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National
Qualifications
2016

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X735/77/01

Graphic Communication

TUESDAY, 10 MAY

1:00 PM – 3:00 PM



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Fill in these boxes and read what is printed below.

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Town

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Total marks — 80

SECTION 1 — 50 marks

SECTION 2 — 30 marks

All dimensions are in mm.

All technical sketches and drawings use third angle projection.

You may use rulers, compasses or trammels for measuring.

In all questions you may use sketches and annotations to support your answer if you wish.

Write your answers clearly in the spaces provided in this booklet. Additional space for answers is provided at the end of this booklet. If you use this space you must clearly identify the question number you are attempting.

Use **blue** or **black** ink.

Before leaving the examination room you must give this booklet to the Invigilator; if you do not, you may lose all the marks for this paper.



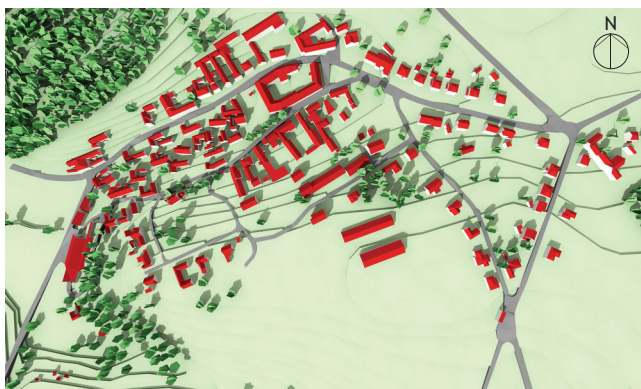
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SECTION 1 — 50 marks

Attempt ALL questions

1. A planning proposal for a large housing development has been submitted by an architect to the local council.

A variety of graphics of the development are shown below.



Graphic 1



Graphic 2



Graphic 3



1. (continued)

(a) Describe, with reference to graphics 1–3, how these would be used by:

(i) the housing developer;

2

(ii) the house buyer.

2

Before planning can be granted a public consultation must take place for local residents. The company produced a range of graphic communications to showcase the housing development, these included:

- 2D pictorial drawings
- 3D printed scale model of the development
- Animations.

(b) Describe **two** ways in which these graphic communications could help the housing company achieve a positive public image.

2

[Turn over



1. (continued)

A topographical survey was produced for the area. An example of this type of graphic is shown below.



(c) Describe **two** reasons why this type of graphic is of value to the architect. 2



[Turn over for next question

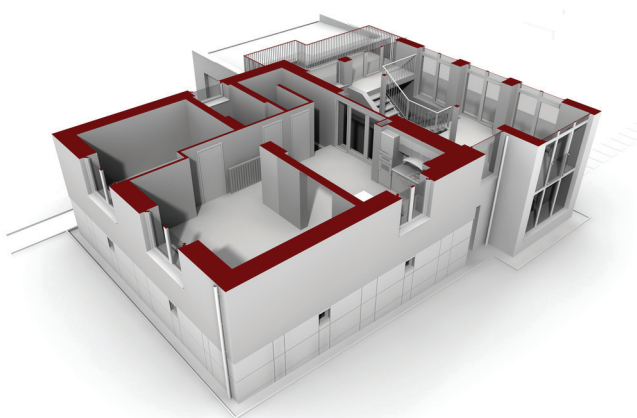
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1. (continued)

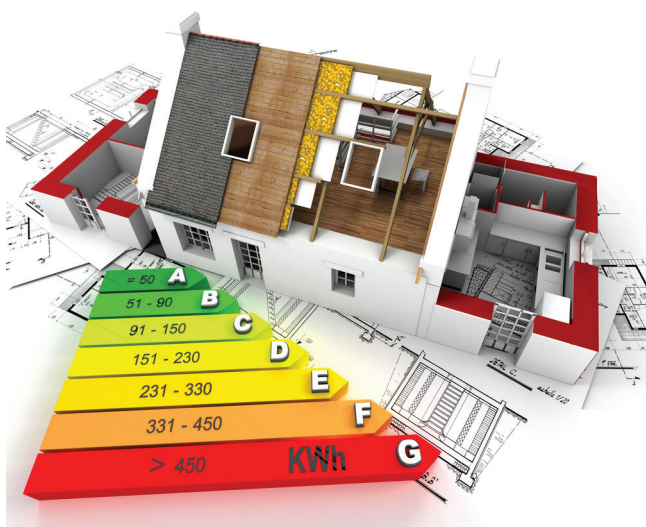
Various graphics of houses in the development are shown.



Graphic 1



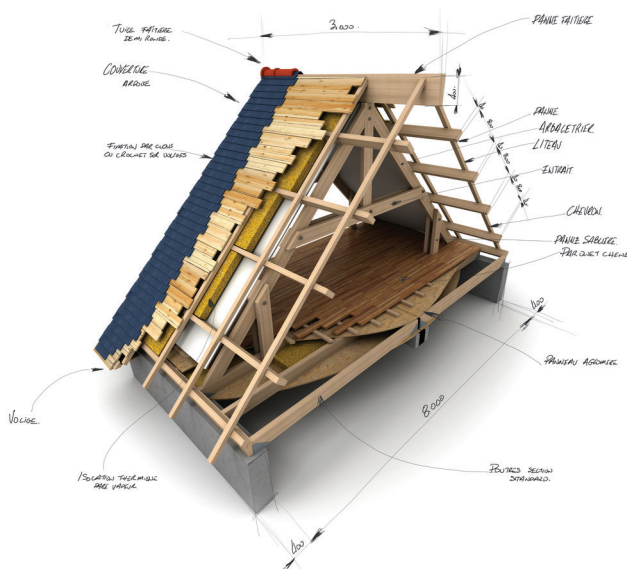
Graphic 2



Graphic 3



Graphic 5



Graphic 4



1. (continued)

(d) Describe, with reference to the graphics 1 to 5, what information can be gained that would be relevant to:

(i) the construction trades;

2

(ii) the company sales team.

2

The housing market is very competitive. Promotion of new developments is a high priority for the company.

(e) Explain **two** ways in which internet based **graphic communications** could be beneficial to the housing company.

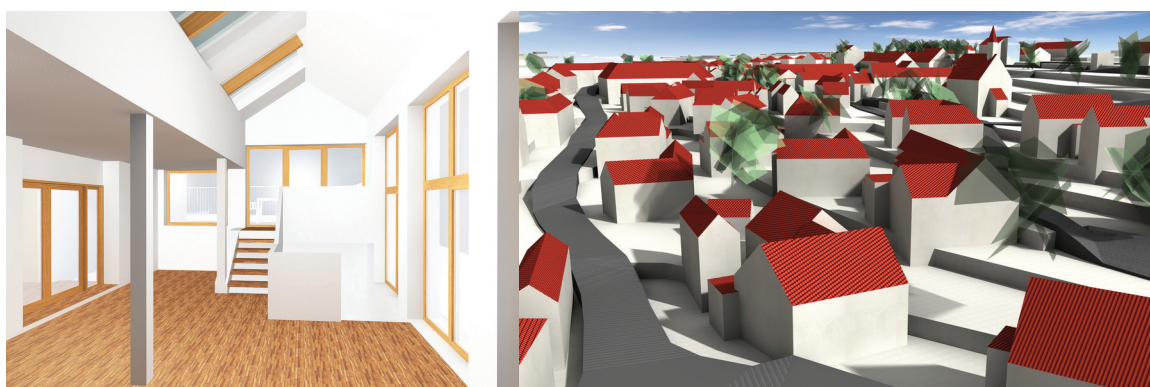
2

[Turn over



1. (continued)

A fly-through of the available house styles and a virtual tour of the housing development are available for the target market to view.



- (f) State **two** advantages of using motion tweening in this style of graphic communication.

2

When the architect runs the fly-through a problem is encountered. When entering the building the animation plunges into darkness.

- (g) Describe how the lighting in the animation could be changed to rectify this problem.

1



1. (continued)

The company's Graphic Designer creates graphic representations of how the houses may look prior to construction.

(h) Explain the use of the different illustration techniques used on the promotional work for the graphics shown.

(i) Graphic 1

2

Technique 1

Technique 2



(ii) Graphic 2

2

Technique 1

Technique 2



[Turn over



2. A caravan manufacturer is releasing their new range of caravans in time for the spring season. A computer model of the caravan shell is produced prior to manufacture.

- (a) Describe the process of converting a 3D computer model into a 3D printed model.

3

- (b) Explain, other than digital testing methods, a benefit of producing the 3D printed model for:

- (i) the caravan designer;

2

- (ii) the caravan manufacturer.

2

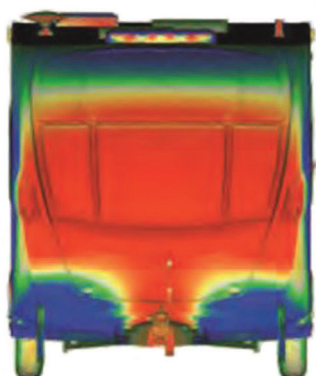
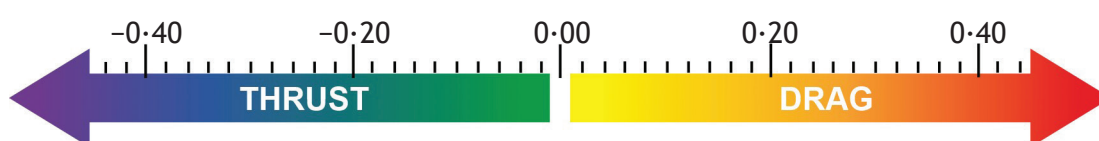


2. (continued)

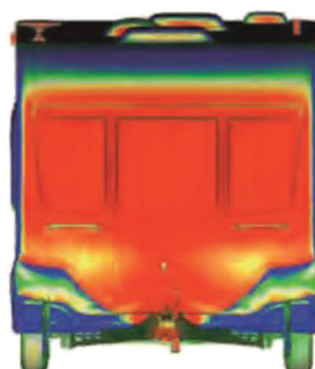
- (c) State two digital testing methods that could have been applied to the 3D computer models.

2

The results of the digital testing are shown below. The images show the forces that act upon the caravan while in transit. The red areas show the greatest drag forces.



New Caravan Model



Competitor Model

- (d) Explain **two** advantages of this type of information to the target market.

2

[Turn over



2. (continued)

Rendered 3D computer models of the caravan interior and exterior were included in the promotional material.

- (e) Describe what information could be gathered from the rendered images which may be of interest to the target market.

4



* X 7 3 5 7 7 0 1 1 2 *

2. (continued)

Digital advertising is becoming an increasing part of promoting and selling products. The website designers intend to use VRML within the website to promote the new caravans internal **and** external details.

- (f) Explain **two** advantages of using this format over other graphic media files.

2

- (g) Describe how using a VRML format may increase interest for the product and create sales for the company.

1

[Turn over



3. A major publicity drive is being conducted by the Blood Transfusion Service to raise awareness of the importance of Giving Blood in Scotland. They plan to organise a range of 5K and 10K races across the country.

Graphic Designers have been tasked to design and produce a range of graphic communications to promote the event.

The event “Blood Run” logo has been produced as a vector graphic, to be used in the online and printed advertising.

- (a) Describe **three** advantages of vector images compared to raster images. 3

The colours used within the promotional work must incorporate the colours used in the existing Give Blood logo.

- (b) Explain how the Graphic Designers can ensure an exact colour match is achieved. 2



3. (continued)

When the client viewed the pre-production print of the flyer, they were disappointed with the paper and quality of product.

- (c) Describe **two** changes that could be made to the paper to improve the quality before going to final print.

2

[Turn over]



* X 7 3 5 7 7 0 1 1 5 *

3. (continued)

The process Offset Lithography was used to produce promotional work for the event.



(d) Describe how the process would be used to produce the flyer shown opposite.

4

* X 7 3 5 7 7 0 1 1 7 *

4. A selection of current soft drinks products are shown below.



The Coca-Cola typeface and white wavy line are common features used in this product range.

- (a) Describe the effect these common features have in maintaining a brand identity.

2



* X 7 3 5 7 7 0 1 1 8 *

4. (continued)

Companies such as Coca-Cola invest significant sums of money to ensure that their brands are protected.

- (b) Explain, giving **three** reasons, why companies protect their intellectual property rights.

3

[Turn over]



* X 7 3 5 7 7 0 1 1 9 *

4. (continued)

The company uses a variety of advertising to showcase their products.

- (c) Explain, with reference to the graphics shown on the **Supplementary Sheet for use with Question 4 (c)**, how the company have considered target market, colour and social responsibilities.

6

Target market _____

Colour _____

Social responsibilities _____



[Turn over for next question

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5. A range of pictorial and orthographic views of a new design for a trailer jockey wheel assembly are shown on the **Supplementary Sheets for use with Question 5.**

- (a) Describe the 3D CAD modelling techniques used to create component “A” **in the most efficient and economical way.** Make reference to the dimensions from the drawings in your answer.

You may use sketches within your answer.

7



* X 7 3 5 7 7 0 1 2 2 *

5. (continued)

- (b) Describe the 3D CAD modelling techniques used to create component “B” in the most efficient and economical way. Make reference to the dimensions from the drawings in your answer.

You may use sketches within your answer.

3

[Turn over



* X 7 3 5 7 7 0 1 2 3 *

5. (continued)

- (c) Describe the most efficient and economical way of creating component “C”. Make reference to 3D CAD modelling techniques and to the dimensions from the drawings in your answer.

You may use sketches within your answer.

7



* X 7 3 5 7 7 0 1 2 4 *

5. (continued)

- (d) Describe the 3D CAD modelling constraints that would be used to assemble the hex-bolt to the handle.

2

[END OF QUESTION PAPER]



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MARKS

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ADDITIONAL SPACE FOR ANSWERS AND ROUGH WORKING



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MARKS

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ACKNOWLEDGEMENTS

Question 1(a) – Petr84/shutterstock.com

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Question 1(c) – Topographical survey, 'Dundas Estates and Development, Ostlers Way' by EMA Architecture and Design Ltd. Reproduced by kind permission of EMA Architecture and Design Ltd.

Question 1(d) – Petr84/shutterstock.com

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Question 1(f) – Petr84/shutterstock.com

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Question 2(c) – Graphic of caravan digital testing is taken from www.swiftgroup.co.uk/caravans/aerodynamics. Reproduced by kind permission of Swift Group Ltd.

Question 3 – Mock-up of 'Blood Run' flyer using Scottish National Blood Transfusion Service information and logos. Reproduced by kind permission of Scottish National Blood Transfusion Service.

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