethane is also used in furniture manufacture for casting soft edges around table tops and panels that are stylish, very durable and prevent injury. These are used in school tables, hospitals and bank furniture as well as shop counters and displays. It is used on the bottom of some mouse pads.

Example of a product: 'Misfits Seating' by Ron Arad

Allocate 5 marks.

(10)

[30]

Q4.4 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Recall	30%	Part of 4.4	3
Middle order	Application	50%	Part of 4.4	5
Higher order	Analysis Synthesis Evaluation	20%	Part of 4.4	2

SECTION B

QUESTION 5 (20 marks)

AS1: Make value judgements informed by a clear understanding of Design.

AS2: Understand Design theory and use design terminology correctly.

AS7: Demonstrate an understanding of the ways in which Design can be used to reinforce or challenge social, cultural, environmental and ethical issues.

5.1 One of the following 10 mark questions must be answered: QUESTION 5.1.1 OR QUESTION 5.1.2

5.1.1 Note: A learner may use any example from an LTSM as prescribed in the LPG (i.e. the Woolworths book 'Living with Design Daily' or 'Craft Art in SA' by E. Coetsee).

- In this essay, the learner will choose a South African designer or group who is concerned with ANY social issue.
- Some examples of issues could be: poverty; capitalisation; gender issues; health issues; social injustices; racism; and marginalisation etc.
- Some examples of designers or design groups are:
- MonkeyBiz – poverty alleviation and job creation
- Mapula – poverty alleviation and job creation
- Streetwise – poverty alleviation, skills training, job creation
- Mielie – poverty alleviation, skills training, job creation
- The learner should discuss named works by their chosen designer.

Example 1:MAPULA

Mapula was started to provide employment for rural women. It was initially funded by a charitable NGO but is now self-funding. This is what is known as 'empowerment'.

The women create their own designs based on natural forms such as flowers and trees and also refer to events in their daily lives – such as children playing in a rural community.

The women were initially taught the skills of surface design and embroidery techniques, and now come up with many new designs. An example of one of their most used stitches is the chain stitch.

They create both functional products such as cushion covers and table runners, as well as one of a kind art pieces such as wall-hangings.

Their work is usually on black cotton cloth, and brightly coloured cottons emphasise the unique African identity of their work. Surfaces are often densely embroidered, and the black negative spaces function as the background. The cotton is in itself environmentally friendly and sustainable as it is readily available in South Africa. Give credit for any other information.

Allocate 10 marks.

Example 2:

A contemporary South African Craft Business and community development project:

STREETWIRES

Streetwires, a highly profitable craft business and community development project, was established by Patrick Schofield, Winston Rangwana and Anthony Ressel. The business focuses on producing street wire art, a uniquely Southern African genre. Its aim is to tackle the problems of unemployment and poverty in our country. The most likely origins of this artform are the rural areas of Maputoland and Zimbabwe where poor herd boys created their own toys out of discarded hanger wire, tin cans and whatever else they could find.

The three co-founders of Streetwires all come from different backgrounds and each made a valuable contribution – Schofield has an Honours degree in Business Science and used his house as security to start the company. Rangwana contributed a wealth of knowledge regarding the 'wire' industry, whilst Ressel provided the marketing know-how. In the beginning, only two wire artists were employed on a part-time basis, using a room in Schofield's house as their workspace. The business grew, resulting in two larger premises. The Cape Town studio reveals a business based on quality control. New wire-art designs are being created by a design team and once designs have been approved, templates are made and passed on to the wire crafters who work as a team to manufacture the product. To maintain a high standard, the team leader ensures that the template design is adhered to exactly and that the template design is passed through quality control before being released.

The company believes that the major hurdle facing our country is unemployment. Not only is it the leading cause of numerous social ills such as poverty, it also hampers community growth and development. With this in mind, they aim to create meaningful long-term employment for as many South Africans as possible and to improve the life of South Africans by providing a workplace, permanent employment, a sense of purpose and access to skills training and personal development. 'Streetwires Training and Development' is a non-profit company established by Streetwires that specifically aims at uplifting communities by providing skills training, development of individual artists and creating outreach initiatives in orphanages, schools and impoverished communities.

Objects produced are both decorative and functional such as beaded promotional items and gifts (e.g. keyrings, paperclips with a logo top, business-card holders), working radios, various models of cars in wire or beaded wire and animal, bird and human sculptures. The shapes and forms are highly stylised and simplified, incorporating an element of whimsy and humour. Bright colours and simple, curvilinear outlines dominate. The technique of wire art dominates, incorporating materials such as beads, cut-up tin cans and bottle caps.

Allocate 10 marks.

Example 3:

THE JUPITER DRAWING ROOM

The Jupiter Drawing Room is an award-winning South African advertising agency. The agency has taken the concept of empowerment seriously and has moved way beyond the 26% empowerment ratio in their staffing and shareholders.

They believe that, with the wide choice of products offered today, as well as the diverse range of media available to promote these, the need for powerful, relevant, compelling and integrated communications have never been greater. The following words summarise their philosophy: 'If you can communicate a single-minded proposition across a number of media, you stand a greater chance of your brand being noticed, remembered and acted upon.' The agency therefore uses all the major media categories as well as new and innovative media to promote a brand, product or company, for example:

- Television and cinema
- Outdoors: includes billboards and moving vehicles
- Graphic Design and Print: includes posters, letterheads, envelopes, business cards and packaging
- Radio: for commercials
- Digital Media: includes website design
- Campaigns: make use of a combination of the above-listed media and are set up as a long-term promotion of a product or business.

Several of the agency's campaigns show a commitment to the use of powerful and poignant images and slogans to address social concerns:

- Their Poster Campaign for the UN World Food Programme
- Posters for the Musica Deaf Awareness Week

The Poster Campaign for the UN World Food Programme:

(10)

These posters highlight the plight of the hungry. There are four posters, each one depicting one of the following items: an egg, a wedge of cheese, a plastic bag and a carrot. Each poster uses the benefits and clichés associated with the displayed item to bring the issue of starvation starkly to the fore.

Posters for the Musica Deaf Awareness Week:

Music evokes a certain type of feeling or emotion to those who can hear. These feelings are never felt by those who can't hear.

Boxer, Tank and Dog are three very powerful posters. Each image was specially chosen to represent the emotions that a particular song evokes, so that these feelings can be felt by both deaf and hearing people.

Allocate 10 marks.

Q5.1.1 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation/ Recall, Comprehension	30%	Part of 5.1.1	3
Middle order	Application	50%	Part of 5.1.1	5
Higher order	Analysis Synthesis Evaluation	20%	Part of 5.1.1	2

5.1.2 Any one of the topics in the question paper may be discussed. These topics are discussed in the LTSM 'South African Visual Culture'.

Topic chosen as memorandum example: THE SHOPPING MALL.

Urbanisation in South Africa is bringing about a need for new roads, better transport, better housing and also lots of carefully thought through areas of leisure and commerce. One of the ways in which leisure and commerce can interact productively is the development of malls or shopping centres which service widely diverse shopping groups. Malls are places where people buy things, interact socially and find entertainment, and when designed responsibly can positively contribute to the well-being of our society. Because many of these centres are new, innovative ideas which are suitable to South African conditions and needs can be explored. The location of these centres to serve the emerging needs of the consumers is an important factor eg. factors like linking it to accessibility and to power and service facilities,

need to be considered. The dominant culture and interests of the population in which it is placed needs to be taken into account. This will, for example, affect the choice of theme if the shopping mall is taking the form of a theme park. Until the 19th century, most urban entertainment centres catered for the wealthy. Industrialisation and urbanisation have lead to the demand for entertainment spaces for the working class. Modern shopping malls encompass not only commercial and retail needs but also those of leisure. Within a single designated area large amounts of people can shop and be entertained. Roofing protects shoppers from weather conditions and encloses them in one area to focus their attention on the inside. Prior to the 70s, shopping in South Africa was racially segregated with shoppers acquiring goods 'down town' from different outlets. As the political climate of South Africa has changed, malls have been developed extensively. They have become an increasingly democratic place where interaction between different ethnic groups takes place.

Shopping malls are designed to make the shopping experience feel comfortable and festive. Malls are places where people establish social identities, especially as shops display fashionable items and encourage in their advertising identification with a certain class, gender and financial position.

To make sure ensure that the needs of all consumers are catered for, shopping malls need to ensure easy access, as well as facilities for the disabled and some also include facilities such as baby rooms and play areas for small children.

(10)

Any 10 relevant points can be used.

Any other relevant points can be marked as correct.

Q5.1.2 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation/ Recall, Comprehension	30%	Part of 5.1.2	3
Middle order	Application	50%	Part of 5.1.2	5
Higher order	Analysis Synthesis Evaluation	20%	Part of 5.1.2	2

- 5.2 5.2.1 The designer has made use of a symbolic 'Pac-man-like' shape to indicate consumption. The shape of the symbol is made up of hundreds of people, and by placing the country of India in the path of its gaping mouth, it makes the viewer aware that soon there will not be enough 'space' in the country for all in its inhabitants.

The 'Pac-man-like' symbol also represents a pie-chart indicating the ratio of people to land.

The size of the symbol is a metaphor for the amount and size of rapid growth of the population in relation to the relatively small and 'shrinking' landmass of India.

(2)

- 5.2.2 The Gestalt law of figure-ground is applicable to the poster because the eye perceives both the 'Pac-man' shape and the shape of the continent of India as distinct from the plain background- thus creating a stable figure-ground relationship.

The Gestalt law of uniform connectedness can be applied to the figures on the left of the poster. The human figures are perceived as a single unit because of their similar shape, size, tonal value and upright stance.

Allocate 2 marks for each Gestalt principle.

(4)

- 5.3 The impact of the item, a very clear, close-up photograph of a plastic bag, is brought about by the stark white background which projects it forward and helps to intensify the textures and tones of the bag. The fact that it is clearly 'alone' on a deliberately uncluttered page, also enhances its impact. The simple stark sans-serif white type placed in the block below the bag powerfully brings home the plight of the hungry. The simple image and composition contribute to the impact of the message.

(4)

[20]

Q5.2 & Q5.3 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Observation/ Recall, Comprehension	30%	Part of 5.2.2	3
Middle order	Application	50%	5.2.1 + Part of 5.2.2 + Part of 5.3	2 + 1 2
Higher order	Analysis Synthesis Evaluation	20%	Part of 5.3	2

QUESTION 6: ENVIRONMENTAL (10 marks)

Choose ONE of three choices

AS1: Make value judgements informed by a clear understanding of design.

AS2: Understand Design theory and use Design terminology correctly.

AS8: Demonstrate an understanding of the Designer's responsibilities in reaction to environmental issues and sustainable Design.

AS10: Demonstrate an understanding of responsible Design by taking into consideration human rights and environmental issues throughout the process.

6.1 Note: A learner may use any example from the LTSM as prescribed in the LPG (i.e. the Woolworths Book 'Living with Design Daily' or 'Craft Art in SA' by E. Coetsee).

- The designer/project/group should be named.
- Examples of work should be named and briefly described by learners.
- Environmental concerns should be fully understood and the connections between the designs and the issue explained.
- An essay length of 1 page would be the optimum.

The work of any recognised South African designer can be discussed as long as the designer addresses environmental issues in some manner.

The following are three typical examples:

Example 1:

Joseph Diliza works in the Western Cape Province. He makes notebooks for example, which rely on natural textures for their design appeal. He also prints ethnic designs onto these which link up with his African origins.

He also makes lampshades which complement the natural look so popular in tourist lodges. These also have the natural rough textures and unbleached colours of the original plant material. He takes raw plant materials and cooks it to soften the fibres. He targets alien plant invaders and helps keep these under control. All of the plants he uses are sustainable so that natural resources are not depleted. Sustainability implies that raw materials will always be available without any long term detrimental effect on the planet.

He also uses recycled paper and cotton waste. It prevents these waste products from building up and occupying valuable land fill areas.

Any other relevant points.

Allocate 10 marks.

Example 2:

Rina King and Crispin Pemperton – Pigotts' New Dawn Energy Systems Design company.

They design production systems especially for manufacturing and agriculture where electricity is not involved. They designed the Vesto Stove, a cooking device that burns biomass fuels (wood, charcoal, briquettes, etc) for longer periods. It was designed for poor, wood-burning households to make available a cooking stove that saves 70% of the fuel normally used, which clearly shows a responsibility towards protecting the environment. It also reduces combustion emissions to legal and safe levels which also indicate that these designers are sensitive towards environmental concerns. The stove is made from locally-made stainless steel giving it a luxurious, stylish appearance and making it appealing to all levels of society. It is saleable without subsidy in the formal sector and economically sustainable in terms of manufacturing and contribution. The product was designed to be affordable and to be made using available production techniques. It was inspired by earlier stoves, particularly the Tsotso stove from Zimbabwe and the South African 'mbaula'. It allows for the burning of a wide range of fuels in an ordinary fire, as well as dry dung, which it burns very cleanly.

Any other relevant points.

Allocate 10 marks.

Example 3:

Andy Horn

Background

- An eco-architect that lectures on 'Sustainable Design' at the University of Cape Town.
- He established 'Eco Design', a Cape Town based company.

Beliefs/Aims

- Environmental concerns will revolutionise Architecture, standard architectural practices will look obsolete and unsustainable.
- Eco-architecture is an architectural form in its own right and is not a particular style, trend or indigenous form of architecture.
- Eco-architecture develops out of and works with the climate, the local geography, the culture of the site and its surroundings. It combines the best of old and new technology.

The characteristics of an 'Eco-architecture' house:

- It is designed to take up the minimum of space on the plot on which it is built.
- It would be built from locally-sourced or recycled materials, for example, clay, stone, fired clay-brick, timber, reed and grass (thatch).

- Avoids the use of polluting, unhealthy and non-biodegradable materials, for example, vinyl flooring, solvent-based paints, fibreglass and asbestos, along with toxic wood treatments and finishes.
- Does not use imported hardwoods from the earth's precious rainforests because they are unsustainable.
- Contains solar panels.
- Occupants experience better health and productivity levels. (10)

The following are examples of his work:

- 2000 – 2002 House Patience (straw bale construction) in Greyton, South Western Cape.
- 2002 – 2004 New staff 'eco' housing for Twin Streams Environmental Centre, funded by Mondi Forests, Mtunzini, KZN.

Any other relevant points.

Allocate 10 marks.

Q6.1 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Recall	30%	Part of 6.1 – essay	3
Middle order	Application	50%	Part of 6.1 – essay	5
Higher order	Analysis Synthesis Evaluation	20%	Part of 6.1 – essay	2

- 6.2 6.2.1
- 1 – Solar Panels for harvesting electricity and water heating
 - 2 – Energy efficient lighting e.g. LED or Compact fluorescent lamps (CFL's)
 - 3 – Water-efficient shower heads
 - 4 – Gas for cooking and heating
 - 5 – Rainwater collection tanks

Choose any three. (3)

- 6.2.2
- Natural, sustainable materials are used such as clay, thatch and wood ensuring the building's environmental friendliness.
 - The integration with its environment (placement between trees), visually, also makes it environmentally friendly.
 - The fact that the Indigenous Knowledge System (Venda hut construction) is used in its construction shows respect for a social grouping/ culture and ensures the safe-keeping of this knowledge. (3)

6.2.3 An example:

‘Testing the Waters’ by Julie Bargmann is a transformation of a former coal mine into a park for acid mine drainage and community recreation. The park consists of a landmass carved into a passive AMD treatment system which allows the public to witness the cleansing of the polluted

water physically – as it goes through a series of retention basins and spillways and changes colour from orange to green to blue-green. The park also consists of a garden of alternative rows of native trees and shrubs, as well as recreational amenities such as picnic grounds, play areas and wildlife trails. (4)

The learner must name the designer and work, and must also supply at least 3 relevant points regarding the work.

[10]

[10]

Q6.2 LEVEL	COGNITIVE SKILLS	WEIGHTING %	QUESTIONS	MARKS
Lower order	Recall, Comprehension	30%	6.2.1	3
Middle order	Application	50%	Part of 6.2.2 + 6.2.3	1 + 4
Higher order	Analysis Synthesis Evaluation	20%	Part of 6.2.2	2

TOTAL SECTION B: 30

GRAND TOTAL: 100

**ANALYSIS GRID OF GRADE 12 JUNE EXAMINATION 2009, DESIGN
PAPER 1**

QUESTIONS	COGNITIVE SKILLS	LEVEL	WEIGHTING%	MARKS	LOS and ASS
1.1.1	Application	Middle order	20	2	LO3 AS1
1.1.2	Observation, Comprehension, Application	Lower order Middle order	30	3 3	LO3 AS1 AS2
1.2	Observation Comprehension Analysis Synthesis Evaluation	Lower Middle Higher	30 50 20	2 3 5	LO3 AS1 AS2
1.1.3	Analysis Synthesis Evaluation	Higher order	30	2	LO3 AS1 AS2
2.1.1	Observation, Recall Comprehension	Lower Middle	30 10	3 1	LO3 AS3
2.1.2	Application	Middle order	20	2	LO3 AS3
2.2.1	Application	Middle order	20	2	LO3 AS3
2.2.2	Analysis Synthesis Evaluation	Higher order	20	2	LO3 AS5
3.1.1	Observation, Recall Comprehension Application Analysis Synthesis Evaluation	Lower order Middle order Higher order	10 30 20	1 3 2	LO3 AS1 AS2 AS4
3.1.2	Observation, Recall Comprehension Application	Lower order Middle order	20 20	2 2	LO3 AS1 AS2
4.1	Observation, Recall Comprehension Application Analysis Synthesis Evaluation	Lower order Middle order Higher order	30 50 10	3 5 1	LO3 AS4

4.2.	Analysis Synthesis Evaluation	Higher order	10	1	LO3 AS14
4.3	Recall, Application, Synthesis, Evaluation	Lower Middle Higher	30 50 20	3 5 2	LO3 AS3 AS7
4.4	Recall, Application, Synthesis, Evaluation	Lower Middle Higher	30 50 20	3 5 2	LO3 AS2
5.1.1	Recall, Application, Synthesis, Evaluation	Lower Middle Higher	30 50 20	3 5 2	LO3 AS3 AS7
5.1.2	Recall, Application, Analysis, Synthesis, Evaluation	Lower Middle Higher	30 50 20	3 5 2	LO3 AS3 AS7
5.2.1	Application	Middle	20	2	LO3 AS3
5.2.2	Recall, Observation, Application	Lower Middle	30 10	3 1	LO3 AS3
5.3	Application Analysis, Synthesis, Evaluation	Middle Higher	20 20	2 2	
6.1	Recall , Application Analysis, Synthesis, Evaluation	Lower Middle Higher	30 50 20	3 5 2	LO3 AS2 AS8 AS10
6.2.1	Recall, Observation	Lower	30	3	LO3 AS8
6.2.2	Application Analysis, Synthesis, Evaluation Application	Middle Higher Middle	10 20 40	1 2 4	AS8 AS7 AS10