

Surname	Centre Number	Candidate Number
Other Names		2



GCE A level

1605/01

APPLIED BUSINESS – ABUS5

Paper version of on-screen assessment

A.M. FRIDAY, 13 June 2014

2 hours

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Candidates are required to answer **any two** of the following sections:

Section A Decision-making and the Marketing function. Pages 4 - 10.

Section B Decision-making and the Production function. Pages 12 - 17.

Section C Decision-making and the Finance function. Pages 18 - 24.

Section D Other decision-making tools. Pages 26 - 31.

All questions in **both** your chosen sections are compulsory.

The context for all sections is set in the Introduction.

INFORMATION FOR CANDIDATES

Quality of Written Communication

This will be assessed in questions:

Section A Question 3

Section B Question 2

Section C Question 6

Section D Question 7

Calculators may be used

SECTION	For Examiner's use only	
	Question	Mark Awarded
	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	Total	

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INTRODUCTION

InsectAside plc

The following information applies to **all** Sections.

InsectAside plc (IA plc) is a UK-based manufacturer of pesticides (pest control products for use in farms and gardens). The company was established in 1984 and now offers a wide range of products for use by both commercial growers and domestic gardeners. *IA plc* concentrates increasingly on 'eco-friendly' products ('green' products) that offer pest control with minimal impact on the environment.

IA plc has its factory in Bristol and is managed from its Head Office, which is in your local area. You have been placed in *IA plc's* Head Office for a period of work experience.



Hello, it's nice to meet you. I'm Jo Sandell, and I'll be responsible for overseeing your work experience with InsectAside plc – that's the company's full name, though we tend to shorten it to IA plc. The technicians and manufacturing staff work in our Bristol factory, which has a laboratory, powder-handling equipment and product bottling lines. Here at Head Office we carry out the mainstream business activities that you'll be familiar with from your studies.

SECTION A

Decision-making and the Marketing function



At IA plc we're aware of the importance of using eco-friendly products, so we're improving our range of 'green' pesticides to sell to both commercial farmers and ordinary gardeners. There's a marketing meeting soon at which we'll discuss our market segmentation and population characteristics, see the results of our panel surveys, and decide whether to use random or non-random sampling in our next research.

1. Describe what the following terms, used by Jo, mean:

- “market segmentation”

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- “population characteristics”

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- “panel surveys”

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- “non-random sampling”

[2]

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2. In 2013, *IA plc* launched a range of ‘green’ pesticides for non-commercial customers (domestic gardeners). This range replaced other pesticides that had a small market share in what had become a low-growth market for these traditional pest control products. The company’s new range is sold in the high-growth market for ‘green’ pest control products and it has, as yet, only a low share of this market.

State, using evidence from the above information, how the following would be classified using the BCG Matrix (‘Boston Box’) analysis:

- the new product range

[2]

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- the old pesticide products.

[2]

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3. Assess the extent to which the BCG Matrix could help the directors of *IA plc* when deciding whether or not to continue marketing **this** new product range. [8]

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4. At the marketing meeting, you were given a copy of the memo shown below.

MEMO

From: Head of Marketing **To: Domestic Product Team Leaders**

Subject: Domestic 'green' products **Date: Today**

I've been given the following by Jen, our Statistician.

Year	Percentage of UK households using 'green' garden products	UK garden size (estimated average, front and back gardens, m²)
2011	40.5	88.5
2010	16.2	88.6
2009	8.1	88.8
2008	5.4	89.1
2007	4.5	89.5
2006	4.2	90.0

Comment on any trend shown by the figures in the memo using calculations to support your comments. [6]

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SECTION B

Decision-making and the Production function



We sell pesticides and other products to farmers and members of the public who enjoy gardening. As you know, our factory in Bristol manufactures our products. We use batch production methods to make our new range of eco-friendly gardening products. As a result of manufacturing this new range, we've decided to review our stockholding policies.

1. *IA plc* recently developed a new range of eco-friendly 'green' gardening products for use by domestic gardeners.

Outline the purpose of **any two** of the following stages of new product development.

- Idea screening
- Business analysis
- Test marketing

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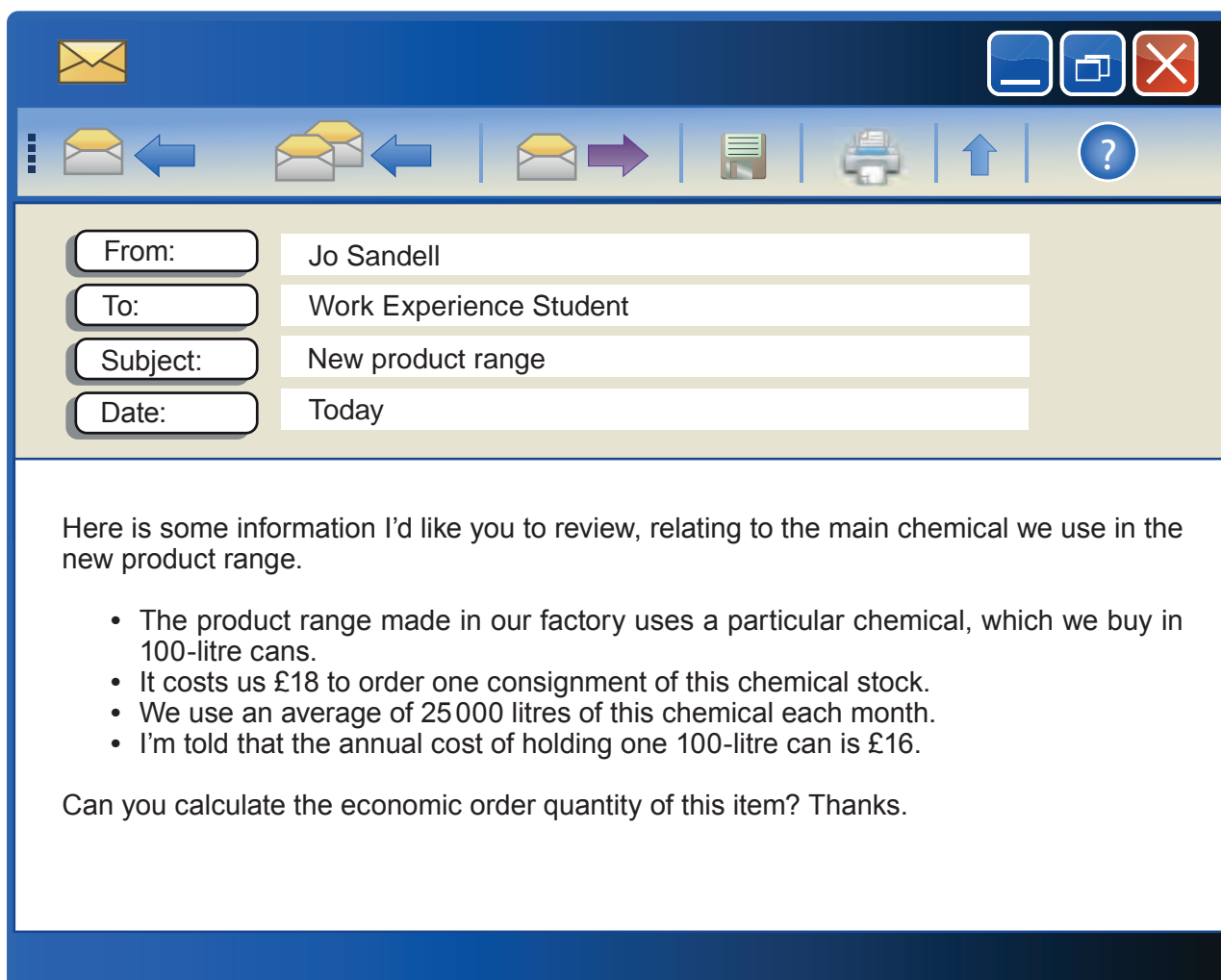
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3. Jo has sent you the email below about the new product range.



The screenshot shows an email client interface. At the top, there are icons for mail, minimize, maximize, and close. Below that is a toolbar with icons for back, forward, print, and help. The email header shows:

From:	Jo Sandell
To:	Work Experience Student
Subject:	New product range
Date:	Today

The main body of the email contains the following text:

Here is some information I'd like you to review, relating to the main chemical we use in the new product range.

- The product range made in our factory uses a particular chemical, which we buy in 100-litre cans.
- It costs us £18 to order one consignment of this chemical stock.
- We use an average of 25000 litres of this chemical each month.
- I'm told that the annual cost of holding one 100-litre can is £16.

Can you calculate the economic order quantity of this item? Thanks.

Calculate the economic order quantity (EOQ) using the formula given below. Show your workings. [4]

Formula used to calculate EOQ:

$$\sqrt{\frac{2od}{h}}$$

where o is the cost of ordering one consignment of stock
 d is the annual demand by the factory for the stock
 h is the annual cost of holding one unit of stock.

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4. The directors of *IA plc* are reviewing the company's stockholding policies.

Outline **one** benefit and **one** drawback to *IA plc* if the directors decide to increase the stock levels held at its factory. [4]

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5. *IA plc's* factory uses batch production methods to manufacture its products.

(a) What is meant by batch production methods? [2]

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(b) Give **two** reasons why batch production is a suitable production method for these new products. [4]

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6. Assess the advantages to *IA plc* from using batch production, rather than flow production, methods for these new products. [6]

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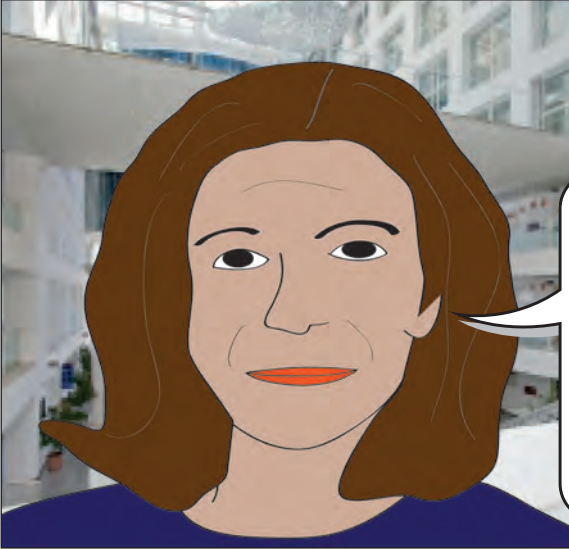
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SECTION C**Decision-making and the Finance function**

Budgeting and a regular and reliable source of supply are key factors contributing to our company's success. Budgeting helps us control our costs and therefore stay competitive. We rely on efficient suppliers to provide us with regular supplies of the ingredients we use to make our products.

1. *IA plc* recently launched a range of eco-friendly 'green' garden products. Since the launch, activity levels in the factory where the products are made have varied. A recent overhead budget for these products is shown in the memo, together with actual results. Jo has calculated some variances and has asked you to review them.

MEMO**From: Jo Sandell****To: Work Experience student****Subject: Analysis of figures****Date: Today**

Please find the figures I mentioned. I'm pleased with what they appear to show, though I'd appreciate your opinion.

Cost	Budget £	Actual £	Variance fav/(adv) £
Labour (variable)	21 120	20 240	880
Labour (fixed)	2 400	2 400	–
Materials (variable)	7 200	7 040	160
Overheads (variable)	1 920	1 760	160
Overheads (fixed)	4 200	4 200	–
	36 840	35 640	1 200
Kg manufactured	9 600	8 800	

Notes:

Period: the four-week period, March 2014

Budgeted average activity level: 2 400 kg a week

Using the table below, prepare a flexible budget for the March four-week period based on the manufacture of 8 800 kg of pesticide, showing appropriate variances. [8]

Cost	Actual £	Budget £	Variance £ fav/(adv)
Labour (variable)	20 240		
Labour (fixed)	2 400		
Materials (variable)	7 040		
Overheads (variable)	1 760		
Overheads (fixed)	4 200		
Total costs	35 640		

3. *IA plc* also uses marginal costing contribution analysis to make judgements about its products.

Explain how contribution analysis could be used to judge whether or not to stop manufacturing unprofitable products. [4]

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4. Jo has sent you the information in the memo about suppliers, and has asked you to review it.

MEMO

From: Jo Sandell

To: Work Experience student

Subject: Financial information

Date: Today

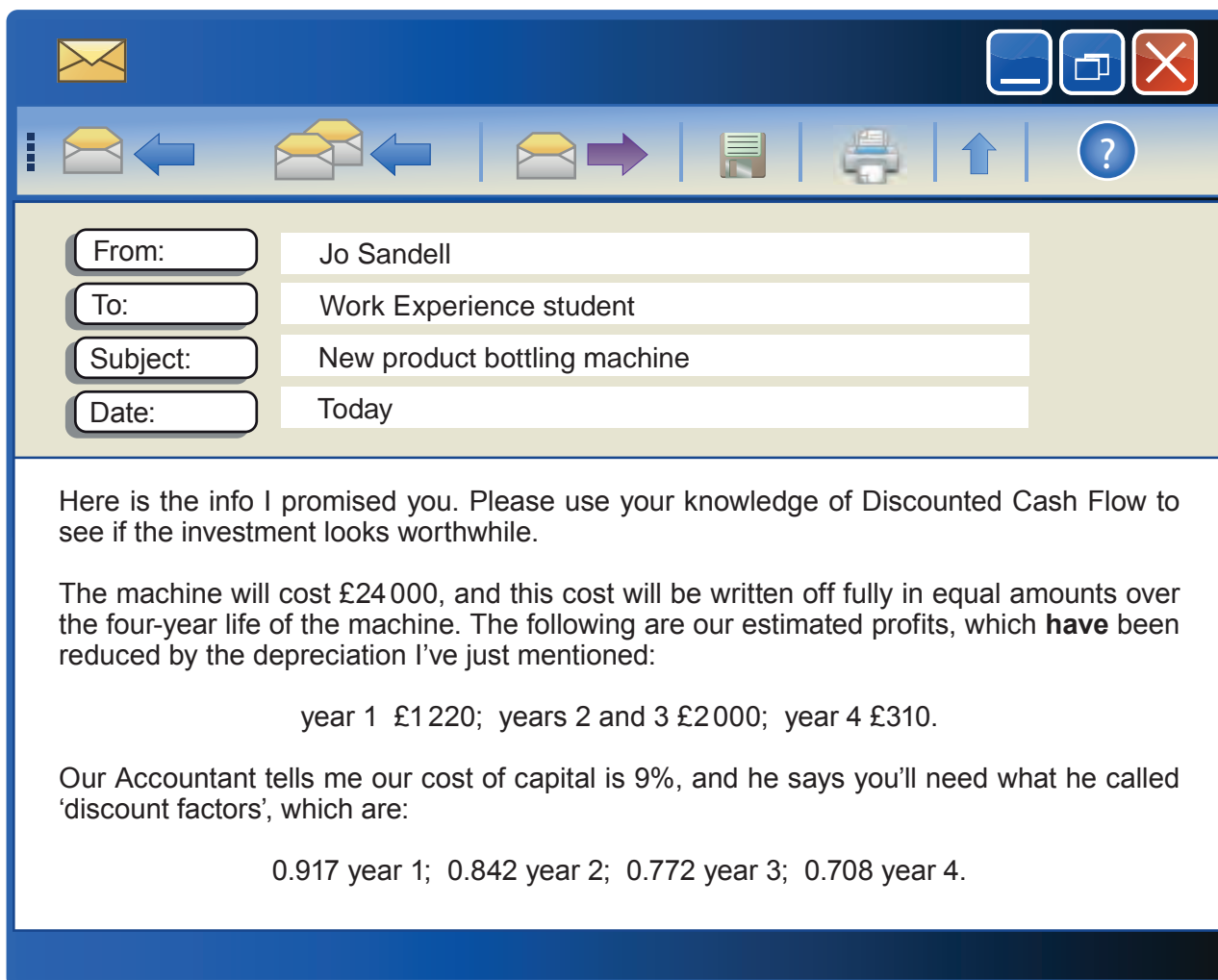
Please find below some financial information about two of our current suppliers, together with *Chemics plc*, a possible new one, based on their most recent published accounts.

Ratio	<i>Antimicro plc</i>	<i>Biogoods plc</i>	<i>Chemics plc</i>
Acid Test Ratio	0.55 : 1	0.95 : 1	1.2 : 1
Asset Turnover	7.5 times	7.3 times	7.7 times
Current Ratio	1.15 : 1	1.9 : 1	2.15 : 1
Gearing	1.5 : 1	0.6 : 1	0.7 : 1
Inventory (Stock) Turnover	18 days	1 week	9 days
Payables (Creditors) Collection Period	63 days	42 days	38 days
Profit in relation to Revenue (Net Profit margin)	19.5%	20.5%	20%
Receivables (Debtors) Collection Period	70 days	35 days	30 days
Return on Capital Employed	6.2%	6.1%	6.1%

I'm not sure what the difference is between the two ratios that mention "Turnover". I also don't know what "Gearing" means, but I'm told we calculate it by dividing Non-current (Long-term) Liabilities by Equity (Share Capital). Please contact me about this.

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2. Jo has given you information about the machine in the email below.



From: Jo Sandell
To: Work Experience student
Subject: New product bottling machine
Date: Today

Here is the info I promised you. Please use your knowledge of Discounted Cash Flow to see if the investment looks worthwhile.

The machine will cost £24 000, and this cost will be written off fully in equal amounts over the four-year life of the machine. The following are our estimated profits, which **have** been reduced by the depreciation I've just mentioned:

year 1 £1 220; years 2 and 3 £2 000; year 4 £310.

Our Accountant tells me our cost of capital is 9%, and he says you'll need what he called 'discount factors', which are:

0.917 year 1; 0.842 year 2; 0.772 year 3; 0.708 year 4.

Using the information given in the email, calculate the net present value for this investment and show your results in the table below. [8]

Year	Cash flow (£)	Discount factor	Present value (£)
Net present value			

4. The directors of *IA plc* are discussing whether or not to build a shop to sell the company's products.

Analyse how a Gantt chart is likely to help the directors if a shop is to be built. [3]

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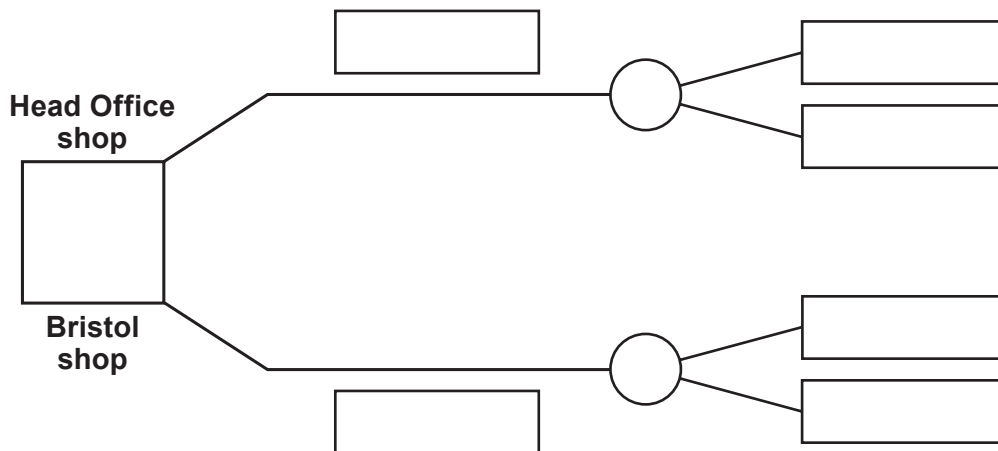
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5. The directors are discussing whether to build this shop on the factory's Bristol site or on the Head Office site. The document below contains information on these two locations.

Information on the two sites being considered for the shop

- The investment in either shop is expected to cost £225 000.
- The populations likely to be interested in such a shop are estimated at 300 000 people in the Bristol area and 125 000 in the Head Office area.
- There are more shop-based competitors in the Bristol area than in the Head Office area.
- There is:
 - a probability of 0.45 that *IA plc* will make a first year profit of £25 000 at the Head Office shop, and a probability of 0.55 that it will make a first year profit of £10 000;
 - a probability of 0.25 that the Bristol shop will make a first year profit of £50 000, and a probability of 0.75 that it will make a first year profit of £10 000.

Using the information from the document above, complete the decision tree below, showing costs and expected revenues for both shops. [4]



6. Using the information given in question 5, and your responses to question 5, calculate the Expected Values for each shop and, based on your **calculations**, state which location the directors should choose and why. [3]

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