	FOR OFFICIAL USE National Qualification 2018	15			Mark	
X735/76/01 THURSDAY, 10 MAY 1:00 PM – 3:00 PM			Gra	phic Co ∥	mmuni	cation
Fill in these boxes and rea	ad what is printed be	elow.	Town			
Forename(s)	Surnam	e			Number	of seat
Date of birth Day Month	Year S	cottish can	didat	e number		

Attempt ALL questions.

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.









(b) The base for the tablet stand was created using tangency and ellipse construction, as shown below.



(ii) the length of the minor axis of the ellipse.

[Turn over

1

1

MARKS DO NOT WRITE IN THIS MARGIN



(c) The base for the tablet stand is to be modelled using 3D CAD. A 2D production drawing of the tablet stand is shown below.





DO NOT WRITE IN THIS MARGIN

Enlargement View B





SECTIONAL END ELEVATION ON A-A



MARKS DO NOT WRITE IN THIS MARGIN

1. (c) (continued)

Describe the 3D CAD modelling techniques used to create this component. You must make reference to the dimensions shown in the 2D production drawing opposite.

You may use sketches to support your answer.

4



[Turn over

(d) A pictorial view of the support arm for the tablet stand is shown below. Also shown is a 2D production drawing. DO NOT WRITE IN THIS MARGIN





MARKS DO NOT WRITE IN THIS MARGIN

1. (d) (continued)

Describe the 3D CAD modelling techniques used to create the support arm. You must make reference to the dimensions shown in the 2D production drawing opposite.

You may use sketches to support your answer.

3

[Turn over



(e) A pictorial view of the ball joint for the tablet stand is shown below. Also shown is a 2D production drawing.

Describe the **single** 3D CAD modelling technique used to create the ball joint component. You must refer to the dimensions given in the drawing shown below.

You may use sketches to illustrate your answer.



In order for the ball joint to work effectively a functional tolerance needs to be applied to it.

(f) Using British Standard conventions, apply a diameter tolerance of 10 mm +0.15 and -0.25 to the graphic below.





NO TOLERANCE APPLIED



TOLERANCE APPLIED



Also

3

MARKS DO NOT

THIS

(g) Two pictorial views of the ball socket for the tablet stand are shown below. Grips were added to help the user adjust the angle of the tablet. Also shown is a 2D production drawing.

Describe the 3D CAD techniques used to create the **grips** on the ball socket component. You must refer to the dimensions given in the drawings shown below.

You may use sketches to support your answer.





page 09

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3

(con	tinue	d)	
(h)	Wher decic	n reviewing the final model of the ball socket, the CAD technician ded to reduce the number of grips on the ball socket from 12 to 10.	
	(i)	Describe how the modelling tree is used to edit the number of grips.	1
			-
	(ii)	Explain why editing the modelling tree is an efficient way of changing the number of grips.	- - 1
			-
			-
A pro to th	oduct ie ma	is manufactured abroad. The 3D modelling files are sent electronically nufacturer. The 3D modelling files will be sent in the IGES file format.	- ,
A prc to th (a)	oduct ie mai (i)	is manufactured abroad. The 3D modelling files are sent electronically nufacturer. The 3D modelling files will be sent in the IGES file format. Name another suitable 3D modelling file format that could have been used.	1
A prc to th (a)	oduct ie ma (i) (ii)	is manufactured abroad. The 3D modelling files are sent electronically nufacturer. The 3D modelling files will be sent in the IGES file format. Name another suitable 3D modelling file format that could have been used. Explain why using these file formats is advantageous to the manufacturer.	- 1 - 1
A prc to th (a)	oduct ie mai (i) (ii)	is manufactured abroad. The 3D modelling files are sent electronically nufacturer. The 3D modelling files will be sent in the IGES file format. Name another suitable 3D modelling file format that could have been used. Explain why using these file formats is advantageous to the manufacturer.	- 1 - 1
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A proto th	oduct ie mai (i) (ii)	is manufactured abroad. The 3D modelling files are sent electronically nufacturer. The 3D modelling files will be sent in the IGES file format. Name another suitable 3D modelling file format that could have been used. 	1

L



MARKS DO NOT THIS (continued) 2. The manufacturer has also requested that the production drawings are sent electronically. (b) Explain why it is advantageous to the manufacturer to receive a vector graphic rather than a raster graphic. 1 (c) The production drawings are created by CAD technicians and include several components from a CAD library. Describe two benefits a CAD library offers a CAD technician. 2 (d) (i) State the name of the British Standard symbol shown below. 1 (ii) Explain why this symbol is useful to the manufacturer. 1 [Turn over

X735760111*



4. Graphics for a spotlight are shown below.



The spotlight casing (part 6) has two raised bosses to allow the mounting bracket (part 4) to be screwed on.

You must refer to the supplementary sheet for use with question 4, provided, to answer all parts of this question.

(a) Calculate the size for dimension X for the boss shown below.



(b) An elevation and end elevation of the spotlight are given below.



(i) A partial view of section G-G is shown below.

Apply hatching to this drawing in accordance with British Standard conventions.



MARKS DO NOT WRITE IN THIS MARGIN

4

MARKS DO NOT THIS (b) (continued) 4. (ii) The thumb screws are available with two types of grips on the heads, straight knurling or diamond knurling. Apply the British Standard convention for each type of knurling below. 2 STRAIGHT KNURLING DIAMOND KNURLING (c) The thumb screws are replaced with hand screws, which are easier for the user to grip. A rendered illustration and front elevation for the hand screw are shown below. 6 x R2.75 Equi SP on 20 PCD Υ **RENDERED ILLUSTRATION** 6 x R2·5 OF HAND SCREW Equi SP on 20 PCD **ELEVATION** (i) State what PCD stands for in the drawing above. 1 (ii) Calculate the angle Y shown in the drawing above. 1 [Turn over

X735760115*

MARKS DO NOT THIS Use the draft infographic on the supplementary sheet for use with question 5, 5. provided, to answer all parts of this question. A graphic artist has produced a draft infographic, which gives readers advice on how to save money on their energy bills. (a) Describe how the graphic artist has used **shape** to create **rhythm**. 2 (b) Explain why the graphic artist's use of grid structure is of benefit to the reader. 2 (c) Describe how the graphic artist has created **unity** throughout the graphic. 2 2 (d) Describe how the graphic artist has created **depth** in the graphic.

X735760116*

Γ			MARKS	DO NOT WRITE IN THIS
5	. (continued)		MARGIN
	(e) Describe how the graphic artist has used alignment in the graphic.	2	
			-	
	(1	Describe how the graphic artist has created emphasis in the graphic.	2	
			-	
			-	
		[Turn over		
L		* X 7 3 5 7 6 0 1 1 7 *		

A c wai	company already has a large client base for its printed publications and nts to expand to an online style magazine.	
(a)	State two advantages to the consumer, other than cost, of an online publication when compared with a printed publication.	2
(b)	The company will launch an online magazine with the option to view in a variety of languages.	
	Describe how this feature would be of benefit to the company.	1
(c)	The online magazine will be available across a variety of electronic devices.	
	Explain why the choice of typeface is an important aspect for the company to consider when creating the online magazine.	2



L

6.	(cor	ntinued)		MA
	(d)	When choosing the typeface, the graphic designers considered different serif and sans serif fonts.		
		Describe the main characteristics of serif fonts.	1	
		You may use sketches to support your answer.		
	(e)	The company stores its graphics library in the cloud. Describe two advantages of cloud based storage for graphic designers.	2	
		[Turn over		



6.	(cor	ntinue	d)	MARKS	DO NO WRITE THIS
	Use use	the d with d	lesktop published magazine page on the supplementary sheet for question 6 (f)–(j) , provided, to answer the following questions.		MARGI
	(f)	Expla publi:	in how the following DTP features have been used on the desktop shed magazine page.		
		(i)	Transparency	1	
		(ii)	Colour picking	1	
	(g)	A dro	p cap has been used on the desktop published magazine page.	2	
				L	
	(h)		ree has been used on the desister published measuring page		
	(1)	Descr	ribe the use of reverse in the desktop published magazine page.	2	
					l

Г			MARKS	DO NOT	
6.	(cor	ntinued)		THIS	
	(i)	The graphic designer has used different types of justification on the desktop published magazine page.			
		Explain why the designer has chosen to do this for the main body text.	1		
	(i)	Line has been used on the deskton published magazine page			
	0)	Describe how the use of line has been used to enhance the desktop published magazine page.	2		
		[END OF QUESTION PAPER]			
L		* X 7 3 5 7 6 0 1 2 1 *		-	

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ADDITIONAL SPACE FOR ANSWERS



MARKS DO NOT WRITE IN THIS MARGIN

ADDITIONAL SPACE FOR ANSWERS



ACKNOWLEDGEMENTS

Question 3 (a) – EPSTOCK/Shutterstock.com Wanzer/Shutterstock.com

Question 3 (b) - alexandre zveiger/Shutterstock.com





National Qualifications 2018

X735/76/11

Graphic Communication Supplementary Sheets

THURSDAY, 10 MAY 1:00 PM – 3:00 PM

Supplementary sheets for use with questions 4(a), 5 and 6(f)-(j).





Supplementary sheet for use with question 4 (a)











PARTS LIST					
PART NO.	PART NAME	NO. OF PARTS			
1	CEILING FIXING MOUNT	1			
2	FLANGED MACHINE SCREW	3			
3	FIXING COVER	1			
4	MOUNTING BRACKET	1			
5	THUMB SCREW	2			
6	SPOTLIGHT CASING AND GRILL	1			

(5)

Infographic



Desktop published magazine page

Produit:Paris | Editor's word

Bright Spark!

ulla vestibulum eleifend nulla. Suspendisse potenti. Aliquam turpis nisi, venenatis non, accumsan nec, imperdiet laoreet, lacus. In purus est, mattis eget, imperdiet nec, fermentum congue, tortor. Aenean ut nibh. Nullam hendrerit viverra dolor. Vestibulum fringilla, lectus id viverra malesuada, enim mi adipiscing ligula, et bibendum lacus lectus id sem. Cras risus turpis, varius ac, feugiat id, faucibus vitae, massa. Nunc gravida nonummy felis. Etiam



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C. Findlay

Best wishes Calum Findlay Editor

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Produit A Paris

Inside this month's issue:

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