

		Centre Number			
Candidate Number					
		Can	didat	e Nu	mber
		Can	didat	e Nu	mber

General Certificate of Secondary Education 2015

Engineering

Paper 1 Assessment Unit 3

assessing
Engineering Technology



[GEE31] TUESDAY 19 MAY, MORNING

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper. Answer **all ten** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 80.

Figures in brack ts printed down the right-hand side of pages indicate the mark awarded to each part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Total	
Marks	

1 (a) All the products below belong to a manufacturing sector.

Circle **two** products shown below that belong to the mechanical fabrication sector.

You **must** only circle **two** products. If you make a mistake you must clearly show which two products you have chosen.



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[2]

(b) All the products below belong to a manufacturing sector.

Examiner Only

Marks Remark

Circle **two** products shown below that belong to the engineering fabrication sector.

You **must** only circle **two** products. If you make a mistake you must clearly show which two products you have chosen.



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[2]

Answer all parts of this question in the spaces provided below.

Examiner Only
Marks Remark

Question	Answer	
(a) Identify the joining process shown and give a practical example of where it could be	d ining process	
used. © Thinkstock	Use	[2]
(b) Name the tool shown below and state one use for it.	Name of item	
© Thinkstock	Use	_ [2]
(c) Identify the cutting tool shown below and give one safety precaution that should	Name	
be observed when using this tool.	Safety precaution	
© Thinkstock		[_] [2]

4

Question	Answer	
(d) Identify the joining process that uses the tool shown below and give a practical	d ining process	
ea mple of where it could be used.	Use	
© Thinkstock		[2]
(e) Name the tool shown below and state one use for it in an Engineering room.	Tool	
	Use	
© Thinkstock		[2]

Examin Marks	er Only Remark	

CI is used to organise and control production in engineering industries	Examin Marks
a) What does the abbreviation ICT stand for?	
	[1]
State one advantage of using ICT in the work lace.	
	[1]
State one disadvantage of using ICT in the work lace.	
	[1]
d) Describe, giving two examples, why the electronic transfer of data useful for companies with separate sites.	is
e) Methods of communication have evolved rapidly in recent years to include social network ng. Outline one positive impact and one negative impact of social network ng sites in the engineering sector	[2]
Positive impact	
	[1]
Negative impact	
	[1]

	dern materials and mputer Integrated Manufacture	
a) Pr	oduct one	
(i)	Modern material	
		[1]
(ii)	Computer Integrated Manufacture	
		[1]
b) Pr	oduct two	
b) Pr — (i)	Modern material	
_		[1]
(i)		
(i)	Modern material	

(c)	Describe two difficulties a manufacturer might encounter when trying to implement modern materials and modern technology into a company's production line.		
	1		
	[2]		
	2		
	[2]		

Examir Marks	ner Only Remark
Maiks	Remark

	1	
		[2]
	2	
		[2]
(b)	The picture below shows a bracket which is used in the assembly of tumble dryer. Galvanised low carbon steel has been chosen as the preferred material. Suggest a suitable alternative non-ferrous metal that could be used, and explain why you think low carbon steel has been chosen.	
	Source: Chief Examiner	
	Alternative non-ferrous metal	
		[1]
	Low carbon steel has been chosen because:	
(c)	The hole positions on the brack t are critical. Describe, giving two ex mples, how these could be check d quick y and accurately on a production line.	ì
	1	
		[2]

6 Bearings such as the one shown below are commonly used in machines and vehicles.

Examiner Only		
Marks	Remark	



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(a)	Outline two reasons for using bearings in engineering systems.
	1

______[1]

______[1]

(b) State **two** lubricants used in machines and vehicles.

1.______[1]

2. ______[1]

(c) Outline **two** reasons why lubrication is important in machining processes in the engineering sector.

1._____

2. _____

______[1]

7 CAM is used ex ensively throughout the engineering sector to manufacture products. The picture below shows a CNC lathe turning down a section of steel bar. This is one ex mple of CAM.

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Marks	Remark			



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(a)	Dutline two benefits for an engineering company of using CAM in the	ir
	actory.	

2. _____

_____ [1]

(b) Ep lain how the use of CAM in product manufacture can ensure fewer faults in the end product.

______[2]

(c) Outline **two** ways in which CAM in industry has helped control manufacturing costs.

1._____

______[1]

— [.]

(a)	Describe, giving one example, how the work orce has been affecte with the introduction of new technologies.		Examiner C Marks Re
(b)	Describe, giving two examples, the potential benefit to the environment of using modern technologies when designing and manufacturing engineered products.		
	1		
		[2]	
(c)	Describe two cost factors that should be taken into account before introducing modern technologies into an engineering environment. 1		
		[2]	
	2	[2]	

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)	Describe two ways in which the use of new technology has improve	ed
	the design and development of products in the engineering sector.	.
	1	
		[2]
	2	
		[2]
o)	Discuss the implications of the introduction of new technologies on assembly and dispatch of engineered products.	the
		[6]
		. [○]
_	THIS IS THE END OF THE QUESTION PAPER	
'	THIS IS THE LIND OF THE QUESTION FAILER	

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