

**2003 Graphic Communication**

**Advanced Higher**

**Finalised Marking Instructions**

1. When producing a desk top publication the principles of design should be considered.  
Describe how each of these principles have been applied to Question 1 Worksheet. (7)

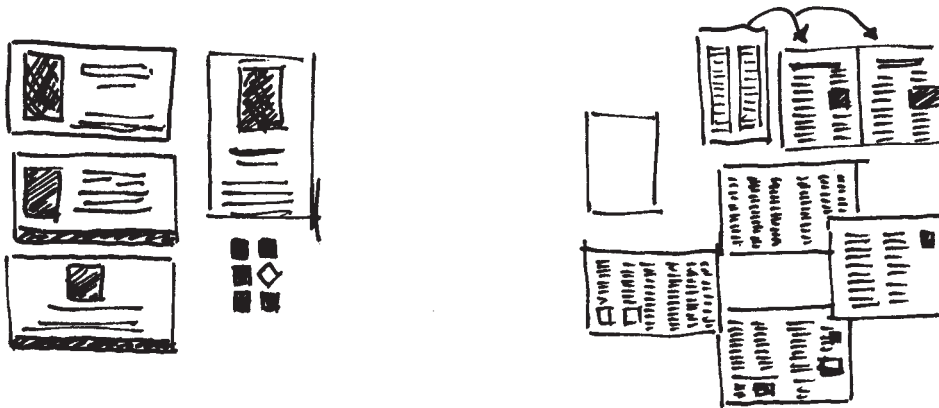
- (i) Balance *Balance is created by three elements (text block, graphics and vertical text). In this example there is no structured symmetrical or asymmetrical balance to the page. The informal balance creates interest in the page.*
- (ii) Proportion *There is equal balance between text blocks and graphic items and white space. In this example proportion has developed an aesthetically pleasing relationship between each of the elements used.*
- (iii) White space *Areas of white space are evident around the page to give the layout some "breathing room". The designer has not crammed too much on to the page to ensure the reader can clearly pick out text.*
- (iv) Contrast *Line thickness ie thick and thin give a contrast. Dark graphic items contrast with white background. Bold headings contrast with normal body text.*
- (v) Rhythm *Is the use of repetition ie blue lines, grey background on graphic items, thick blue line under each sub-head. Movement generated by position of small graphic items and lines linking them with text. Reader has to jump from item to item to read.*
- (vi) Alignment *Lack of alignment adds to the feel of movement on the page ie reader has to jump from item to item to read. Alignment is restricted to left justification of text.*
- (vii) Proximity/unity *Blue lines capture text. Black lines contribute to the feel of enclosure around the text block.*

2. Explain the purpose of producing thumbnail sketches and visuals when designing a desktop publication.

Thumbnail sketches

Purpose – *These quick pen or pencil sketches allow the designer to try out several ideas and zero in on the most likely layouts before beginning a project. Creating thumbnails is a crucial part of the brainstorming aspect of your design work.*

2



Visuals

Purpose – *The manually drawn items are **full size** and give the client a good idea of what the end product would look like. Gives the client an opportunity to visualise the end product and make any changes.*

2

(4)

3. The Banchory Junior Golf Club business card shown below is considered to be poorly designed.

Sketch, in the space provided below, an improved design and justify improvements made in terms of **line**, **colour** and **texture**.

Alternative design –

*The given text and graphic design included.*

1

*Layout is clear, easily understood and good use made of any additional graphic items.*

2

**Line** – *Relevant use within the alternative design.*

1

*Lines can be long or short, straight or curved. Lines can be horizontal, vertical or diagonal. They create patterns. Lines can be solid, dashed, thick, thin or of variable width.*

*Sometimes a designer uses a line alone to divide or unite elements on a page.*

*Lines can denote direction of movement (as in diagonal lines and arrows) or provide an anchor to hold elements on a page (such as lines at the top, bottom or sides of a page).*

*You can use lines in conjunction with other elements – a pattern of thick and thin lines arranged in a circular shape.*

1

**Colour** – *Relevant use within the alternative design.*

*Colour is used to attract attention. It can be subtle or bold.*

*Colour can be found in the paper, the text or the graphic elements. A monochromatic colour scheme uses a single colour, perhaps in various tints, while other layouts utilize combinations of two, three or more colours.*

*Colour can be used to elicit specific emotions and reactions. Red is typically thought of as an attention-grabbing, hot colour. Blues are more calming or convey stability. Some colour combinations are used to create a specific identity (corporate colours, school colours) or may be used in conjunction with texture to simulate the look of other objects (the look of plain paper wrapping or neon lights, for example). Colour may provide cues for the reader.*

1

**Texture** – *Relevant use within the alternative design.*

*For desktop publishing, actual texture is the feel of the paper. Is it smooth to the touch or rough? Textures can also be visual backgrounds that simulate familiar fabrics, stone, grass and other textures are common.*

(6)

4. A pictorial view and elevation of a water bottle and cap are shown.

Describe, with the use of sketches and appropriate terminology, how to produce a 3D CAD **solid** model of the bottle and the cap using only **3D Primitives** and **Boolean** operations.

(5)

*Base – Create cylinder the full size of the base – fillet bottom to create curve. Create cylinder the size of the inside in bottle, move to inside the base. Boolean subtract to leave hollow.*

*Lid – Using three cylinders and a cone, build up objects to produce outside shape (excluding mouthpiece, Boolean operation Union. Using two cylinders and a cone build up shape to produce the inside, Boolean operation Union. Move two pieces together, Boolean operation subtract.*

*Create torus (flattening of top and bottom required). Create cylinder, move into position, Boolean operation subtract. Move amended torus into position, Boolean operation Union.*

**1 mark for clear sketches.**

5. Vector and Bitmap images can be used in the production of desk top publications.

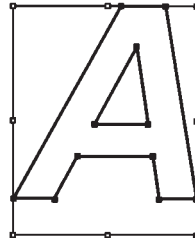
- (a) Describe, with the aid of sketches, the differences between a Vector and a Bitmap image.

1

**Bitmap Image**



**Vector Image**



- (b) Explain the advantages to a desk top publisher of using a Vector image in comparison to a Bitmap image.

2

*Vector images can be scaled, skewed, stretched or otherwise manipulated without losing their quality. The same can not be said of Bitmap, which, when scaled will lose its original map of bits.*

*Vector images shown on a monitor are representations of points and their relationship to each other, each of which is stored on the computer as simple values and mathematical equations. These equations are often referred to as "Bezier curves".*

*Bitmap images are stored as a vertical and horizontal array of pixels. The resolution of these images determines how many of these pixels exist over a set distance ie pixels per inch/centimetre.*

*Unlike Vector images Bitmaps have large file sizes, which can create storage problems.*

- (c) State the type of image best suited to:

1

- (i) Vector format – *page layouts, type, line art or illustrations*  
 (ii) Bitmap format – *photographs and images with shading*

(4)

6. "Offset Lithography" and "Flexography" are two common methods of industrial colour printing.

- (a) Describe the most common use of Offset Lithography and explain why it is used in this way. 2

*Leaflets, booklets, magazines and catalogues.*

*Halftones and small text better produced with Offset Lithography.*

*Cheap, most cost effective method of printing.*

*Printing presses can deal with up to six colours, allowing use of special inks such as fluorescent.*

- (b) Describe the most common use of Flexography and explain why it is used in this way. 2

*Flexography preferred method for fast drying inks on porous materials such as polythene bags.*

*Rubber plate can be altered (patched) so more cost effective for minor changes.*

*High speed, high output, although ink can spread so limitations placed on type of work.*

- (c) Complete the steps in the Offset Lithography process. 3

(i) Separated image has been exposed to film through a halftone screen.

(ii) *The "Lith" is exposed onto a light sensitive plate, which once treated, the print areas become resistant to water.*

(iii) *When ink is rolled over the plate, it only adheres to the image areas, Offsetting the ink from the ink roller to the paper.*

(iv) *The paper is moved from plate to plate to build up the colours.*

**(7)**

7. Explain the following DTP terms, using sketches where appropriate.

(3)

(a) Orphan

*A word or line belonging to the following paragraph left on its own at the bottom of the page or column.*

(b) Running Headline

*A headline which runs from one page to another.*

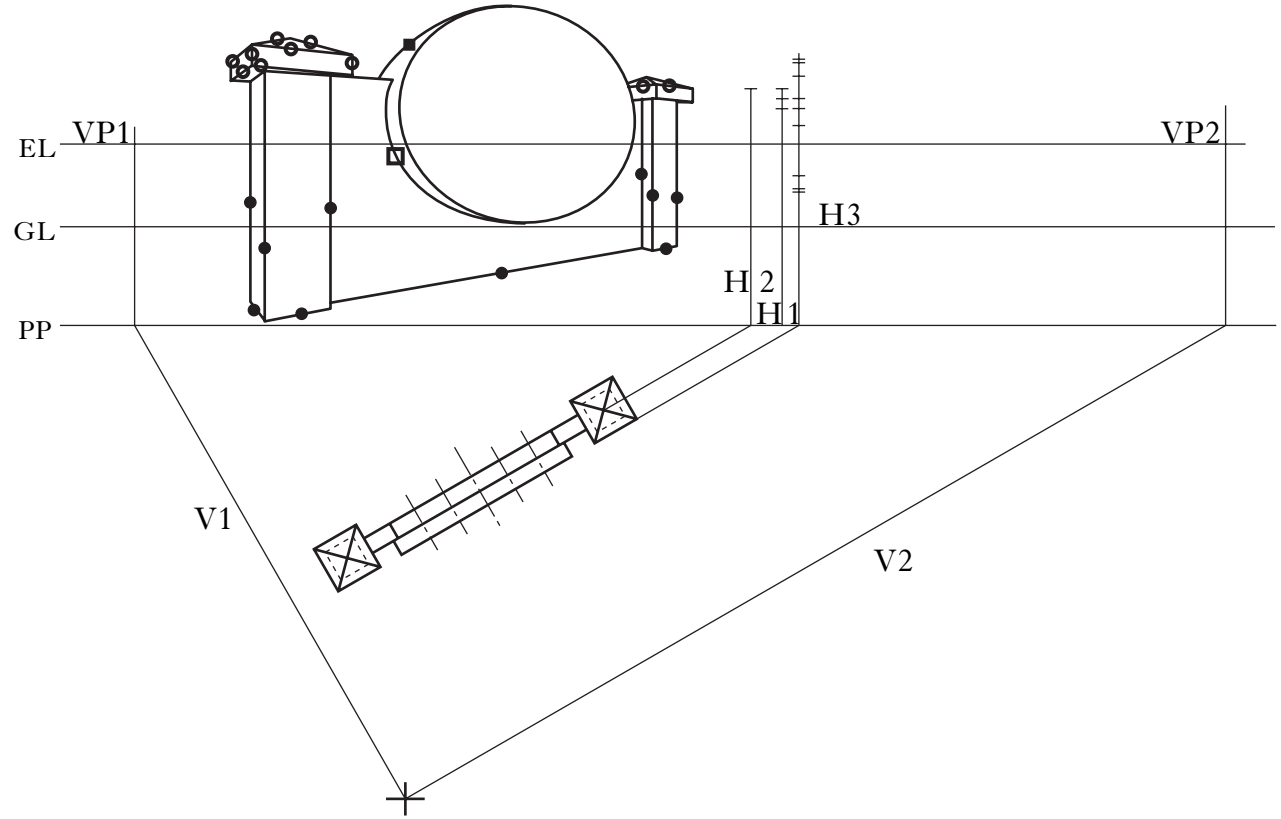
(c) Camera Ready Copy

*Any artwork or finished work which is ready to be put to a process camera for reproduction.*

Question 8—measured perspective of wall and feature

**Pillars**

- (a) Location of V1 + V2 (½ for each) **1**
- (b) VP1 + VP2 (½ for each) **1**
- (c) Height Line (Pillar – H1) **1**
- (d) Pillars (●) **3**  
 6 vertical, 5 ground + 2 top  
 11 – 13 = 3; 9 – 10 = 2½;  
 7 – 8 = 2; 5 – 6 = 1½; 3 – 4 = 1; 1 – 2 = ½
- (e) Cope Apex Height (H2) **1**
- (f) Cope × 2 (○) **4**  
 5 vertical, 5 sloping, 10 horizontal  
 18 – 20 = 4; 15 – 17 = 3½;  
 12 – 14 = 3; 10 – 11 = 2½;  
 7 – 9 = 2; 4 – 6 = 1½;  
 2 – 3 = 1; 1 – 2 = ½



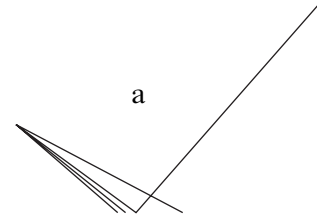
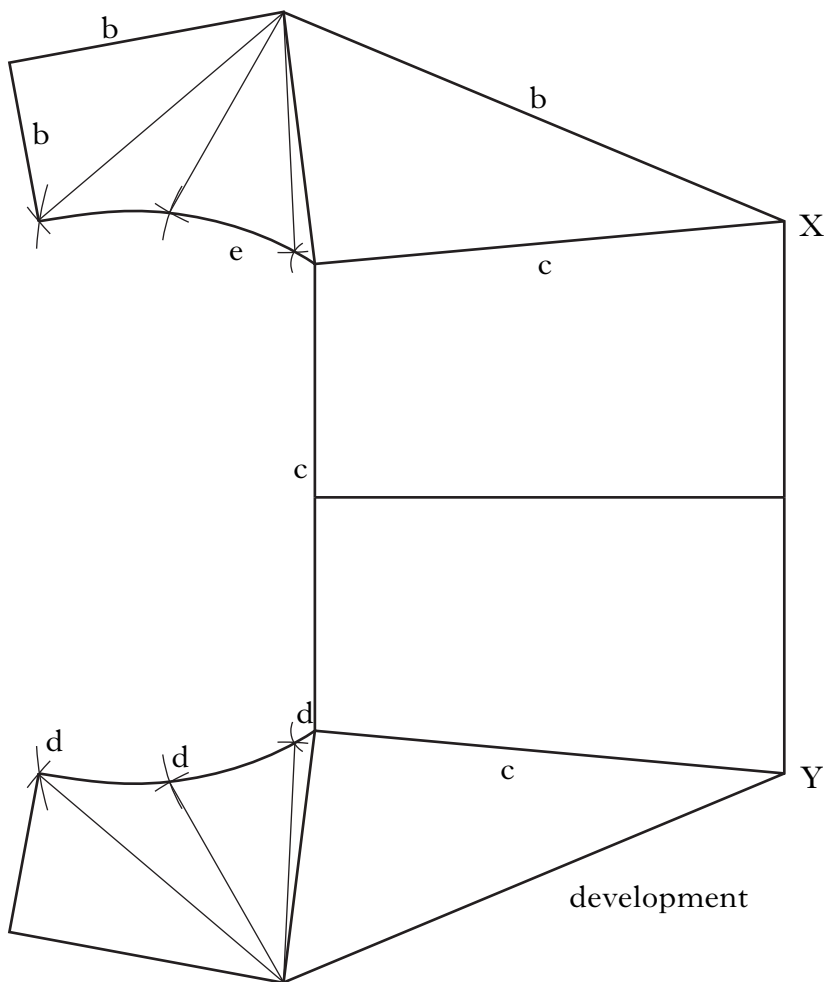
**Ellipse**

- (g) Construction on elevation and plan **1**
- (h) Height Line (H3) **1**
- (i) Curve Construction **2**  
 (10 – 12 = 2; 7 – 9 = 1½; 4 – 6 = 1; 2 – 3 = ½)
- (j) Smooth curve (Complete/Front) **2**
- (k) Part Curve (bottom) (□) **1**
- (l) Part Curve (top) (■) **1**
- (m) Wall top (2 – ½ each) **1**

**Total (20)**

Question 9—development of hopper

- |   |             |
|---|-------------|
| (a) True length construction 5 for 2 ( $3 = 1, 2 = \frac{1}{2}$ ) | 2           |
| (b) Straight line perimeter, 6 points @ $\frac{1}{2}$ each        | 3           |
| (c) True shape of panel at X Y, 3 lines @ $\frac{1}{2}$ each      | 3           |
| (d) Development construction, 6 points @ $\frac{1}{2}$ each       | 3           |
| (e) Curves, 2 curves @ $\frac{1}{2}$ each                         | 1           |
| <b>Total</b>  | <b>(12)</b> |



Question 10—end elevation, auxiliary plan and development of chute

- |              |  |             |
|--------------|--|-------------|
| (a)          | Plan circle 1 @ ½                                    | ½           |
| (b)          | 6 generators on Plan (4 for ½)                       | 1           |
| (c)          | 3 generators on elevation                            | ½           |
| (d)          | End Elevation 6 lines for 2 (4 = 1½, 3 = 1, 2 = ½)   | 2           |
| (e)          | Auxiliary Plan 6 lines for 2 (4 = 1½, 3 = 1, 2 = ½)  | 2           |
| (f)          | Curve construction 5 points for 1 (3 = ½)            | 1           |
| (g)          | Smooth Curve   | 1           |
| (h)          | Development true length generators 7 for 1 (5 for ½) | 1           |
| (i)          | Extra points on circle 2 for 1 (1 for ½)             | 1           |
| (j)          | Outline 4 lines & curve (3 = 1½, 2 = 1, 1 = ½)       | 2           |
| <b>Total</b> |  | <b>(12)</b> |

