General Knowledge Interpretation (KI) Homework Tutorials

To successfully complete the following tutorials, you must apply the knowledge you have in the following areas:

- Colour Theory
- Computer Aided Graphics (CAG)
- Building Drawings and Standards
- DTP tools
- The 3 Ps (Preliminary, Production and Promotional Graphics)

THE NOTES REQUIRED ARE ALL ON THE DEPARTMENT'S WEBSITE. - Study them first then attempt the tutorials without them to gain the most benefit from the exercises.

1.

Section A

A supplementary page is included at the end of Section A for use if extra space is required.

1. (a) Sketch what happens to the given graphic when the CAD command is applied to it. *Marks*

(i) Rotate (90°) → 1

(ii) Scale (down) → 1

(iii) Hatch → 1

(iv) Copy → 1

(v) Mirror → 1

(vi) Zoom (out) → 1

(b) State **two** benefits of using the CAD feature, **Library**.

Advantage 1 .....

.....

..... 1

Advantage 2 .....

.....

..... 1

(8)

2. (a) An architect wishes to draw the **Floor Plan** of a house. He has a choice of two scales. *Marks*

(i) State which **two** scales are the common scales for drawing a floor plan.

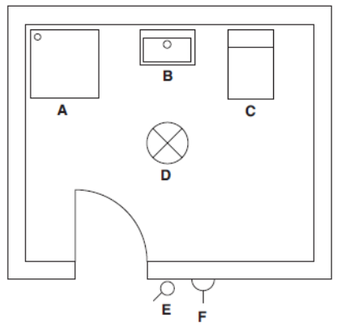
Scale 1 ..... Scale 2 1

(ii) State **two** reasons which might influence his choice.

Reason 1 1

Reason 2 1

(b) Name each of the **British Standards symbols** shown on the graphic.



A .....

B .....

C .....

D .....

E .....

F 3

(c) Two incomplete views of a hollow, thick-walled cylinder are shown. Sketch the **British Standards line types** for centre lines, hidden detail and cutting plane in the appropriate positions. (You may use a straight edge.)

ELEVATION SECTION A-A

3.

Marks

(a) (i) Sketch a rectangle 40 mm × 30 mm in **landscape** format: include the capital letters ABC, to demonstrate the DTP effect, **reverse**.

SKETCH 2

(ii) Describe, by means of a sketch, the term **text wrap**.

SKETCH 1

(b) Describe **each** of the following DTP terms, using a sketch if required.

Footer 1

Column rule 1

Gutter 1

Box 1

(c) A DTP document is planned in stages. State the stage which follows **research**.

Stage 1

(8)

2.

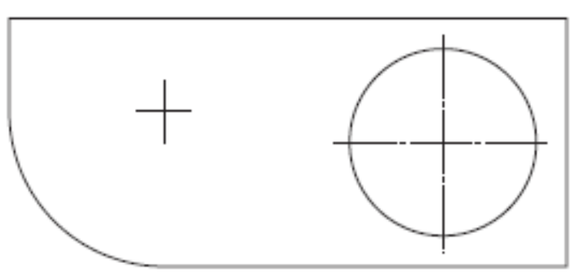
The component below is drawn to a scale of 1:10.

Dimension the drawing, using **British Standards,** to include:

(i) the overall length; **1**

(ii) the overall height; **1**

(iii) the radius. **1**



(3)

A supplementary page is included at the end of Section A for use if extra space is required. *Marks*

1. *Preliminary*, *Production* and *Promotional* graphics are used extensively in the consumer, construction and engineering industries.

Explain the purpose of each **type** of graphic and give **one** example of each.

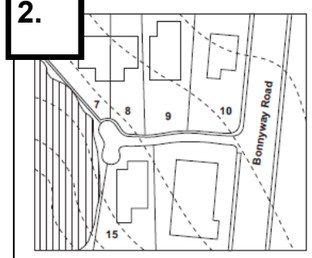
Preliminary Purpose .....
..... 1
Example 1

Production Purpose .....
..... 1
Example 1

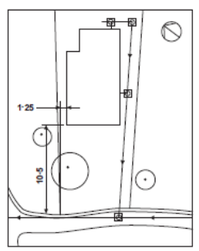
Promotional Purpose .....
..... 1
Example 1

(6)

2.



Block Plan (not to scale)



Site Plan (not to scale)

Marks

(*a*) For each of the above building plan types, state an appropriate British Standard scale.

block plan scale 1

site plan scale 1

(*b*) State **three** features that commonly appear on each of the two types of given plans; (do not use the same feature more than once).

block plan feature .....
feature .....
feature .....

site plan feature .....
feature .....
feature .....

3.

(*a*) Other than speed of production, describe **three** advantages that architects could find by using computers for their graphics needs compared with manual methods of drawing production.

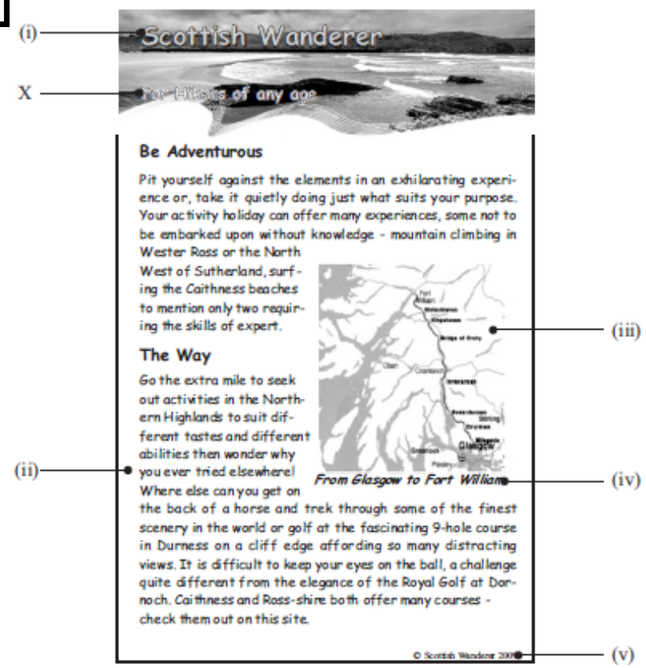
1 .....
.....
2 .....
.....
3 .....
..... **KI 3**

(*b*) Other than set-up costs, describe **two** things that could be a disadvantage of using a CAD system.

1 .....
.....
2 .....
..... **KI 2**

4.

Marks



(*a*) State the desk top publishing **terms** for each of the numbered elements.

(i) ..... (ii) 2

(iii) ..... (iv) 2

(v) 1

(*b*) State the term for the effect used on the text at X "For Hikers of any age".

..... 1

(6)

Tutorial 3

1.

Section A

Marks

A supplementary page is included at the end of Section A for use if extra space is required.

1. *Preliminary*, *Production* and *Promotional* graphics are used extensively in the engineering, construction and consumer industries.

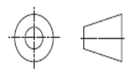
   Describe the **purpose** of each type of graphic and state one **example of a graphic** of that type.

   (*a*) *Preliminary*
   Purpose .....
   1
   Example of graphic 1

   (*b*) *Production*
   Purpose .....
   1
   Example of graphic 1

   (*c*) *Promotional*
   Purpose .....
   1
   Example of graphic 1

   (6)

2. 

   (*a*) State the name of the British Standard Symbol shown above.

   Name 1

   (*b*) State the **type** of drawing where this symbol would be used.

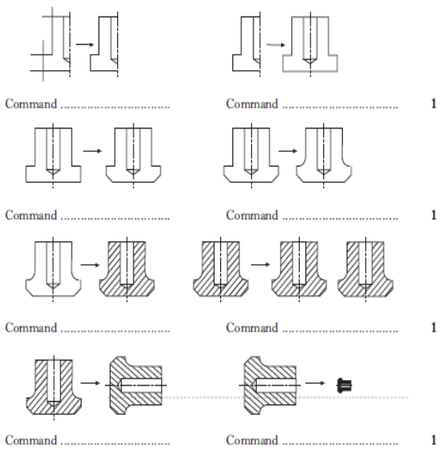
   1

   (*c*) State the **two** types of page orientation.

   Orientation 1 ..... Orientation 2 2

   (4)

3. (*a*) Shown below are stages in drawing an object.
   State the CAD command that is indicated at each stage.



   Command ..... Command 1
   Command ..... Command 1
   Command ..... Command 1
   Command ..... Command 1

   (*c*) Two architects exchange CAD drawings electronically by attaching them to an e-mail.
   (i) State the piece of **hardware** required for each computer to allow the exchange of drawings.
   1
   (ii) State a requirement that each computer system must have to allow the architects to open and edit each others drawings.
   1

   [X033/301] **Candidate's Name** _____ (9)

2.

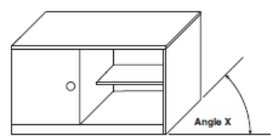
4. Study the drawings shown opposite and answer the following questions.

   (*a*) State the names of the types of view shown at **A**, **B** and **C**.
   View A ..... **View B** .....
   View C ..... KI 3

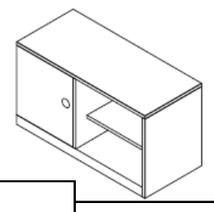
   (*b*) State the names of **two** other views in which you would see all three dimensions.
   Answer 1 ..... Answer 2 ..... KI 2

   (*c*) State the **Angle X** on **View A**.
   Angle ..... KI 1

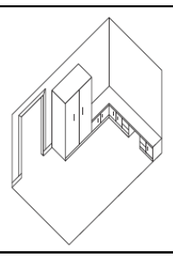
   (*d*) State the general name given to the types of view shown at **A**, **B** and **C**.
   Answer ..... KI 1
   Total (KI 7)



VIEW A



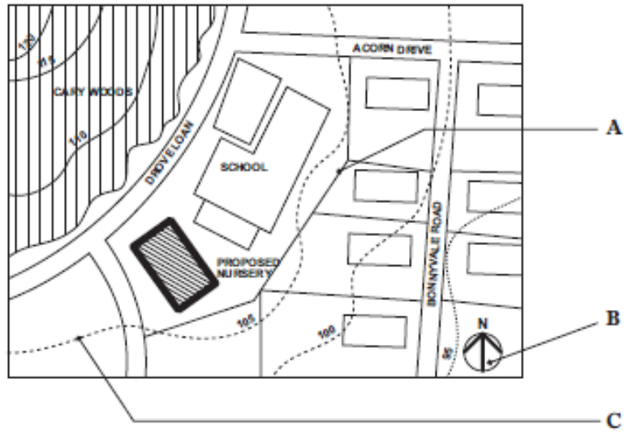
VIEW B



VIEW C

3.

A BLOCK PLAN is shown below, not to scale.



(*a*) State a suitable scale for this type of plan. **1**

(*b*) State the feature represented at **A**. **1**

(*c*) State the name of the symbol represented at **B** and **C**.

B ..... **C** **2**

(*d*) State the names of **two** other types of architectural building plans commonly used.

(i) ..... (ii) **1**

(5)

6. **Colour Gradient**, **Tonal Scale** and **Highlight** are three effects that could be used when rendering an illustration.

   Describe the effect produced by each term.

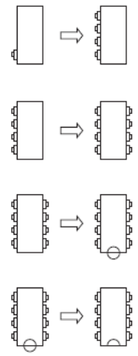
   Colour Gradient .....
   ..... **1**
   Tonal Scale .....
   ..... **1**
   Highlight .....
   ..... **1**

   (3)

1.

A supplementary page is included at the end of Section A for use if extra space is required.

(*a*) Shown below are the stages used in drawing the plan of a microchip using a CAD package. State the **single** CAD command used at each stage. *Marks*



..... 1

..... 1

..... 1

..... 1

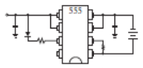
(*b*) (i) State the CAD feature which allows the drawing of the microchip to be saved and used in other circuit diagrams.

..... 1

(ii) State **one** advantage other than time of using this CAD feature.

..... 1

(*c*) (i) State the CAD feature which allows the connections to be revealed or concealed.



..... 1

(ii) State **one** advantage other than time of using this CAD feature.

..... 1

[33/12/01] **(8)**

2.

A company now uses computer-generated models for all its modelling needs.

One of the advantages of computer-generated models is that they can be quicker to produce than built scale models.

(*a*) State **two** other advantages of computer-generated models.

1 .....

.....

2 .....

..... **KI 2**

(*b*) State **two** disadvantages of computer-generated models over built scale models.

1 .....

.....

2 .....

..... **KI 2**

(*c*) State the types of computer-generated views shown at X and Y.

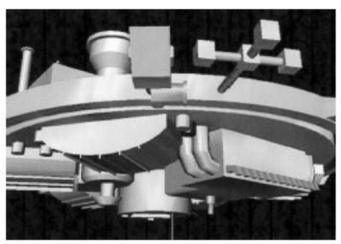
Model X .....

Model Y ..... **KI 2**

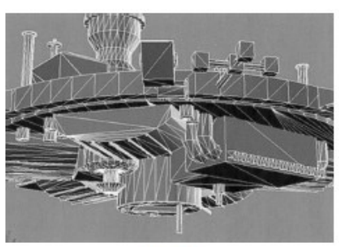
(*d*) State **one** other type of computer-generated model.

..... **KI 1**

Total (KI 7)



View X



View Y

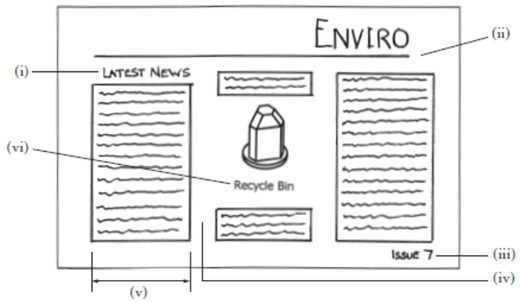
3.

(*a*) There are three stages in planning a DTP document prior to the production of the final electronic version. Research is the first stage. *Marks*

State **two** further stages in planning a DTP document.

Stage .....

Stage 2



Part of the planning stage is shown above.

(*b*) State the page orientation used in the document above.

..... 1

(*c*) State the DTP term for the deliberately created clear area to the left of the word ENVIRO.

..... 1

(*d*) State the DTP term for each of the features (i) to (vi).

(i) ..... (ii) .....

(iii) ..... (iv) .....

(v) ..... (vi) 6

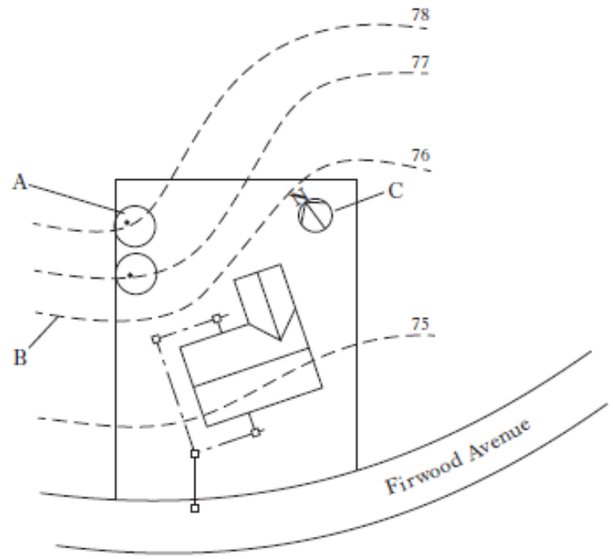
(10)

4.

Sectio

Mark

A **Site Plan** is shown below, not to scale.



(*a*) State a suitable scale for this type of plan.

..... 1

(*b*) State the name of the British Standards (BSI) architectural symbols represented at A, B and C.

A .....

B .....

C 3

(*c*) State the name of **one** other type of architectural building plan.

..... 1

(5)

Tutorial 5

1.

Study the signs shown below and insert the missing information. The first one is done for you.

Sign type	Border colour	Background colour
Safe condition	None	Green

Total (KI 8)

2.

Architects use BSi symbols to represent features on their drawings.

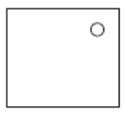
(*a*) State what each of the architectural symbols shown at **A**, **B**, **C**, **D**, **E**, **F** and **G** represents.

A ..... **B** ..... **C** .....

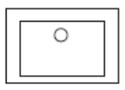
D ..... **E** ..... **F** .....

G .....

KI 7



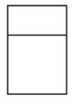
A



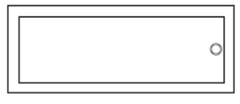
B

C

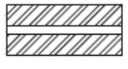
D



E



F



G

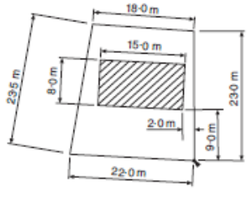
(*b*) Plans are used by architects to show different features and details.

State the name of the plan types shown at **H**, **I** and **J**.

H ..... **I** ..... **J** .....

KI

H



I

J

3.

Colours can be used for many different reasons and in many different situations.

(*a*) State an appropriate colour to use in the following situations.

(i) To represent health and vitality.

Colour .....

(ii) To represent that something is hot.

Colour .....

(iii) To represent that something is environmentally friendly.

Colour .....

(iv) To contrast with yellow.

Colour .....

(v) To harmonise with red.

Colour ..... **KI 5**

(*b*) State the effect created by using a receding colour for the background of a presentation drawing.

Effect .....

..... **KI 1**

(*c*) State what must be added to a primary colour in order to obtain a tertiary colour.

Answer ..... **KI 1**

(*d*) State **two** tertiary colours that contain red.

Colour ..... Colour..... **KI 2**

Total (KI 9)

Colour Matters for the Home

4.

Designers use many different types of drawings when working on new designs.
Study the drawings shown and answer the following questions.

(*a*) (i) State the **individual** names given to each of the views shown at **1**, **2**, **3** and **4**.

View 1 ..... **View 2** .....

View 3 ..... **View 4** .....

(ii) State the **general** name that would be given to **Views 1**, **2**, **3** and **4**.

Name ..... **KI 5**

(*b*) State the **Angle X** on **View 1**.

Angle X ..... **KI 1**

(*c*) State the name given to the **Point P** on **View 3**.

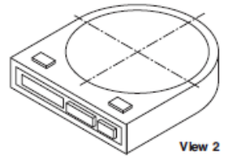
Point P ..... **KI 1**

(*d*) State the name given to the **Line H** on **View 4**.

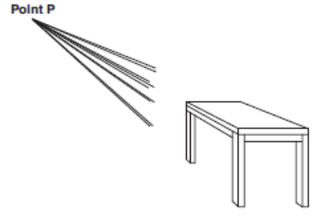
Line H ..... **KI 1**

Total (KI 8)

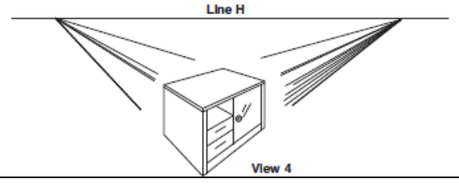
View 1



View 2



View 3



View 4

Tutorial 6

1.

Drawings of a metal bodied torch are shown opposite. State the single CAD command that would be used to create the following details.

(a) To draw the enlarged feature at **A**

Command .....

(b) To create the parts list at **B**

Command .....

(c) To draw the curved feature at **C**

Command .....

(d) To draw the three identical curves shown at **D**

Command .....

(e) To add the size at **E**

Command .....

(f) To draw the straight line at **F**

Command .....

(g) To draw the pattern at **G**

Command .....

(h) To draw the feature at **H**

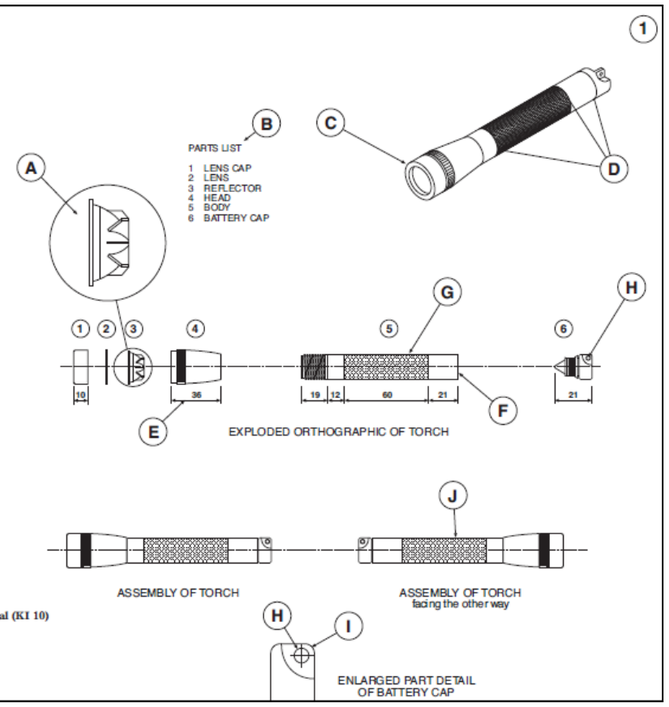
Command .....

(i) To draw the curved feature at **I**

Command .....

(j) To draw the assembly of the torch facing the other way at **J**

Command ..... **Total (KI 10)**



2.

A number of different pictorial drawings are given opposite.

(a) State the names given to the types of pictorial shown at **P**, **Q**, **R** and **S**.

View P ..... **View Q** .....

View R ..... **View S** ..... KI 4

(b) State the name given to line **L** on **View P**.

Answer ..... KI 1

(c) State the angles used at **M** and **N** on **View Q**.

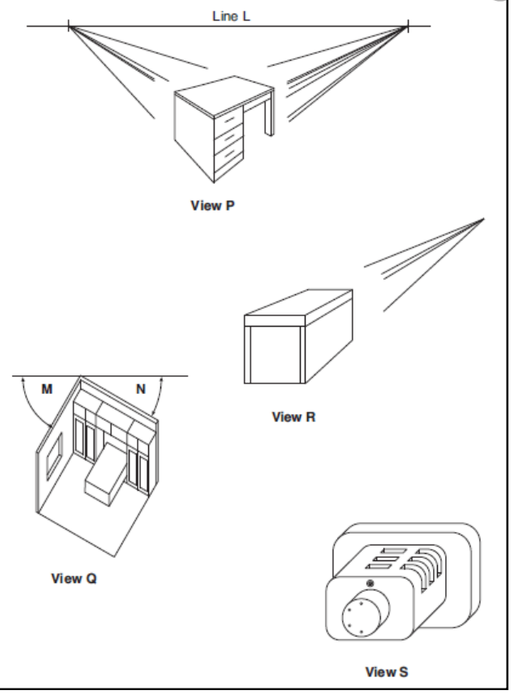
Angle **M** ..... Angle **N** ..... KI 2

(d) State **one** advantage of using **View S** when drawing pictorials.

Advantage .....

..... KI 1

Total (KI 8)



3.

A pictorial view and plans of a house are shown opposite.

(a) (i) State the type of pictorial view shown at **A**.

Pictorial View A .....

(ii) State **one** reason the architect used this type of view.

Reason .....

..... KI 2

(b) State the types of plan shown at **B**, **C** and **D**.

Plan B .....

Plan C .....

Plan D ..... KI 3

(c) From the list of scales given below, state an appropriate scale for **Plan B**.

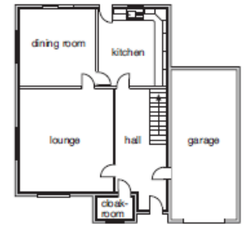
1: 100
1: 500
1: 1250
1: 2500

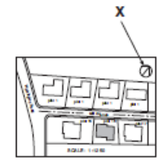
Scale ..... KI 1

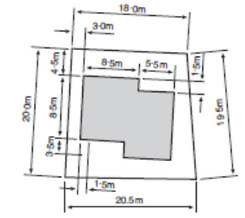
(d) State what the **symbol X** on **Plan C** represents.

Symbol X ..... KI 1

Total (KI 7)







4.

Graphic communication uses many different types of symbol to communicate information. Look at the symbols shown and answer the questions.

(a) State the name given to the three types of safety signs shown at **A**, **B** and **C**.

A .....

B .....

C ..... KI 3

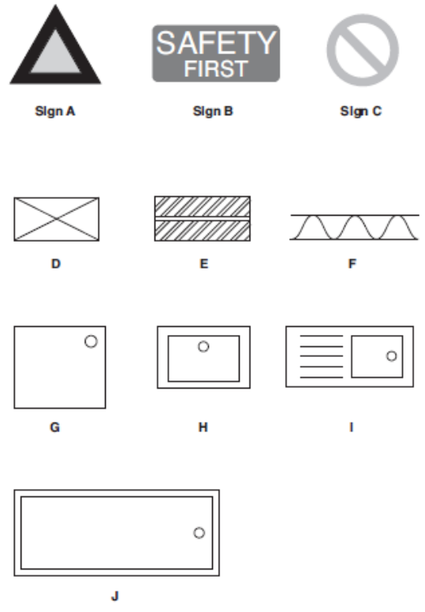
(b) State what each of the architectural symbols shown at **D** to **J** represents.

D ..... **E** ..... **F** .....

G ..... **H** ..... **I** .....

J ..... KI 7

Total (KI 10)



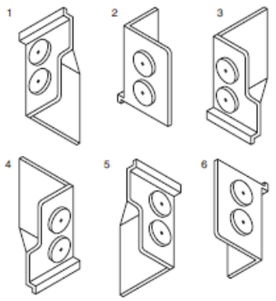
Tutorial 7

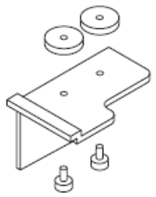
1.

(2)

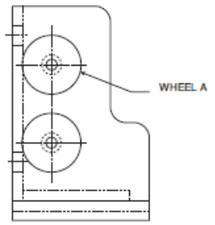
elevation, end elevation and plan of a wheeled bracket are shown.

(*a*) Six pictorial views are shown below.

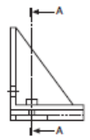




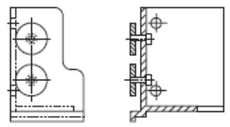
ISOMETRIC VIEW Y



DRAWING Z



PLAN



State which **two** of these views represent the wheeled bracket.

Answer 1 ..... Answer 2 ..... **KI 2**

(*b*) State the name given to the type of isometric view Y shown.

View Y ..... **KI 1**

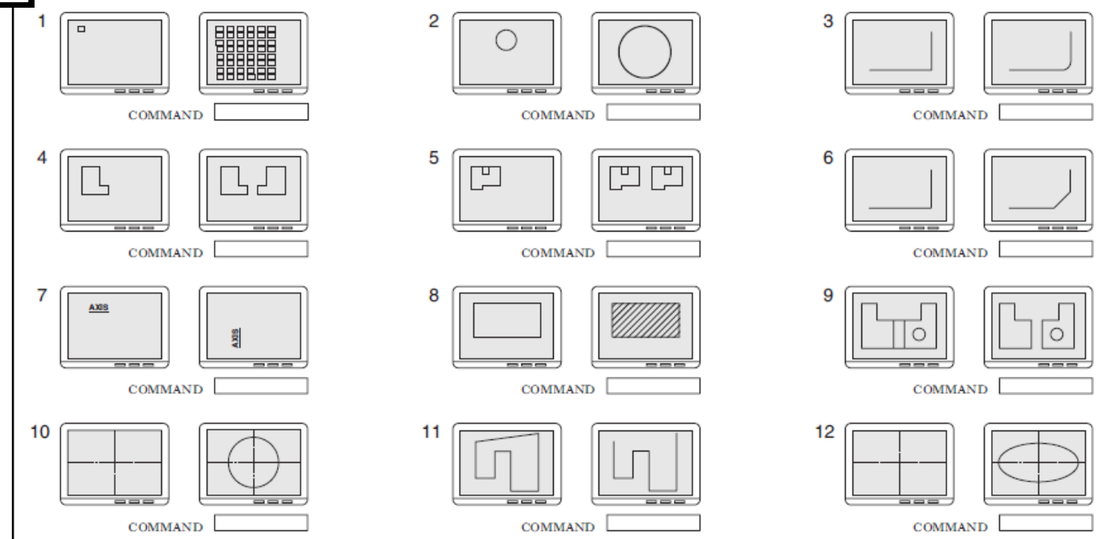
(*c*) State the purpose of a sectional view.

Purpose .....

..... **KI 1**

(*d*) On Drawing Z, add the overall height of the bracket and the diameter of wheel A, using the correct BS convention for dimensioning. **KI 4**

3.



Total (KI 12)

2.

The choice of colour is an important factor when designing new products.

(*a*) Add the missing information in the table below.

Colours	Situations	Reasons for choice
White	Used for fridge designs	
	Used for new council staff uniforms	Associated with reliability
Green	Used for the packaging of a new bathroom cleaning product	
	Used for main colour of a shop that sells holidays	It is associated with happiness and sunshine
Red	Used in the design of a sports car	
	Used for the border colour on packaging of a new product	It is in harmony with yellow

KI 6

(*b*) State **one** receding colour that harmonises with blue.

Receding colour ..... **KI 1**

(*c*) State **one** advancing colour that contrasts with blue.

Advancing colour..... **KI 1**

(*d*) State the effect created by using red, yellow and blue combined in a colour scheme.

Effect..... **KI 1**

Total (KI 9)

4.

The use of CAD has helped the production of new designs.

(*a*) Describe **three** ways in which the use of a CAD package would speed up production of new designs, when compared to manual methods.

1 .....

.....

2 .....

.....

3 .....

..... **KI 3**

(*b*) Explain what the term **layer** means when used in CAD.

Explanation .....

.....

.....

..... **KI 1**

(*c*) State the names of the **two** types of plotter used to produce hard copies of CAD drawings.

Plotter .....

Plotter ..... **KI 2**

(*d*) Explain the term **compatible** when applied to software.

Answer .....

..... **KI 1**

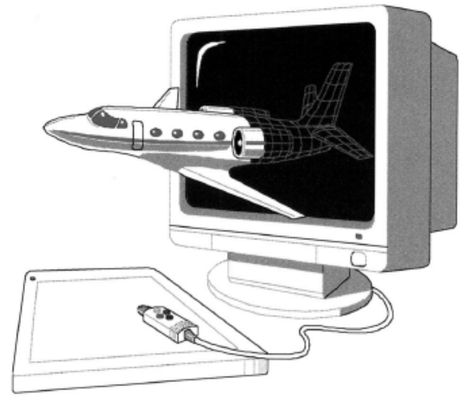
(*e*) State **two** advantages to the designer of having the ability to construct computer generated 3D models over built scale models.

1 .....

.....

2 .....

..... **KI 2**



(*f*) State the names given to **two** types of computer-generated models.

1 .....

.....

2 .....

..... **KI 2**

Total (KI 11)

Tutorial 8

1.

In industry, computers are now used to produce many different types of graphics. (4)

(a) Complete the following table by adding the type of software package used to accomplish the given task.

Department	Task	Software Package Type
Administration Department	The production of letters to the firm's clients	
Drawing Office	The production of new working drawings	
Sales and Marketing Department	The production of advertising leaflets containing text and graphics	
Sales and Marketing Department	The production of promotional graphics showing light, shade and tone.	

KI 4

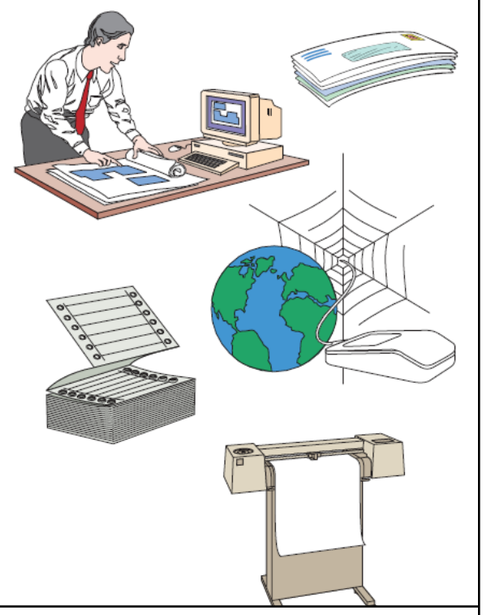
(b) State the name of a hardware **device** that the firm could use to send designs to offices abroad.

Hardware Device ..... KI 1

(c) State what is meant by the term **backup** when applied to computer data.

Answer ..... KI 1

Total (KI 6)



2.

Study the drawings shown opposite and answer the following questions.

(a) State the general name given to the types of view shown at **A**, **B**, **C** and **D**.

Answer ..... KI 1

(b) State the individual names given to each of the views shown at **A**, **B**, **C** and **D**.

View A ..... **View B** .....

View C ..... **View D** ..... KI 4

(c) Name **one** other type of view in which you would see all three dimensions.

Answer ..... KI 1

(d) State **Angle X** on **View B**.

Angle ..... KI 1

(e) All of the views opposite are drawn to different scales. State **two** reasons that can affect the choice of scale in a drawing.

Reason 1 .....

.....

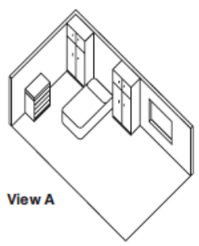
Reason 2 .....

..... KI 2

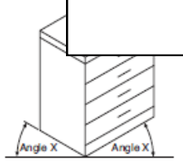
(f) State what is meant by scale 1:2.

Answer .. .. KI 1

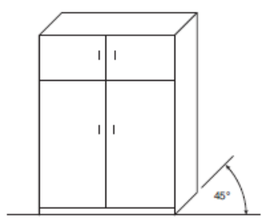
Total (KI 10)



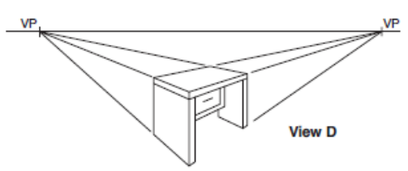
View A



View B



View C



View D

3.

An architect uses a CAD system to produce new house designs.

(a) State **one** possible advantage, other than speed, to the architect of the availability of a CAD library of architectural symbols.

Answer .....

..... KI 1

(b) State **two** devices that could be used by the architect to place her existing manual drawings on to the computer hard disk.

Device 1 .....

Device 2 ..... KI 2

(c) State the name of the type of view shown at **A**.

A ..... KI 1

(d) State the names of the types of plan shown at **B** and **C**.

B .....

C ..... KI 2

(e) State **two** computer storage devices that could be used to store CAG drawing files larger than 2MB.

Device 1 .....

Device 2 ..... KI 2

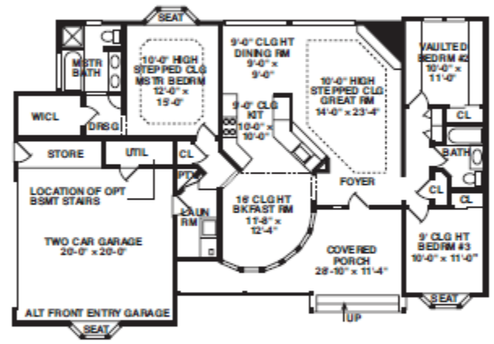
(f) State the name given to the **symbol X** on view **C**.

symbol X ..... KI 1

Total (KI 9)

A

B



C

symbol X

4.

Three types of plans used in the building industry are shown. (1)

Study these plans and answer the following questions.

(a) (i) State the name given to **Plan A**.

Plan A ..... KI 1

(ii) Identify the symbols **B, C, D, E, F** and **G** used on this plan.

B ..... **C** .....

D ..... **E** .....

F ..... **G** ..... KI 6

(b) (i) State the name given to **Plan B**.

Plan B .....

(ii) State which of the following scales was used for this plan.

1:10 1:100 1:200 1:1250

Scale .....

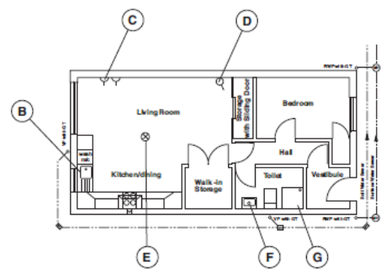
(iii) Identify the symbol **X** shown on **Plan B**.

Symbol **X** ..... KI 3

(c) State the name given to **Plan C**.

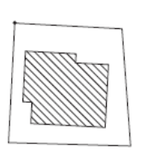
Plan C ..... KI 1

Total (KI 11)



PLAN A

PLAN B



PLAN C

SCALE 1:250

Tutorial 9

1.

esign companies use many different software packages and output devices.

(*a*) State the type of software package that would be used for the following.
Do not give commercial names.

(i) Producing an advertising leaflet containing text and graphics

Answer .....

(ii) Producing a fully dimensioned working drawing

Answer .....

(iii) Producing a fully rendered graphic of a new house design

Answer ..... **KI 3**

(*b*) State **two** output devices that could be used to obtain hard copies of a computer rendered graphic.

Device 1 ..... Device 2 ..... **KI 2**

Total (KI 5)

2.

Computers are now widely used by many companies for all their graphic needs.

(*a*) Other than speed of production, describe **three** advantages that would be gained if a company uses CAD.

1 .....

.....

2 .....

.....

3 .....

..... **KI 3**

(*b*) Other than hardware costs, state **three** disadvantages to the company of using CAD for new design production.

1 .....

.....

2 .....

.....

3 .....

..... **KI 3**

(*c*) State **two** input devices that could be used to transfer existing manual drawings to the computer's memory.

Device 1 .....

Device 2 ..... **KI 2**

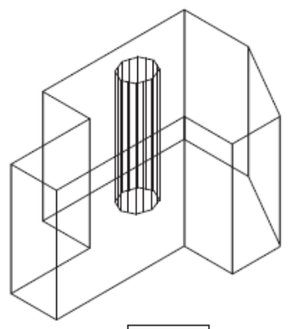
(*d*) State the name given to the type of model shown at P.

Model P..... **KI 1**

(*e*) State **two** other types of computer-generated model.

1 .....

2 ..... **KI 2**



Model P

3.

An interior designer used standard colour theory for the colour scheme in a new toy store.

(*a*) Complete the table by filling in the blank areas.

Area	Colour	Reason for choice
Interior walls	*Yellow*	
Checkout chairs and display cabinets	*Red*	
Worktops at the tills		To be in harmony with the walls
Floor		To be in contrast with the walls
First Aid Room signs and door		Associated with safety

KI 5

(*b*) Describe the effect created by the colour scheme chosen for this toy store.

Effect ..... **KI 1**

(*c*) State whether the walls are an advancing or a receding colour.

Answer ..... **KI 1**

(*d*) Describe how the continual use of the same two colours in the toy store logo and in all promotional materials relating to the toy store are an advantage to the company.

Description .....

..... **KI 1**

(*e*) State the term used to describe the gradual change that occurs when a flat colour changes from a light to a dark version of that colour.

Term ..... **KI 1**

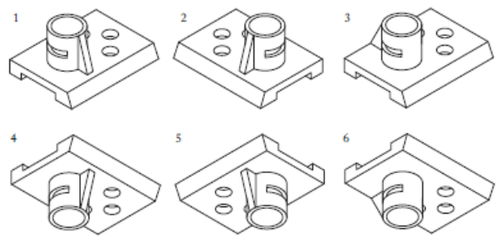
Total (KI 9)

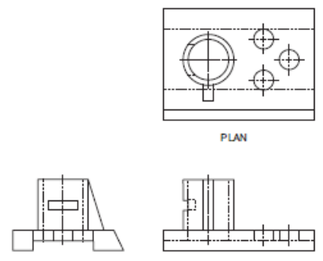
4.

4

The elevation, end elevation and plan of a bracket are shown in **Drawing X**.

DRAWING X





(*a*) State which **two** of the pictorials 1 to 6 above represent the bracket shown in **Drawing X**.

Answer 1 ..... Answer 2 ..... **KI 2**

(*b*) State the name given to the type of pictorials shown above.

Answer ..... **KI 1**

(*c*) State the names of **three** other types of pictorial that could have been used to draw the bracket.

1 ..... 2 ..... 3 ..... **KI 3**

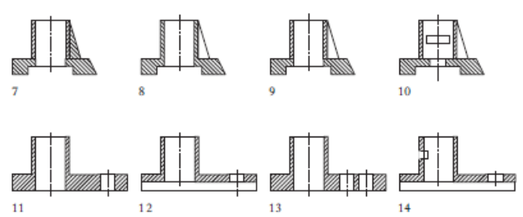
(*d*) Eight sectional views 7 to 14 are given opposite.
State which **two** are correct sections of the bracket.

Answer 1 .....

Answer 2 ..... **KI 2**

(*e*) On **Drawing X** and using the correct BSI convention for dimensioning, draw on the dimensions for the overall length to the elevation and the overall breadth to the plan. **KI 2**

Total (KI 10)

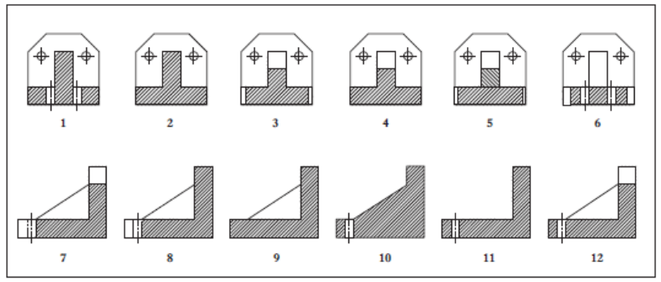


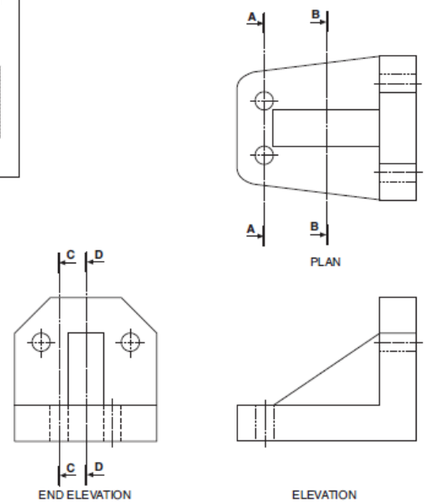
Tutorial 10

1.

The elevation, end elevation and plan of a bracket are given in **Drawing Y**.

(*a*) Twelve sectional views 1 to 12 are given below **(Not to Scale)**.





DRAWING Y

State which of these are the correct sections for **AA**, **BB**, **CC** and **DD**.

Section AA ..... **Section BB** .....

Section CC ..... **Section DD** ..... KI 4

(*b*) State **two** factors that affect the choice of scale when working on a production drawing.

Answer 1 .....

Answer 2 ..... KI 2

Total (KI 6)

2.

For the safety signs shown below, complete the missing information in the boxes provided.

Sign type

WARNING

Border colour

Background colour

Sign type

SAFE CONDITION

Sign type

Border colour

Background colour

Sign type

Background colour

BLUE

3.

Three types of plans used in the building industry are shown.

Study these plans and answer the following questions.

(*a*) (i) State the name given to **Plan A**.

Plan A ..... KI 1

(ii) Identify the symbols **B**, **C**, **D**, **E**, **F** and **G** used on this plan.

B ..... **C** .....

D ..... **E** .....

F ..... **G** ..... KI 6

(*b*) (i) State the name given to **Plan B**.

Plan B .....

(ii) State which of the following scales was used for this plan.

1:10 1:100 1:200 1:1 250

Scale .....

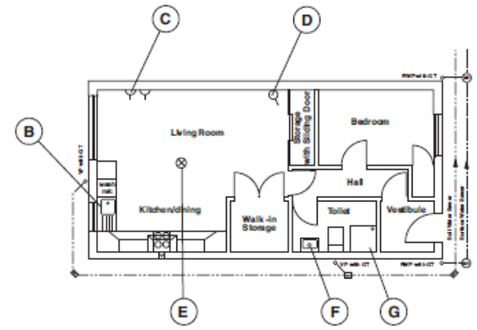
(iii) Identify the symbol **X** shown on **Plan B**.

Symbol **X** ..... KI 3

(*c*) State the name given to **Plan C**.

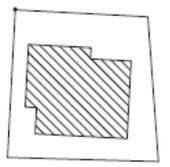
Plan C ..... KI 1

Total (KI 11)



PLAN A

PLAN B



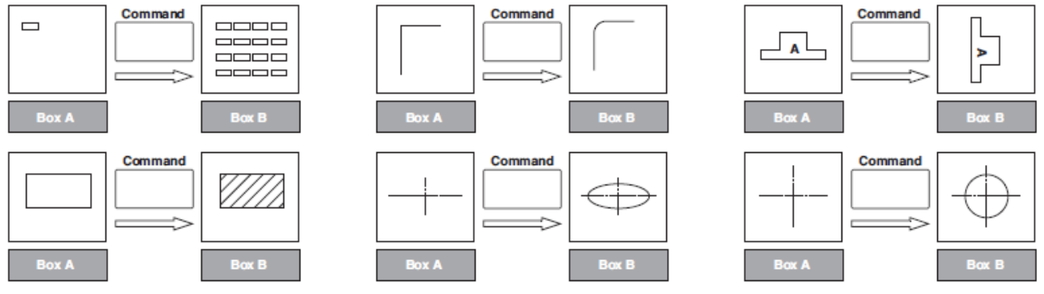
PLAN C

SCALE 1:250

4.

The use of CAD systems is now well established in many different industries that use graphics.

(*a*) Look at the features shown in **Box A** and, in the box provided, state the single CAD command that could be used to change the feature to what is shown in **Box B**.



KI 6

(*b*) State the names of **two** devices that could be used to obtain hard copies of drawings produced using a CAD system.

Device .....

Device ..... KI 2

(*c*) (i) Explain what is meant by the term "to back-up" when applied to work done using CAD.

Explanation .....

.....

(ii) State why it is good practice to make a back-up.

Reason .....

..... KI 2

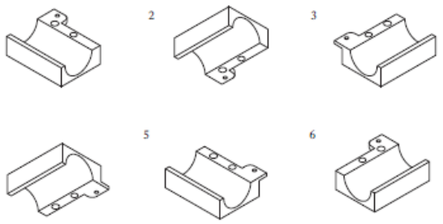
Total (KI 10)

1.

(4)

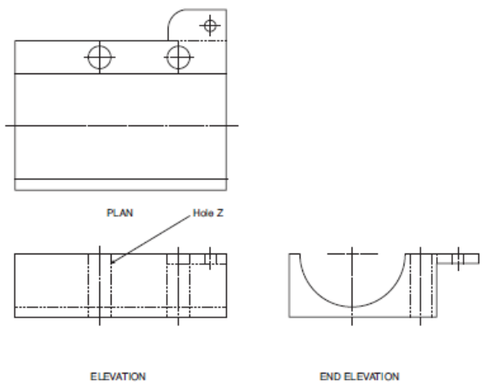
…evation, end elevation and plan of part of a shelf bearing are shown in **Drawing X**.

1 2 3



4 5 6

Drawing X



(*a*) State which **two** of the pictorials 1 to 6 above represent the bearing shown in **Drawing X**.

Answer 1 ..... Answer 2 ..... **KI 2**

(*b*) State the name given to the types of pictorial shown above.

Answer ..... **KI 1**

(*c*) Drawings 1 to 6 above are not drawn to scale. State **two** factors that affect the scale used.

Answer 1 .....

.....

Answer 2 .....

..... **KI 2**

(*d*) British Standard drawing conventions are commonly used in the production of new designs. State **one** possible benefit to be gained by their use.

Answer .....

..... **KI 1**

(*e*) Draw the overall length and height to the elevation and the diameter of hole **Z** to the plan of **Drawing X**, using the correct British Standard convention for dimensioning. **KI 3**

Total (KI 9)

2.

(2)

When choosing a colour scheme for a new travel shop, the choice of colour is very important.

(*a*) Complete the following table by adding the missing information.

AREA	COLOUR	REASON FOR CHOICE
Interior Walls	Yellow	
Floor Covering	Blue	
Ceiling		*Represents cleanliness*
Brochure Display Area	Blue-Violet	
Shop Front	Red	
First Aid Cabinet		*Associated with safety*

KI 6

(*b*) State **one** advancing and **one** receding colour from the colours used in this colour scheme.

Advancing ..... Receding..... **KI 2**

(*c*) State a colour that could be used for the seating in the shop, which is in harmony with the floor.

Answer ..... **KI 1**

(*d*) Describe how you would create a tertiary colour.

Description .....

..... **KI 1**

(*e*) State the effect created by using so many contrasting colours in the same colour scheme.

Effect .....

..... **KI 1**

Total (KI 11)

3.

(1)

A company that designs toys for children now uses computers for all its graphics needs.

(*a*) Other than speed of production, state **three** advantages of using computers when compared with manual methods of producing new designs.

1 .....

.....

2 .....

.....

3 .....

..... **KI 3**

(*b*) State **three** disadvantages that the firm could have found by using computers.

1 .....

.....

2 .....

.....

3 .....

..... **KI 3**

(*c*) State the type of software package that would be used for the following.

(i) Producing an advertising leaflet with text and graphics

Answer .....

(ii) Producing a fully dimensioned production drawing

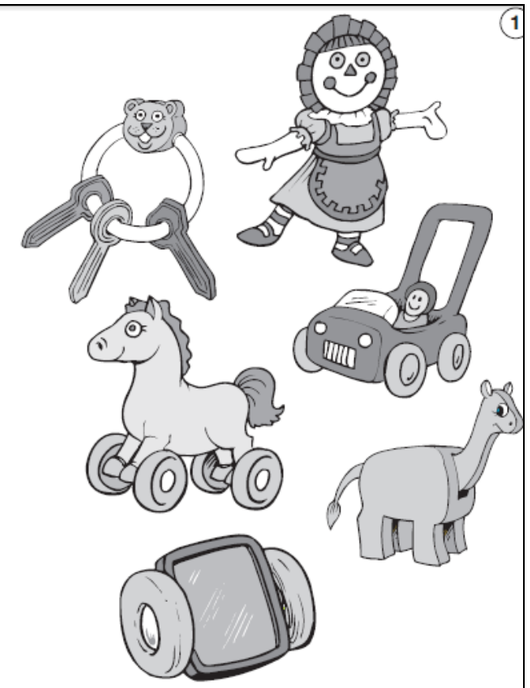
Answer .....

(iii) Producing a fully rendered graphic of a new product

Answer ..... **KI 3**

(*d*) State the name of a device that could be used to copy manually rendered graphics to the computer's memory.

Answer ..... **KI 1**



(*e*) State what is meant by the term compatible when applied to different software.

Answer .....

..... **KI 1**

Total (KI 11)

4.

(3)

In the designing, testing, building and marketing of new cars, computers are now used at every stage to aid the designer.

(*a*) Other than cost, state **two** advantages of computer-generated models over built scale models.

1 .....

.....

2 .....

..... **KI 2**

(*b*) State **two** disadvantages of computer-generated models when compared to built scale models.

Answer .....

.....

Answer .....

..... **KI 2**

(*c*) State the names of **two** types of computer-generated models.

1 .....

2 ..... **KI 2**

(*d*) The company used animation and simulation software on their new car designs.

State the difference between animation and simulation.

Answer.....

..... **KI 1**

(*e*) State **one** way in which the company could use a computer animation of a new car design.

Answer.....

..... **KI 1**

(*f*) State **one** possible way in which computer simulation could be used to help with the designing of a new car.

Answer.....

..... **KI 1**

A supplementary page is included at the end of Section A for use if extra space is required. *M*

1.

(a) Explain clearly what each of the following CAD commands allows the user to do. Sketches may be used to help explain your answers.

(i) Scale .....

.....

(ii) Zoom .....

.....

(iii) Mirror .....

.....

(iv) Pan .....

.....

(v) Rotate .....

.....

(vi) Library .....

.....

(vii) Grid lock/snap .....

.....

(viii) Copy .....

.....

2.

Marks

Some of the many different types of graphics used in the construction industry are shown below.

Describe the purpose and state a suitable scale for each of the plans.

(a) Floor plan

Scale .....

Description .....

..... 2

(b) Site plan

Scale .....

Description .....

..... 2

(c) Block plan

Scale .....

Description .....

..... 2

(6)

3.

4 An example of a desktop published (DTP) safety leaflet is shown.

Marks

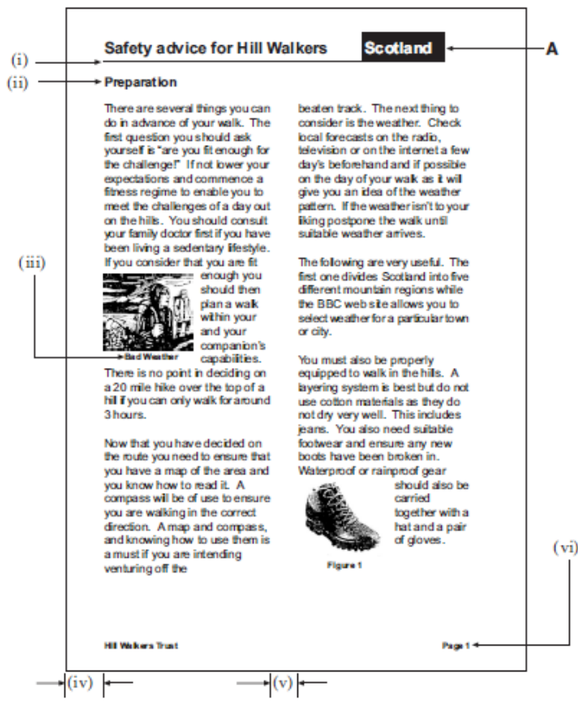
(a) State the desktop publishing effect indicated at **A**.

..... **1**

(b) State the page orientation of the leaflet below.

..... **1**

(c) State the desktop publishing terms for each of the features (i) to (vi).



(i) ..... (ii) .....

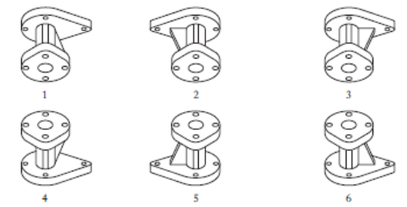
(iii) ..... (iv) .....

(v) ..... (vi) 6

(8)

4.

The elevation, end elevation and plan of a coupling are shown in **Drawing X**.



(a) State which **two** of the pictorial drawings 1 to 6 above represent the coupling shown in **Drawing X**.

Answer 1 ..... Answer 2 ..... KI

(b) State the names of **three** types of pictorial drawing that could have been used to draw the bracket.

1 ..... 2 ..... 3 ..... KI

(c) State the main purpose of producing a pictorial view of an object.

Purpose .....

..... KI

Eight sectional views 7 to 14 are shown opposite.

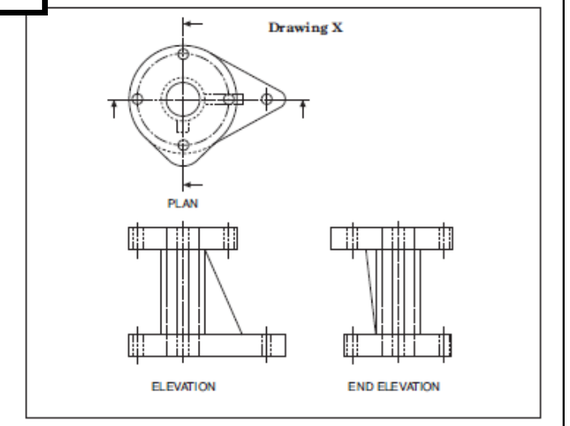
(d) State which **two** are correct sections of the coupling.

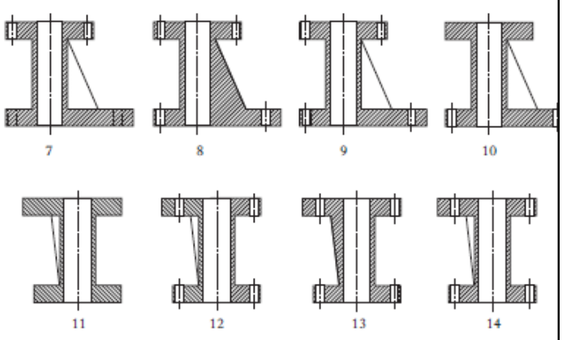
Answer 1 ..... Answer 2 ..... KI

(e) On **Drawing X**, and using the correct BSi convention for dimensioning, add the **overall height** and **breadth** to the END ELEVATION. KI

Total (KI

4.





Section A

A supplementary page is included at the end of Section A for use if extra space is required.

Marks

1. Describe, using sketches if required, the following desk top publishing **terms**.

Page orientation .....

.....

.....

..... **1**

Rule .....

.....

.....

..... **1**

Caption .....

.....

.....

..... **1**

Gutter .....

.....

.....

.....

Reverse .....

.....

.....

..... **1**

Header .....

.....

.....

..... **1**

Margin .....

.....

.....

..... **1**

(7) ☐

2 (*a*) State the **term** used to describe the small annotated sketches used in the initial design stage of a desk top publishing document. *Marks*

..... **1**

(*b*) State the **term** used to describe the full size manually produced colour document that would be presented to the client prior to electronic production of a desk top published document.

..... **1**

(2) ☐

3 (*a*) A range of drawing types are used in industry within the categories *Preliminary*, *Production* and *Promotional*.

(i) State the category that an orthographic drawing, showing dimensions and tolerances would be in.

Category **1**

(ii) State the purpose of this type of drawing.

Purpose **1**

(*b*) State a type of *Promotional* graphic commonly used in marketing.

Graphic **1**

(3) ☐

4 (*a*) Orthographic views created in a CAD package are drawn in **2D**.
State **two types** of views that would be drawn in **2½ D**.

View 1 ..... **1**

View 2 ..... **1**

(*b*) State the computer hardware that allows:

(i) drawings and text to be sent accurately to another computer;

Hardware **1**

(ii) existing photographs to be captured and inserted into a desk top published document;

Hardware **1**

(iii) production of a hard copy of a word processed document.

Hardware **1**

(5) ☐

Candidate's Name _____

1.

5

Many different types of drawings and views are used in the graphic industry.

(*a*) **View 1** and **View 2** are used in the engineering industry.

(i) State the name given to these types of views.

View 1 ..... **View 2** ..... KI 2

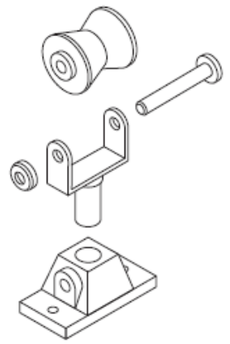
(ii) Explain the purpose of these drawings.

Purpose of **View 1** .....

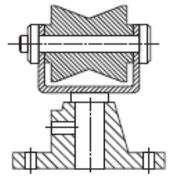
.....

Purpose of **View 2** .....

..... KI 2



View 1



View 2

Plan 3 and **Plan 4** are used in the building industry.

(*b*) State the name given to these types of plans.

Plan 3 .....

Plan 4 ..... KI 2

(*c*) State the name given to the type of plan that would be used to show the interior layout of the building.

Answer ..... KI 1

(*d*) State the name given to Symbol **X** on **Plan 3**.

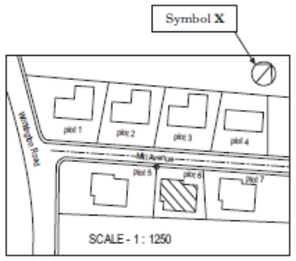
Answer ..... KI 1

(*e*) Explain the meaning of 1:2 when it is written on a drawing.

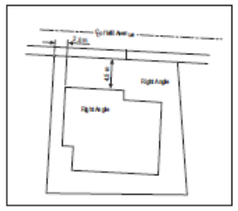
Explanation .....

..... KI 1

Total (KI 9)



Plan 3



Plan 4

2.

company that designs mobile phones now uses computers for all their design work.

Speed and accuracy are two advantages of using CAD software.

(*a*) State **three** other advantages of CAD over manual methods when producing these designs.

1 .....

.....

2 .....

.....

3 .....

..... KI 3

(*b*) Hardware and software costs are disadvantages of CAD.

State **three** other disadvantages to the company of using CAD over manual methods when producing new designs.

1 .....

.....

2 .....

.....

3 .....

..... KI 3

(*c*) State **two** input devices that could be used to transfer the company's existing manual drawings to the computer's memory.

Device 1 ..... Device 2 ..... KI 2

(*d*) State **one** reason why the company always creates a backup at the end of each day.

Reason .....

..... KI 1

Total (KI 9)

3.

4

Colour can be used for many different reasons.

(*a*) State what is added to red to make it a shade of red.

Answer ..... KI 1

(*b*) State what is added to red to make it a tint of red.

Answer ..... KI 1

(*c*) State **two** tertiary colours that contain blue.

Colour ..... Colour ..... KI 2

(*d*) State what must be added to a primary colour in order to obtain a tertiary colour.

Answer ..... KI 1

(*e*) Colours can be used to create different moods and feelings. State what colour is associated with the following.

(i) To represent happiness.

Colour .....

(ii) To represent that something is cool.

Colour .....

(iii) To represent something that is safe for the environment.

Colour .....

(iv) To represent that something is dangerous.

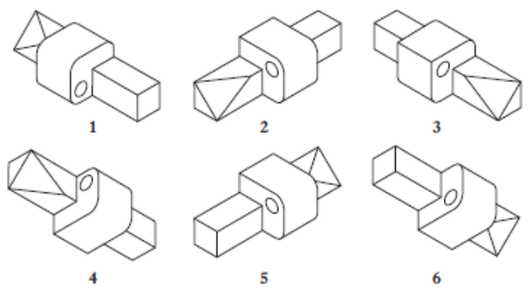
Colour ..... KI 4

Total (KI 9)

4.

The elevation and end elevation of a component are shown in **Drawing X**.

(*a*) Six pictorial views are shown below.



State which **two** of these pictorial views of the component represent the views in **Drawing X**.

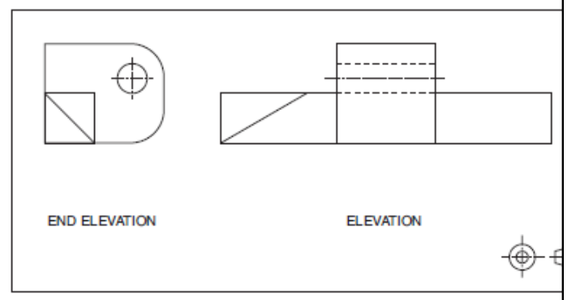
1 ..... 2 ..... KI 2

(*b*) State the name given to the type of drawing shown in **Drawing X**.

Drawing X ..... KI 1

(*c*) On the ELEVATION shown opposite, add the length and the height using the BS convention for dimensioning. KI 2

Total (KI 5)



DRAWING X

1.

Four pictorial drawings are given opposite.

(*a*) State the names given to the types of pictorial shown at **P**, **Q**, **R** and **S**.

P ..... **Q** .....

R ..... **S** ..... KI 4

(*b*) State the name given to **Line L** on **View S**.

Answer ..... KI 1

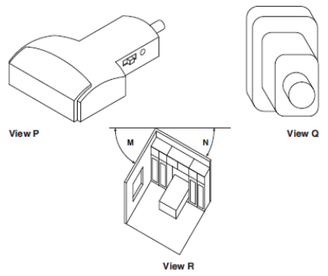
(*c*) State the name given to **Points 1** and **2** on **View S**.

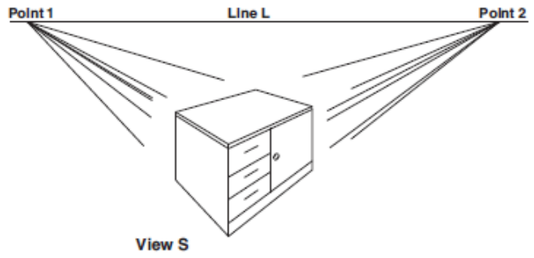
Answer ..... KI 1

(*d*) State the angles used at **M** and **N** on **View R**.

Angle M ..... **Angle N** ..... KI 2

Total (KI 8)





3.

Drawings of a van are shown opposite. State the single CAD command that would be used to create the following details.

(*a*) The straight edge shown at **A**.

Command .....

(*b*) The rounded corner shown at **B**.

Command .....

(*c*) The curved surface shown at **C**.

Command .....

(*d*) The angled corner shown at **D**.

Command .....

(*e*) The circumference of the wheel shown at **E**.

Command .....

(*f*) The name of the view shown at **F**.

Command .....

(*g*) The gap in the line **X** shown at **G**.

Command .....

(*h*) The identical wheel shown at **H**.

Command .....

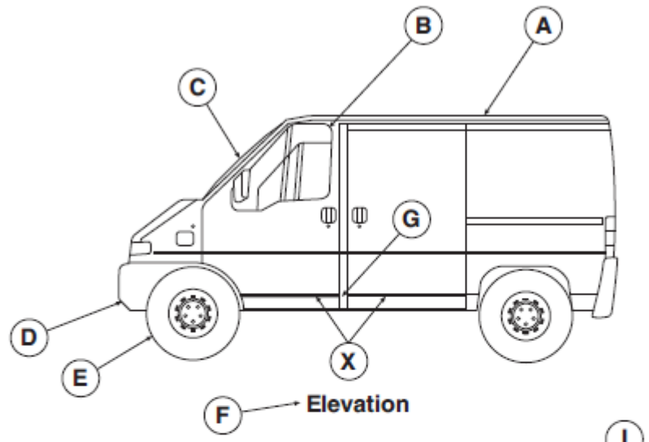
(*i*) The identical features around the wheel shown at **I**.

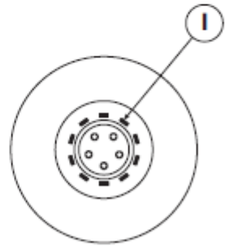
Command .....

(*j*) The enlarged view of the wheel shown at **J**.

Command .....

Total (KI 10)





2.

The graphics industry uses many different software packages and output devices.

(*a*) State the **type** of software package that would be used for the following.

(i) Producing a magazine article that contains both text and graphics.

.....

(ii) Producing a fully rendered graphic of a new car design.

.....

(iii) Producing a fully dimensioned working drawing.

..... KI 3

(*b*) State **two** output devices that could be used to obtain hard copies of a computer rendered graphic.

Device 1 .....

Device 2 ..... KI 2

(*c*) A computer-modelling package was used to produce **View X** opposite.

(i) State the name given to this type of computer-generated view.

View X ..... KI 1

(ii) State the names of **two** other types of computer-generated model.

1 ..... 2 ..... KI 2

Total (KI 8)

VIEW X

4.

Study the building drawings opposite.

(*a*) Identify the symbols **A**, **B**, **C**, **D** and **E** on the Floor Plan of the Kitchen.

A .....

B .....

C .....

D .....

E ..... KI 5

(*b*) Identify the symbols **F**, **G** and **H** on the Floor Plan of the Bathroom.

F .....

G .....

H ..... KI 3

Total (KI 8)