	FOR OFFICIAL USE	ons					
X735/77/01	2018		Gra	phic C	Comm	unic	atio
THURSDAY, 10 MAY 1:00 PM – 3:00 PM					* X 7 3	5 7	7 0 1
Fill in these haves and re	ad what is printed	below					
Full name of centre			Town				
Full name of centre	Surna	me	Town		Nur	nber o	f seat

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.





		Total marks — 80	MARKS	DO NOT	
		Attempt ALL guestions		THIS	
1.	A cafe ch event is I been aske	ain called 'Taco Health' is opening a new premises. A promotional being planned prior to the opening and a marketing company has ed to produce a promotional video that features animated characters.			
	The purpe	ose of the video is to communicate the following information:			
	the m	ain features of the interior design			
	 how c 	ustomers use the cafe			
	how e	mployees prepare orders and serve the customers.			
	(a) Desc the p	ribe two advantages of using each of these techniques in creating promotional video.			
	(i)	Motion-capture	2		
	(::)		2		
	(11)	Motion-tweening	Z		
	(iii)	Transitions	2		
	(11)		-		

1

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

1. (continued)

(b) State a suitable file type for the video to be viewed on a mobile device.

Samples of printed items used in the cafe will also be available to view at the promotional event. All of these items feature the company logo which includes both graphics and text. The printed items include the following:

- Menus printed on biodegradable plastic
- Window graphics with a height of 2500 mm
- Promotional posters that include a copper spot colour.
- (c) Describe three issues the print technician must address to ensure quality and consistency of the brand across these different printed items.

3

The promotional event will also highlight the importance of environmental considerations in the cafe's business model.

(d) Describe how the cafe's menu would be produced to minimise the impact on the environment, other than by using a biodegradable substrate.





2

MARKS DO NOT WRITE IN THIS MARGIN

1.	(cont	inue	d)	MARKS	DO NOT WRITE IN		
	A phone app will also be launched at the event. It will include the location of the new cafe, an online booking facility that includes a floor plan of the new store and a menu tool.						
	Refei the p	r to t hone	the supplementary sheet for use with question 1 (e) for images of e app.				
	Design elements and principles have been used in the design of the store location mapping tool shown in Image 1 .						
	 (e) (i) State the single design principle used to suggest the blue circle ir Image 1 is 'flashing'. 						
		(ii)	Describe how the flashing blue circle enhances the user's experience of the mapping tool.	2			

Γ



(f) F	xpla	in, giving two reasons, why this file format was chosen.	2
(· / =			~
_			
_			
_			
_			
_			
Raste and th	r file ne m	e types were used in the app in both the mapping tool in Image 1 nenu tool in Image 3.	
(g)	(i)	Describe an advantage of using this file type for the mapping tool.	1
	(ii)	Describe an advantage of using this file type in the menu tool.	
		You must give a different advantage to the one you have described above.	1
		[Turn over	

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Eacl	h logo includes the registered trade mark symbol shown. (\mathbb{R})	
(c)	Explain why it is necessary for companies to protect their logo designs in this way.	2
CEN grap mai	CHEM ENGINEERING INTERNATIONAL has developed many forms of ohic communications which include both digital and printed media. The n company logo, shown below, appears in all communications.	
	CENTRE OF THE CHEMICAL ENGINEERING REVOLUTION INTERNATIONAL	
(d)	Describe four issues associated with replicating this logo across printed and digital media.	4

2.	(continu	ed)	MARKS	DO NOT WRITE IN THIS							
	Two exa have be	mples of CENCHEM ENGINEERING INTERNATIONAL company graphics en included on the supplementary sheet.		MARGIN							
	Refer to the supplementary sheet for use with question 2 (e), Image 1 and Image 2.										
	Image 1 An interactive advertisement from the company website aimed at recruiting new graduates.										
	Image 2 A printed leaflet aimed at communicating statistical information to the general public.										
	(e) (i	Describe, with reference to Image 1 , how the following design elements and principles have contributed to the creation of a clear focal point in this design.	3								
		Depth of field									
		Shape									
		Radial balance									
	(ii) Explain why the use of a 'focal point' helps the advertisement									
		communicate effectively with this target audience.	2								
				-							

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2.	(e)	(cont	tinued)	MARKS	DO NOT WRITE IN
		(iii)	Describe, with reference to Image 2 , how the designer has used 'white space', 'grid structure' and 'unity' in the leaflet to communicate effectively with the target audience. White space	3	I HIS MARGIN
			Grid structure		
			Unity		
			[Turn over		
-					-

THIS 3. An architectural company has produced plans for a new office and leisure complex. The leisure complex will be available to office staff and local residents. In order to communicate effectively with this target audience an artist's impression of the site plan has been produced, shown in Image 1. Image 1 Scale n 50 metres Key: Landscaping Buildings Lake including pathways and Car parks and Outdoor trees road access social spaces (a) Explain why the artist's impression has been used to communicate the proposal to this target audience. 2 A British Standards site plan of the same area is also required to help professionals working on the project. (i) State two features that would be included in a British Standards (b) 2 site plan that do not appear in the artist's impression. Feature 1 _____ Feature 2

X 7

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5. (b) (cont	nuea)	MARKS
	(11)	Standards site plan during the project.	2
An ur starte buildi	nder ed. T ing so	ground survey was carried out on the land before construction he results of this survey can be useful to various professionals in the ector.	
(c)	(i)	State two purposes of this type of survey.	2
	(ii)	Describe how a structural engineer would make use of an underground survey.	2
((iii)	Describe how a conservation body would make use of this type of survey.	2

3. (continued)

The phases in the development of the site are listed on a planning chart, such as a Gantt chart.

One phase is the excavation of the site, scheduled for completion before the foundations are laid. However a significant quantity of hazardous material was uncovered during this phase of the project that was not picked up by the underground survey.

- (d) Explain the effects that this discovery would have on the planning chart and on the resource management of the project.
- 3

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8

4. A 3D computer model of a proposed office unit is shown below. It is to be used in a promotional document where it will be placed in a suitable environment.



(a) Name four different computer-aided illustration techniques and describe how they would enhance the model of the office unit after it has been placed in a suitable environment.

Technique 1 _____ Description _____ Technique 2 _____ Description _____ Technique 3 _____ Description _____



4. (a) (con	tinued)		MAR
	Tech	nique 4		
	Desc	ription		
A A :	structu	ral engineer has been asked to test certain aspects of the design. shot taken during the digital test is shown below.		
		<image/>		
(b) (i)	State the digital testing method shown.	1	
	(ii)	Describe how the test results could be used by the design and construction company.	2	

* X 7 3 5 7 7 0 1 1 5 * page 15

4. (continued)

Digital testing was also requested to simulate the spread of fire through the building.

Two screenshots, showing a sectional end elevation of the building, were taken during the testing and simulation. These are shown in **Image 1** and **Image 2** below.

The building has not been drawn to British Standards.

Image 1: Building 15 minutes after ignition.



Image 2: Building 45 minutes after ignition.





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4.	(con	tinue	d)	MARKS	D W
	(c)	(i)	Explain why CFD is the appropriate simulation method to show the spread of fire.	1	~
		(ii)	Describe how the data generated by the CFD test could be used, other than in planning an evacuation.	1	
	A fir from place	e eva 1 the 0 e.	cuation route was determined after the company analysed the data digital test. A digital simulation was created of the evacuation taking		
	(d)	Expla evacı	ain why the VRML file format was used to save the simulation of the Juation.	2	
			[Turn over		

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5. A coffee company is introducing a cafetiere service within its shops. The proposed design of the cafetiere is shown below in Image 1.

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The frame of the cafetiere, shown below, in **Image 2** consists of four vertical arms joined together at the base and by a ring at the top. Orthographic views of the frame are shown on the **supplementary sheet for use with question 5 (a)**.



Image 2

Image 1

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5. (continued)

Refer to the supplementary sheet for use with question 5 (a).

(a) Describe the 3D CAD modelling techniques that would be used to create the frame. You may use sketches to support your answer. Dimensions do **not** need to be included in your response. **Ignore the metal ring and connection to the handle** (these are greyed out on the supplementary sheet).



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5. (a) (continued)

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5. (continued)

A model maker has been asked to produce a 3D printed prototype of the handle. This prototype will be used to test the comfort of the handle and how it is assembled to the cafetiere's frame.



- (b) (i) State the name of the file type used to produce a 3D print of the handle.
 - (ii) Explain why 'model manipulation' and 'dimensional tolerances' must be considered before 3D printing the handle.

Model manipulation _____

Dimensional tolerances

[Turn over for next question



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1

MARKS DO NOT WRITE IN THIS MARGIN 5. (continued) Part of the cafetiere known as the filter spring is shown below. It is designed to keep the filter in touch with the inside of the glass jug. Refer to the supplementary sheet for use with question 5 (c). (c) Describe the 3D CAD modelling techniques that would be used to create the filter spring. You may use sketches to support your answer. 3 [END OF QUESTION PAPER]



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ADDITIONAL SPACE FOR ANSWERS AND ROUGH WORK



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MARKS DO NOT WRITE IN THIS MARGIN

ADDITIONAL SPACE FOR ANSWERS AND ROUGH WORK



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ACKNOWLEDGEMENTS

Question 2 – Petronas logo.

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Question 3 – Marusoi/Shutterstock.com MicroOne/Shutterstock.com

Question 4 – Yurii Andreichyn/Shutterstock.com

Question 4(b) – Image is taken from https://dam.autodesk.com/c/gzmjrrdz. Image courtesy of Autodesk, Inc. @ 2018

Question 4 (c) – Al-xVadinska/Shutterstock.com





National Qualifications 2018

X735/77/11

Graphic Communication Supplementary Sheets

THURSDAY, 10 MAY 1:00 PM – 3:00 PM

Supplementary sheets for use with questions 1, 2 and 5.











Image 1: An interactive advertisement from the company website aimed at recruiting new graduates



Image 2: A printed leaflet aimed at communicating statistical information to the general public





Author:	ANON
Tolerance:	N/A
Scale:	Not to Scale
Sheet No:	1
Title:	Cafetiere Project
Drawing Title:	Filter Spring
Dimensions:	Millimetres (mm)

Ø1

ELEVATION

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ACKNOWLEDGEMENTS

- Question 1 MPFphotography/Shutterstock.com Yazzik/Shutterstock.com IrinkaArt/Shutterstock.com cobraphotography/Shutterstock.com Nitr/Shutterstock.com Joshua Resnik/Shutterstock.com Teri Virbickis/Shutterstock.com Brent Hofacker/Shutterstock.com Dallas Events Inc/Shutterstock.com
- Question 2 (e) Pressmaster/Shutterstock.com AD Hunter/Shutterstock.com pne/Shutterstock.com arip teguh santoso/Shutterstock.com lukeruk/Shutterstock.com Blablo101/Shutterstock.com Nizwa Design/Shutterstock.com