

Write your name here

Surname

Other names

**Edexcel
Principal Learning**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

Engineering

Level 3

**Unit 1: Investigating Engineering Business and
the Environment**

Thursday 24 May 2012 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

EG301/01

You must have:

Calculator

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 60.
- 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.

Turn over ►

P39973A

©2012 Pearson Education Ltd.

1/1/1



PEARSON

Answer ALL questions.

SECTION A

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

1 Manufacturing engineering is classified as:

A	primary	<input type="checkbox"/>
B	secondary	<input type="checkbox"/>
C	tertiary	<input type="checkbox"/>
D	quartinary	<input type="checkbox"/>

(Total for Question 1 = 1 mark)

2 Civil engineering is **not** concerned with the construction of:

A	houses	<input type="checkbox"/>
B	airports	<input type="checkbox"/>
C	railways	<input type="checkbox"/>
D	supermarkets	<input type="checkbox"/>

(Total for Question 2 = 1 mark)

3 Which **one** of the following would **not** be undertaken by an engineer from the telecommunications sector?

A	Installing radio transmitters	<input type="checkbox"/>
B	Developing cellular systems	<input type="checkbox"/>
C	Monitoring digital signals	<input type="checkbox"/>
D	Constructing radio masts	<input type="checkbox"/>

(Total for Question 3 = 1 mark)



4 Which **one** of the following is **not** found in a financial plan?

A	Balance sheet	<input type="checkbox"/>
B	Cash flow statement	<input type="checkbox"/>
C	Stock records	<input type="checkbox"/>
D	Profit forecast	<input type="checkbox"/>

(Total for Question 4 = 1 mark)

5 Which **one** of the following is considered a pollutant rather than just a waste product?

A	Timber off-cuts	<input type="checkbox"/>
B	Used car tyres	<input type="checkbox"/>
C	Enamel paint	<input type="checkbox"/>
D	Corrugated card	<input type="checkbox"/>

(Total for Question 5 = 1 mark)

6 The European Union definition of a small business is one which has:

A	<ul style="list-style-type: none">• less than 10 staff• turnover below €10 million	<input type="checkbox"/>
B	<ul style="list-style-type: none">• less than 50 staff• turnover below €10 million	<input type="checkbox"/>
C	<ul style="list-style-type: none">• less than 10 staff• turnover below €50 million	<input type="checkbox"/>
D	<ul style="list-style-type: none">• less than 50 staff• turnover below €50 million	<input type="checkbox"/>

(Total for Question 6 = 1 mark)



7 Absorption costing is a method of business accounting where:

A	the costs of materials and all other variable costs are included	<input type="checkbox"/>
B	the costs of materials, processes, and all overheads are included	<input type="checkbox"/>
C	only the costs of processes and equipment are included	<input type="checkbox"/>
D	only the cost of materials and fixed costs are included	<input type="checkbox"/>

(Total for Question 7 = 1 mark)

8 In engineering activities it is important that all employees are aware of safety signage and symbols.



Figure 1

Figure 1 shows a symbol which is associated with hazardous substances.

Which **one** of the following types of substance does it represent?

A	Toxic	<input type="checkbox"/>
B	Harmful	<input type="checkbox"/>
C	Irritant	<input type="checkbox"/>
D	Corrosive	<input type="checkbox"/>

(Total for Question 8 = 1 mark)



9 What type of engineering document would be used to identify the electronic components needed for a burglar alarm system?

A	Circuit diagram	<input type="checkbox"/>
B	Bill of works	<input type="checkbox"/>
C	Orthographic drawing	<input type="checkbox"/>
D	Sequence diagram	<input type="checkbox"/>

(Total for Question 9 = 1 mark)

10 A UK engineering business exports completed products to the United States. It sells 5000 items at \$5.00 each.

The exchange rate is \$1 = £0.65

The total production cost is £1 500

What is the profit made by the company on these products?

A	£1 750	<input type="checkbox"/>
B	£3 250	<input type="checkbox"/>
C	£14 750	<input type="checkbox"/>
D	£23 500	<input type="checkbox"/>

(Total for Question 10 = 1 mark)

11 Which types of PPE would be appropriate for an engineer operating a lathe in a workshop?

A	<ul style="list-style-type: none"> • Ear defenders • Safety boots • Hard hat 	<input type="checkbox"/>
B	<ul style="list-style-type: none"> • Ear defenders • Eye protection • Overalls 	<input type="checkbox"/>
C	<ul style="list-style-type: none"> • Safety boots • Hard hat • Eye protection 	<input type="checkbox"/>
D	<ul style="list-style-type: none"> • Leather gloves • Eye protection • Overalls 	<input type="checkbox"/>

(Total for Question 11 = 1 mark)



12 Which **one** of the following is an example of a direct cost?

A	Materials	<input type="checkbox"/>
B	Administration	<input type="checkbox"/>
C	Heating	<input type="checkbox"/>
D	Rents	<input type="checkbox"/>

(Total for Question 12 = 1 mark)

13 With regard to the safe use of **materials**, who is legally responsible for providing information to the end user?

A	Manufacturers	<input type="checkbox"/>
B	Suppliers	<input type="checkbox"/>
C	HSE	<input type="checkbox"/>
D	Government	<input type="checkbox"/>

(Total for Question 13 = 1 mark)

14 According to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995, which **one** of the following is **not** a reportable injury?

A	Chemical or hot metal burn to the eye	<input type="checkbox"/>
B	Unconsciousness caused by exposure to harmful substance	<input type="checkbox"/>
C	Broken arm from a falling object	<input type="checkbox"/>
D	Blister on a finger from a soldering iron	<input type="checkbox"/>

(Total for Question 14 = 1 mark)

15 A flat business structure would **not** have:

A	senior managers	<input type="checkbox"/>
B	middle managers	<input type="checkbox"/>
C	baseline workers	<input type="checkbox"/>
D	trainee workers	<input type="checkbox"/>

(Total for Question 15 = 1 mark)



16 The oil industry has the following activities:

- 1 Retailing
- 2 Distribution
- 3 Refining
- 4 Exploration
- 5 Extraction

Which **one** of the following is the correct sequence of activities in the oil industry?

A	3, 5, 4, 1, 2	<input type="checkbox"/>
B	4, 5, 2, 3, 1	<input type="checkbox"/>
C	5, 1, 4, 2, 3	<input type="checkbox"/>
D	4, 5, 3, 2, 1	<input type="checkbox"/>

(Total for Question 16 = 1 mark)

17 Who is responsible for making sure that appropriate PPE is available for an engineering activity?

A	Employer	<input type="checkbox"/>
B	Employee	<input type="checkbox"/>
C	Safety officer	<input type="checkbox"/>
D	Line manager	<input type="checkbox"/>

(Total for Question 17 = 1 mark)

18 Safety on a construction site can be improved by 'designing out' hazards.

What would be an appropriate method of designing out hazards in such a situation?

A	Use signage to identify PPE	<input type="checkbox"/>
B	Issue all employees with Hi-Viz vests	<input type="checkbox"/>
C	Prefabricate parts off site	<input type="checkbox"/>
D	Instruct workers how to use equipment	<input type="checkbox"/>

(Total for Question 18 = 1 mark)



19 Figure 2 shows an engineering drawing.

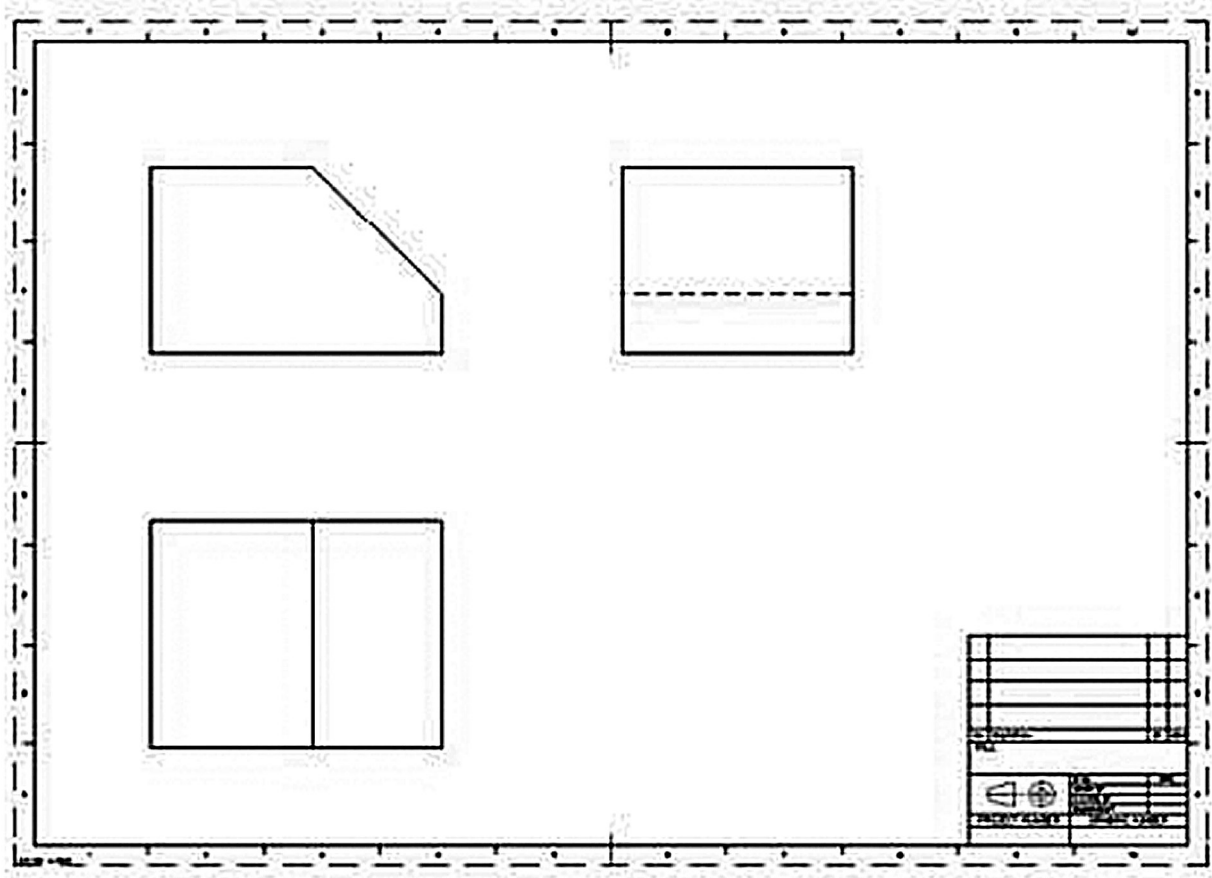


Figure 2

What type of projection is shown?

A	Oblique	<input type="checkbox"/>
B	First angle	<input type="checkbox"/>
C	Isometric	<input type="checkbox"/>
D	Third angle	<input type="checkbox"/>

(Total for Question 19 = 1 mark)

20 A typical long-term strategy for an engineering business would be:

A	increasing turnover by 5%	<input type="checkbox"/>
B	restructuring the staff	<input type="checkbox"/>
C	promoting a new product	<input type="checkbox"/>
D	considering relocation to new premises	<input type="checkbox"/>

(Total for Question 20 = 1 mark)

TOTAL FOR SECTION A = 20 MARKS



SECTION B

21 Identify **one** advantage and **one** disadvantage to an engineering business if there is a strong sterling pound (£) compared with foreign currencies.

Advantage

.....
.....

Disadvantage

.....
.....

(Total for Question 21 = 2 marks)

22 Identify **four** factors that an engineering business would need to consider when setting priorities in its plans.

1.....
.....

2.....
.....

3.....
.....

4.....
.....

(Total for Question 22 = 4 marks)



23 Explain why it is important to have regular inspections on machinery in an engineering workshop.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 23 = 4 marks)

24 Outline the importance to an engineering business of maintaining accurate records of work in progress.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 24 = 4 marks)



25 (a) Describe what is meant by the term 'established company'.

(2)

.....

.....

.....

.....

(b) Explain the term 'design capability'.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 25 = 6 marks)

TOTAL SECTION B = 20 MARKS



BLANK PAGE





BLANK PAGE

