

Write your name here

Surname

Other names

Edexcel
Principal Learning

Centre Number

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Candidate Number

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Manufacturing and Product Design

Level 3

Unit 1: Manufacturing Business Principles

Thursday 23 May 2013 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

MP301/01

You may use a 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 90.
- 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 ►

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PEARSON

Answer ALL questions. Write your answers in the space provided.

1 Key business functions give structure to manufacturing enterprises.

Outline the role of maintenance and servicing as a key business function.

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(Total for Question 1 = 2 marks)

2 State **two** characteristics that would identify a confectionery manufacturer as a large scale manufacturing enterprise.

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(Total for Question 2 = 2 marks)



3 Describe the key responsibilities of the managing director in a large scale manufacturing enterprise.

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(Total for Question 3 = 6 marks)



4 Discuss the reasons why entrepreneurship is important to the short term success and long term sustainability of a manufacturing enterprise.

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(Total for Question 4 = 6 marks)



5 Explain the role of design and development in a large scale manufacturing enterprise.

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(Total for Question 5 = 6 marks)



6 Discuss economic factors that can affect manufacturing businesses.

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(Total for Question 6 = 6 marks)



9 Outline **two** reasons why a company would decide to employ local labour.

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(Total for Question 9 = 4 marks)

10 Explain why a manufacturer would offer a maintenance and service policy with its product.

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(Total for Question 10 = 4 marks)



11 Explain why skills training is seen as a financial investment by a manufacturer.

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(Total for Question 11 = 6 marks)

12 (a) Outline what is meant by the term **variable cost**.

(2)

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(b) Outline what is meant by the term **indirect cost**.

(2)

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(Total for Question 12 = 4 marks)



13 (a) Explain a value-adding activity for a manufacturing business.

(4)

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(b) Explain how using Just in Time (JIT) techniques saves money for a manufacturer.

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(Total for Question 13 = 8 marks)



14 Explain the purpose of carrying out a cost benefit analysis for a manufacturing project.

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(Total for Question 14 = 4 marks)



15 A manufacturing enterprise purchased a new machine for £60 000 on 1st January 2014.

It is estimated that the machine will have a residual value of 25% of the purchase price after 5 years of useful life.

The enterprise has an accounting year end of 31st December.

(a) Using the formula for straight line depreciation,

$$Dpn = \frac{(C - R)}{N}$$

calculate the annual straight line depreciation charge.

Show your working.

(2)

Space for working

Answer:.....

(b) Complete the balance sheet for 31st December 2017.

(2)

Balance sheet at 31st December 2017

	Liabilities (£)	Assets (£)
Machine at cost	60 000	
Accumulated depreciation	
Machine at net book value	



(c) Outline why a manufacturer would use a balance sheet.

(2)

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(Total for Question 15 = 6 marks)



16 The following table shows a cost benefit analysis for developing two products, X and Y.

Product	X	Y
Period over which benefits are calculated	6 months	12 months
Costs		
Design and development	£2 500	£2 000
Promotion	£500	£300
Administration	£500	£200
Facilities	£1 000	£1 000
Evaluation costs	£100	£100
Public consultation costs	£200	£200
Total costs	£4 800	£3 800
Benefits		
Labour saving	£1 000	£1 000
Productivity increases	£1 000	£1 000
Other cost savings	£500	£300
Other income generated	£500	£100
Total benefits	£3 000	£2 400

(a) (i) Calculate the return on investment for each product.

(3)

Show your calculations here

Answer for Product X:

Answer for Product Y:

(ii) State which product should be developed using the return on investment method.

(1)



(b) (i) Calculate the payback period (in months) for each product.

(3)

Show your calculations here

Answer for Product X:

Answer for Product Y:

(ii) Using the payback period method, state which product should be developed.

(1)

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(c) Compare your answers to (a)(ii) and (b)(ii) and explain which product you would develop and why.

(2)

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(Total for Question 16 = 10 marks)

TOTAL FOR PAPER = 90 MARKS

