

Write your name here	
Surname	Other names
Edexcel Principal Learning	Centre Number
	Candidate Number
Engineering	
Level 1	
Unit 1: Introducing the Engineering World	
Wednesday 19 May 2010 – Morning Time: 1 hour	Paper Reference EG101/01
You do not need any other materials.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 45.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

H35776A

©2010 Edexcel Limited.
5/4/5/2



Turn over ►

edexcel 
advancing learning, changing lives

All questions must be answered with a cross . If you change your mind about an answer, put a line through the box and then mark your new answer with a cross .

1 Which **one** of the following can be used as a communications technology?

A	Wind farm	<input type="checkbox"/>
B	National Grid	<input type="checkbox"/>
C	PayPal	<input type="checkbox"/>
D	Broadband	<input type="checkbox"/>

(Total for Question 1 = 1 mark)

2 Refuse collectors separate drinks cans from other rubbish because they are:

A	replaceable	<input type="checkbox"/>
B	dispensable	<input type="checkbox"/>
C	disposable	<input type="checkbox"/>
D	recyclable	<input type="checkbox"/>

(Total for Question 2 = 1 mark)

3 Cosmetic products such as hair gel and suntan lotion are made in which industry sector?

A	Food	<input type="checkbox"/>
B	Chemical	<input type="checkbox"/>
C	Marine	<input type="checkbox"/>
D	Automotive	<input type="checkbox"/>

(Total for Question 3 = 1 mark)

4 Synthetic materials are used to make waterproof jackets which are worn for outdoor activities.

Such materials can be classified as:

A	ceramics	<input type="checkbox"/>
B	metals	<input type="checkbox"/>
C	polymers	<input type="checkbox"/>
D	semiconductors	<input type="checkbox"/>

(Total for Question 4 = 1 mark)



5 Following a meeting of engineers, the outcomes are distributed to the management team in the form of:

A	drawings	<input type="checkbox"/>
B	minutes	<input type="checkbox"/>
C	a flipchart	<input type="checkbox"/>
D	a whiteboard	<input type="checkbox"/>

(Total for Question 5 = 1 mark)

6 Which **one** of the following statements is **not** true of thermosetting plastics?

A	They change shape when reheated	<input type="checkbox"/>
B	They are excellent electrical insulators	<input type="checkbox"/>
C	They are rigid after moulding	<input type="checkbox"/>
D	They shatter if a sharp force is applied	<input type="checkbox"/>

(Total for Question 6 = 1 mark)

7 Which **one** of the following energy sources is used to power high speed trains?

A	Electric	<input type="checkbox"/>
B	Solar	<input type="checkbox"/>
C	Wind	<input type="checkbox"/>
D	Nuclear	<input type="checkbox"/>

(Total for Question 7 = 1 mark)

8 According to environmental laws, personal computers should be disposed of correctly.

This is because they:

A	have plastic parts	<input type="checkbox"/>
B	contain glass	<input type="checkbox"/>
C	use electronic software	<input type="checkbox"/>
D	have parts that contain mercury	<input type="checkbox"/>

(Total for Question 8 = 1 mark)



9 Landfill sites are used to:

A	recycle refuse	<input type="checkbox"/>
B	store rubbish	<input type="checkbox"/>
C	reduce waste	<input type="checkbox"/>
D	incinerate litter	<input type="checkbox"/>

(Total for Question 9 = 1 mark)

10 Stainless steel kitchen sinks are made by which process?

A	Turning	<input type="checkbox"/>
B	Casting	<input type="checkbox"/>
C	Honing	<input type="checkbox"/>
D	Forging	<input type="checkbox"/>

(Total for Question 10 = 1 mark)

11 A suitable material for the bristles of a toothbrush is:

A	copper wire	<input type="checkbox"/>
B	carbon fibre	<input type="checkbox"/>
C	nylon fibre	<input type="checkbox"/>
D	steel wire	<input type="checkbox"/>

(Total for Question 11 = 1 mark)

12 Which of the following is **not** a Greenhouse gas?

A	Carbon dioxide	<input type="checkbox"/>
B	Methane	<input type="checkbox"/>
C	Nitrous oxide	<input type="checkbox"/>
D	Oxygen	<input type="checkbox"/>

(Total for Question 12 = 1 mark)



13 Which **one** of the following forms of power consumes fossil fuel reserves?

A	Diesel	<input type="checkbox"/>
B	Wave	<input type="checkbox"/>
C	Nuclear	<input type="checkbox"/>
D	Solar	<input type="checkbox"/>

(Total for Question 13 = 1 mark)

14 Home energy use is improved by double glazing because it:

A	stops heat escaping	<input type="checkbox"/>
B	insulates against noise	<input type="checkbox"/>
C	uses more glass	<input type="checkbox"/>
D	absorbs heat from outside	<input type="checkbox"/>

(Total for Question 14 = 1 mark)

15 More efficient use of fossil fuels in industrial processes has **not** improved:

A	air quality	<input type="checkbox"/>
B	greenhouse gas emissions	<input type="checkbox"/>
C	drinking water quality	<input type="checkbox"/>
D	carbon footprints	<input type="checkbox"/>

(Total for Question 15 = 1 mark)

16 Earth moving equipment such as bulldozer buckets are designed by:

A	marine engineers	<input type="checkbox"/>
B	civil engineers	<input type="checkbox"/>
C	mechanical engineers	<input type="checkbox"/>
D	environmental engineers	<input type="checkbox"/>

(Total for Question 16 = 1 mark)



17 Polyester fabric is used for making clothes such as tracksuits.

Polyester fabric is an improvement on cotton fabric because it is:

A	more wear resistant	<input type="checkbox"/>
B	more dense	<input type="checkbox"/>
C	less expensive	<input type="checkbox"/>
D	less water resistant	<input type="checkbox"/>

(Total for Question 17 = 1 mark)

18 Which **one** of the following engineering processes is used to make disposable fizzy drink bottles?

A	Blow moulding	<input type="checkbox"/>
B	Casting	<input type="checkbox"/>
C	Machining	<input type="checkbox"/>
D	Vacuum forming	<input type="checkbox"/>

(Total for Question 18 = 1 mark)

19 Polymers are used to make some mobile phone components because they are electrical:

A	conductors	<input type="checkbox"/>
B	insulators	<input type="checkbox"/>
C	generators	<input type="checkbox"/>
D	semi-conductors	<input type="checkbox"/>

(Total for Question 19 = 1 mark)

20 Lagging is wrapped around household hot water pipes because it:

A	radiates heat	<input type="checkbox"/>
B	convects heat	<input type="checkbox"/>
C	insulates against heat loss	<input type="checkbox"/>
D	absorbs heat from the surroundings	<input type="checkbox"/>

(Total for Question 20 = 1 mark)



BLANK PAGE



H 3 5 7 7 6 A 0 7 2 0

7
Turn over ▶

21



(a) Mains gas is delivered to most UK homes by:

(1)

A	overhead cables	<input type="checkbox"/>
B	road tanker	<input type="checkbox"/>
C	rail freight	<input type="checkbox"/>
D	underground pipes	<input type="checkbox"/>

(b) Mains gas used in most UK homes comes from:

(1)

A	oil refineries	<input type="checkbox"/>
B	power stations	<input type="checkbox"/>
C	natural oil deposits	<input type="checkbox"/>
D	wind farms	<input type="checkbox"/>

(c) The grill pan used in most gas cookers is made from:

(1)

A	sheet steel	<input type="checkbox"/>
B	medium density fibreboard	<input type="checkbox"/>
C	glass reinforced plastic	<input type="checkbox"/>
D	carbon fibre composites	<input type="checkbox"/>



(d) Gas cookers should only be installed by:

(1)

A	unskilled operatives	<input type="checkbox"/>
B	qualified personnel	<input type="checkbox"/>
C	clerical staff	<input type="checkbox"/>
D	aeronautical engineers	<input type="checkbox"/>

(Total for Question 21 = 4 marks)



22



(a) Which industry sector manufactures aircraft?

(1)

A	Civil	<input type="checkbox"/>
B	Automotive	<input type="checkbox"/>
C	Chemical	<input type="checkbox"/>
D	Aerospace	<input type="checkbox"/>

(b) Aircraft help the economy in the UK **mainly** because:

(1)

A	aviation fuel is cheaper than petrol	<input type="checkbox"/>
B	they don't cause traffic jams	<input type="checkbox"/>
C	goods can be exported more quickly	<input type="checkbox"/>
D	products are sold at airport shops	<input type="checkbox"/>



(c) Personnel who perform routine maintenance tasks on aircraft are classified as:

(1)

A	technical	<input type="checkbox"/>
B	unqualified	<input type="checkbox"/>
C	controllers	<input type="checkbox"/>
D	clerical	<input type="checkbox"/>

(d) The wings of a jet plane are usually made from:

(1)

A	wrought iron	<input type="checkbox"/>
B	steel alloys	<input type="checkbox"/>
C	wooden composites	<input type="checkbox"/>
D	aluminium alloys	<input type="checkbox"/>

(Total for Question 22 = 4 marks)



H 3 5 7 7 6 A 0 1 1 2 0

23



(a) Which form of energy is generated by wind turbines?

(1)

A	Electrical	<input type="checkbox"/>
B	Nuclear	<input type="checkbox"/>
C	Potential	<input type="checkbox"/>
D	Solar	<input type="checkbox"/>

(b) Wind turbines are good for the environment because they:

(1)

A	do not use fossil fuels	<input type="checkbox"/>
B	improve wildlife habitat	<input type="checkbox"/>
C	develop the landscape	<input type="checkbox"/>
D	do not consume greenhouse gases	<input type="checkbox"/>

(c) Which type of engineers use manuals for repairing turbines?

(1)

A	Heating	<input type="checkbox"/>
B	Software	<input type="checkbox"/>
C	Maintenance	<input type="checkbox"/>
D	Environmental	<input type="checkbox"/>



(d) The blades of a wind turbine are likely to be made from:

(1)

A	cast iron	<input type="checkbox"/>
B	medium density fibreboard	<input type="checkbox"/>
C	steel sheets	<input type="checkbox"/>
D	glass reinforced plastics	<input type="checkbox"/>

(Total for Question 23 = 4 marks)



H 3 5 7 7 6 A 0 1 3 2 0

24

Energy Efficiency Rating		
	Current	Potential
(92-100) A		
(81-91) B		
(69-80) C		73
(55-68) D		



(a) The label above is used when selling products such as refrigerators. If the product is given a G rating then it is:

(1)

A	the most expensive to buy	<input type="checkbox"/>
B	the most energy efficient to run	<input type="checkbox"/>
C	the least energy efficient to run	<input type="checkbox"/>
D	the least expensive to buy	<input type="checkbox"/>

(b) Refrigerators are useful to people because fresh food can be:

(1)

A	recycled more cheaply	<input type="checkbox"/>
B	reformed slower	<input type="checkbox"/>
C	stored longer	<input type="checkbox"/>
D	salvaged more easily	<input type="checkbox"/>

(c) The rubber seal on a refrigerator door is designed to stop:

(1)

A	heat being generated	<input type="checkbox"/>
B	heat getting in	<input type="checkbox"/>
C	light being generated	<input type="checkbox"/>
D	light getting in	<input type="checkbox"/>



(d) The core of the electric cable attached to a refrigerator is likely to be made from:

(1)

A	steel	<input type="checkbox"/>
B	copper	<input type="checkbox"/>
C	mercury	<input type="checkbox"/>
D	gold	<input type="checkbox"/>

(Total for Question 24 = 4 marks)

25 Remotely operated vehicles (ROV) are typically used for:

A	undersea exploration	<input type="checkbox"/>
B	earth excavation	<input type="checkbox"/>
C	public transport	<input type="checkbox"/>
D	freight deliveries	<input type="checkbox"/>

(Total for Question 25 = 1 mark)



26



(a) Microwave ovens use:

(1)

A	wind energy	<input type="checkbox"/>
B	electrical energy	<input type="checkbox"/>
C	chemical energy	<input type="checkbox"/>
D	nuclear energy	<input type="checkbox"/>

(b) Electrical safety tests on microwave ovens are carried out by a:

(1)

A	chartered engineer	<input type="checkbox"/>
B	technician	<input type="checkbox"/>
C	clerk	<input type="checkbox"/>
D	personnel officer	<input type="checkbox"/>

(c) The outer casing of a microwave oven is likely to be made from:

(1)

A	stainless steel	<input type="checkbox"/>
B	glass fibre	<input type="checkbox"/>
C	cast iron	<input type="checkbox"/>
D	wooden composites	<input type="checkbox"/>



(d) The process for making the outer casing of a microwave oven is likely to be:

(1)

A	forming	<input type="checkbox"/>
B	machining	<input type="checkbox"/>
C	casting	<input type="checkbox"/>
D	spinning	<input type="checkbox"/>

(Total for Question 26 = 4 marks)

27 Which **one** of the following is the most appropriate description for companies that use efficient methods?

A	Lean	<input type="checkbox"/>
B	Fine	<input type="checkbox"/>
C	Mean	<input type="checkbox"/>
D	Slick	<input type="checkbox"/>

(Total for Question 27 = 1 mark)

28 The environmental reason for using rechargeable batteries is because they are:

A	recyclable	<input type="checkbox"/>
B	reliable	<input type="checkbox"/>
C	reusable	<input type="checkbox"/>
D	reversible	<input type="checkbox"/>

(Total for Question 28 = 1 mark)

29 Which **one** of the following relies on cellular networks?

A	Satellite navigation systems	<input type="checkbox"/>
B	Mobile phones	<input type="checkbox"/>
C	Two-way radios	<input type="checkbox"/>
D	Cordless telephones	<input type="checkbox"/>

(Total for Question 29 = 1 mark)



30 Which type of engineer designs bridges that are used to cross rivers?

A	Marine	<input type="checkbox"/>
B	Chemical	<input type="checkbox"/>
C	Automotive	<input type="checkbox"/>
D	Civil	<input type="checkbox"/>

(Total for Question 30 = 1 mark)

TOTAL FOR PAPER = 45 MARKS



BLANK PAGE



H 3 5 7 7 6 A 0 1 9 2 0

BLANK PAGE

