

Remember that Graphic Communication is essentially a **practical** subject, and you shall have had experience of actually undertaking most of the tasks you shall be questioned on in the exam.

Therefore, the best approach when attempting to answer the questions posed is to imagine you are in the classroom working on one of your projects. Take time to analyse what the question is asking you; can you relate it to anything you have done in your assignment or unit tasks? The answer is almost certainly going to be yes—if not all the question,

then definitely parts of it. Remember that you don't need to answer all the parts—if you don't know one stage of it there shall be other areas you will do.

Nevertheless, it is still essential you have read and understood your notes. You shall have to be familiar with a range of terms—from DTP tools, through to layout elements and principles, modelling techniques and terms, BSI standards and terminology. And general computer applications and processes associated with Graphics in industry, etc.

The following pages shall attempt to cover each of the topics you are likely to be questioned on. They shall hopefully give you some tips and strategies to assist you in answering them to the best of your ability.

The box opposite is a snapshot from the SQA guidelines issued to examiners, and gives you an indication what is expected when asked to **describe, explain, compare or state**

a response to a question. It is vital you give each question full consideration before answering—ie, are you describing, explaining comparing or stating the answer. This is likely to be similar to your other subjects as it is in line with the principles of CfE.

Inveralmond Community High School Technical Department



(c) For each candidate response, the following provides an overview of the marking principles. Refer to the Marking Instructions for further guidance on how these principles should be applied.

(i) Questions that ask candidates to **describe**

Candidates must provide a statement or structure of characteristics and/or features. This should be more than an outline or a list. Candidates may refer to for instance, a concept, experiment, situation, or facts in the context of and appropriate to the question. Candidates will normally be required to make the same number of factual/appropriate points as are awarded in the question.

(ii) Questions that ask candidates to **explain**

Candidates must generally relate cause and effect and/or make relationships between things clear. These will be related to the context of the question or a specific area within a question.

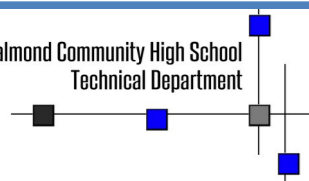
(iii) Questions that ask candidates to **compare**

Candidates must generally demonstrate knowledge and understanding of the similarities and/or differences between, for instance, things, methods, or choices. These will be related to the context of the question or a specific area within a question.

(iv) Questions that ask candidates to **state**

Candidates must present an answer in brief form.

(d) Candidates can respond to any question using text, sketching, annotations or combinations where they prefer. No marks shall be awarded for the quality of sketching. Marking will relate only to the information being conveyed.



CAD questions

The CAD question shall require you to describe and explain different stages of the production of a model (s) and assembly. You will be asked to explain different modelling terminology, and suggest how the assembly shall be produced with references to **constraints**. At the end of the question you shall have to use your knowledge of CAD to come up with a modelling plan/ model of a further part that you must **create** to answer the given design brief—usually related to the existing model you have examined. **IT IS ESSENTIAL YOU SUPPORT YOUR ANSWER WITH AS MUCH INFORMATION AS POSSIBLE—INCLUDING SKETCHES AND REFERENCE TO THE DIMENSIONS GIVEN.**

Stage 1

Orthographic sketch

3D CAD model of the tap

1) Describe the 3D modelling techniques proposed for each stage, making reference to all relevant dimensions from the orthographic sketch. You can sketch, annotate the sketches provided and/or use text in your answer.

(i) _____

(ii) _____

2) Describe, with reference to 3D CAD modelling techniques, how the tap body can be modelled. You should make references to the dimensions shown above.

Look at the information given via the sketches; what are the main dimensions, what shape does the planned model have? Think about your Unit/ Assignment work. At Higher level the answer is probably going to involve a loft or a sweep—**but may not!** Heavily support your answer with sketches and dimensions like you did in your modelling plans.

Stage 2

Component parts of the portable speaker casing

1) Describe, with reference to 3D CAD modelling techniques, how the neck of the tap can be created and hollowed to allow water to flow through it.

Now you may be asked to use another feature to produce additional parts. It is unlikely it shall be the same technique so don't use the same one you did in Stage 1.

Stage 3

Fig 1

A partially assembled 3D model of the tap is shown in Fig 1 above.

Fig 2

The tap components shown in Fig 2 above were created using a "bottom up" approach.

(c) Describe "bottom-up" CAD modelling.

5. (continued)

(d) Describe, with reference to constraints, how the neck and body components of the tap will be assembled.

(e) Describe, with reference to constraints, how the control lever and body components of the tap will be assembled.

Now there may be an assembly element to the question. Think about what is being joined together, and how. Extra parts may be included. If these are from a library of parts, remember why that is—to save time and provide uniformity of parts. Heavily support your answer with sketches, mentioning all relevant constraints.

Stage 4

2. (continued)

Two blind holes in the case.
Ø 10mm
10mm deep

140

PLAN

ELEVATION

The bottom of the handle must be a minimum of 2mm from the hole.

ALL SIZES

3. (continued)

(e) Produce a modelling plan which could be used to create a 3D CAD model of a simple handle to fit the blind holes in the casing. The handle will be glued into the holes. You can sketch, annotate, and/or use text in your answer.

At this point, you may have to create a part from scratch based on information given with the existing part. In the case above, it is a handle which is required to fit the existing speaker casing. For this, consider the relevant information such as hole size, position, etc. again, give as much information as possible.

Layout techniques/ magazine analysis



For this question, you must refer to the magazine layout shown in the supplement at the end of this Exemplar Question Paper.

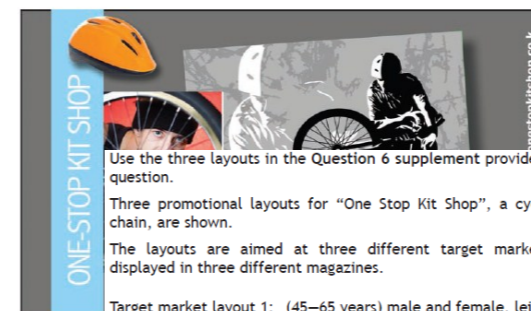
(a) State two instances where the graphic designer has created depth to add interest in the magazine layout.

(b) State an example of emphasis in the layout and explain the effect created.

The graphic designer has made use of value in the magazine layout.

(c) State where value has been used in the layout and explain the effect it has.

(d) Describe how the graphic designer has created an informal and interesting look to the magazine layout.



Use the three layouts in the Question 6 supplement provided to answer this question.

Three promotional layouts for "One Stop Kit Shop", a cycling accessories chain, are shown.

The layouts are aimed at three different target markets and will be displayed in three different magazines.

Target market layout 1: (45–65 years) male and female, leisure cycling, working and retired singles and couples, grown-up families, TV influences: gardening and travel shows

Target market layout 2: (25–45 years) male and female, working, keen cyclists, adventure cycling, young families or no family commitments, TV influences: sport and Top Gear

Target market layout 3: (15–25 years) predominantly male, serious adventure and mountain biking, single, independent, TV influences: reality shows, indie and grunge music

The graphic designer has used a range of design elements and principles in each of the three layouts to appeal to the different target markets.

(a) Explain why the styles of typeface used in layout 1 will appeal to its target market.

These sort of questions, when you are asked to compare different layouts, require you to analyse the different styles adopted by the designer. This may be due to different colours, shapes, graphics and fonts being applied. A lot of this may be **subjective**, so as long as you can provide a sensible and articulate reason for your answer, you have a good chance of achieving marks.

DTP tools, effects

These questions are more concerned with the technical methods adopted to produce the layout in question. The answers expected shall be concerned with the images used and DTP techniques such as text wrap, flow along a path, bleed etc. Again, you shall have to be familiar with your notes and it's important that you justify any answer you give.

3. The promotional layout below is used to attract consumers to a new product.



Explain how the graphic designer has used typeface, colour and choice of images to attract consumers.

4



Layout B pre-press copy



3. Infographics are a popular way of presenting statistical information.



(a) Explain how the design of the above infographic has been influenced by choice of images, colour and typeface, in attempting to communicate the information.

(b) Examine the feature shown below.

(i) State the name of this feature which is in each corner of layout B. 1



(ii) Explain the purpose of this feature. 1



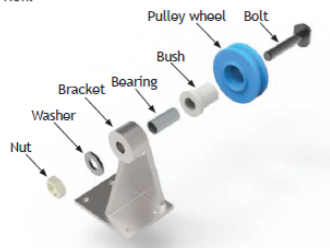
(iii) Explain why the graphic designer used bleed in layout B. 1



BSI/ Engineering drawing type questions

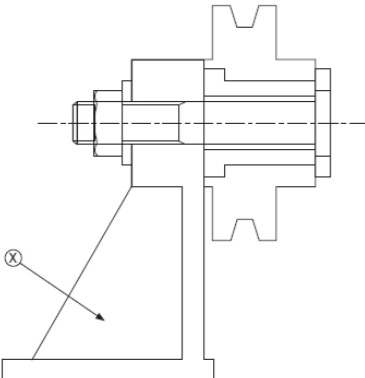
These questions are all based on your knowledge of this element of the course, and answers must be 100% correct to achieve marks as they are concerned with BSI standards which by definition are set in stone. The only way to achieve marks here is to have studied your notes and done the relevant homework tutorials.

4. Components that make up a pulley wheel assembly are shown below as an exploded view.



An incomplete sectional elevation, cut along a central vertical plane, is shown below.

(a) (i) Apply hatching to the assembled elevation to show the different components taking account of British Standards. You may sketch the section lines on the view and you can use a straight edge if you wish.



(ii) State the name for the feature shown at X.

4. (a) (continued)

The bolt used in the assembly has flat sections on the end for a spanner to fit.

(iii) Apply the British Standards convention for this flat on the bolt shown below (Figure 1).

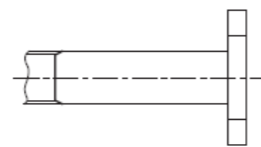


Figure 1



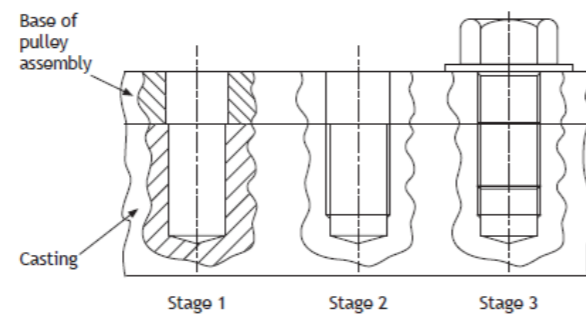
Figure 2

The 3D view in Figure 2 shows the pulley assembly bolted to the base to another component. The drawing below shows the three stages.

Stage 1 — a blind hole is machined in the component

Stage 2 — a thread is cut into the blind hole

Stage 3 — an M10 bolt and washer is fitted to secure the pulley assembly



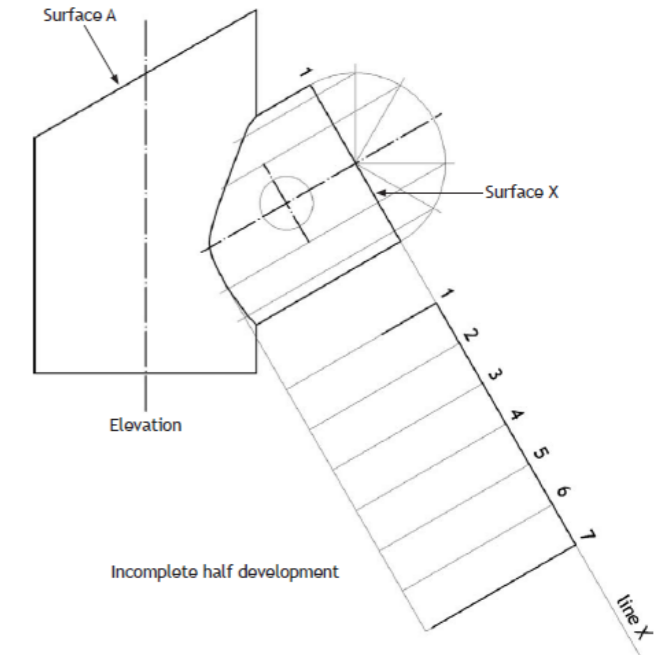
Stage 1

Stage 2

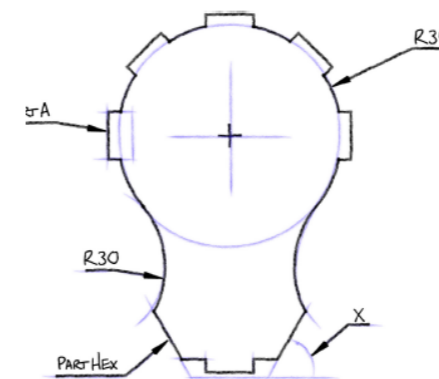
Stage 3

These questions are based on the engineering drawing part of the course. In the old Higher, you would have been asked to provide the answer on the drawing board. Now, it is just a sketch, which simplifies things somewhat. Take your time and think about what the question asks you. Most importantly, it is essential that you are accurate with your response—so take your time when measuring and sketching.

5. The elevation of two interpenetrating cylindrical pipes is shown below. A surface development of interpenetrating cylindrical pipes is being generated using 2D CAD. The elevation and part construction work is shown below.



A USB hub has been modelled by a CAD technician.



A 3D CAD model of the USB hub and its preliminary sketch are shown above.

(a) Describe, with reference to 2D drawing techniques, how you would create a tangent between the R30 and the R35 arcs. You may write your answer and/or sketch in the preliminary sketch on the previous page to support your answer if you prefer.

The USB adaptor has five ports around the upper arc. The CAD technician created a 2D drawing using the information on the preliminary sketch. When drawing the ports, port A was used as the starting point.

(b) Describe, with reference to 2D CAD drawing techniques, how the CAD technician would draw the other ports. You may write your answer and/or sketch in the preliminary sketch above to support your answer if you prefer.
