



**Note:**

You may use this page for your workings.

**This exam paper is in TWO sections.**

**You have to show competence in BOTH sections. So, try to complete EVERY task in BOTH sections.**

**Section 1 contains 6 tasks and Section 2 contains 5 tasks.**

**You should spend about 90 minutes on each section.**

**Both sections are based on Stow Solvents Ltd.**

**You should show your workings in the spaces provided, and on pages 2, 7, 10 and 23. You should also include all essential calculations in your answers.**

## **Data**

You are employed as an accounting technician with Stow Solvents Ltd, a medium sized chemical processing company. The company manufactures a range of industrial solvents that it sells to manufacturers of paint and chemical products.

The company operates a process costing system.

You report to the Chief Accountant.

## Section 1

You should spend about 90 minutes on this section.

### Data

The stock record card shown below refers to entries for chemical RC976 for November 2007. This chemical has been steadily increasing in price over the past few weeks.

The card has been partially written up using the First In First Out (FIFO) method of stock issue and valuation, rather than the Weighted Average Cost (AVCO) method that should have been used.

Stock record card for chemical RC976								
	Receipts			Issues			Balance	
Date	Quantity Litres	Cost per Litre £	Total cost £	Quantity Litres	Cost per Litre £	Total cost £	Quantity Litres	Total cost £
Balance as at 1 November							8,000	3,200
5 November	4,000	0.52	2,080				12,000	5,280
12 November				5,000	0.40	2,000	7,000	3,280
18 November	4,000	0.55	2,200					
28 November				6,000				

### Task 1.1

- (a) Redraft the stock record card below for the entries up to and including those on 12 November, using the Weighted Average Cost (AVCO) method.
- (b) Complete the entries for the rest of the month.

Stock record card for chemical RC976								
	Receipts			Issues			Balance	
Date	Quantity Litres	Cost per Litre £	Total cost £	Quantity Litres	Cost per Litre £	Total cost £	Quantity Litres	Total cost £
Balance as at 1 November								
5 November								
12 November								
18 November								
28 November								

- (c) FIFO, AVCO and standard costing are methods of stock issue and valuation. Name ONE other method based on historical cost.
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- (d) Would the method you identified in (c) lead to a lower or higher valuation of the stock balance at the end of November (as compared to AVCO)?
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## Data

Chemical RC976 issued on 12 November was used to make solvent S123, while that issued on 28 November was used to make solvent S456.

The following cost accounting codes are used:

Code	Description
1953	Stocks of chemical RC976
3265	Work in progress – solvent S123
3341	Work in progress – solvent S456
0080	Creditors Control

## Task 1.2

Complete the Journal below to record separately the FOUR cost accounting entries for the two receipts and two issues during November.

Date	Code	Dr £	Cr £
5 November			
5 November			
12 November			
12 November			
18 November			
18 November			
28 November			
28 November			

**Note:**

You may use this page for your workings.

## Data

The following data relates to direct labour costs incurred in producing solvent S789 during November:

Normal time hours worked	260 hours
Overtime at time and a half worked	40 hours
Overtime at double time worked	30 hours
Total hours worked	330 hours
Normal time hourly rate	£10 per hour

Overtime premiums paid are included in the direct labour cost.

### Task 1.3

(a) Calculate the total cost of direct labour for solvent S789 for November.

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### Task 1.3, continued

#### Additional data

The following data relates to work in progress stocks of solvent S789 during November:

Opening work in progress	Nil
Finished output to next process	7,000 litres
Closing work in progress	1,200 litres
Degree of completion – direct materials	100%
Degree of completion – direct labour	50%

- (b) Using the additional data above and your answer to Task 1.3 (a), calculate the direct labour cost per litre of solvent S789 of the equivalent finished production.

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**Data**

Stow Solvents Ltd. has the following departments involved in one of the stages of solvent production:

- Chemical mixing
- Solvent bottling
- Maintenance

The budgeted fixed overheads relating to the departments for the next quarter are:

	£	£
Insurance of machinery		50,400
Rent and rates		136,800
Indirect labour costs:		
Chemical mixing	53,625	
Solvent bottling	131,175	
Maintenance	<u>18,375</u>	
Total		<u>203,175</u>

Total fixed overheads 390,375

The following information is also available:

Department	Net book value of fixed assets £000	Square metres occupied	Number of employees
Chemical mixing	432	660	14
Solvent bottling	216	480	48
Maintenance	72	60	6
Total	720	1,200	68

Fixed overheads are allocated or apportioned to the departments on the most appropriate basis.

The total maintenance overheads are then reapportioned to the two production departments. The maintenance department spends 80% of its time maintaining equipment in the chemical mixing department.

**Note:**

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### Task 1.4

Use the following table to allocate or apportion the fixed overheads between the production departments, using the most appropriate basis.

Fixed overhead	Basis of allocation or apportionment	Total cost £	Chemical mixing £	Solvent bottling £	Maintenance £
Insurance of machinery					
Rent & rates					
Indirect labour costs					
Sub-total					
Reapportionment of maintenance					
Total					

### Additional data

The chemical mixing department is highly automated, and operates with expensive machinery. The solvent bottling department, on the other hand, is highly labour intensive.

The following budgeted data relates to the next quarter:

	Chemical mixing	Solvent bottling
Number of machine hours	5,237	3,624
Number of labour hours	4,806	17,256

### Task 1.5

Refer to your calculations in Task 1.4 and to the data above.

**For each of the following departments, calculate the budgeted fixed overhead absorption rates (recovery rates) for the next quarter using the most appropriate basis of absorption (Give your answers to the nearest whole pound):**

(a) The chemical mixing department

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(b) The solvent bottling department

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### Additional data

The following planning data relates to the production of solvent S258 in the first month of the next financial year in the chemical mixing department.

Budgeted machine hours	460
Actual machine hours now expected to be worked	480
Actual overheads now expected to be incurred	£16,200

### Task 1.6

Refer to your calculations in Task 1.5 and to the data above.

**Calculate the overhead under- or over-absorption now expected in the first month of the next financial year. (Clearly state whether under- or over-absorption is expected).**

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## Section 2

You should spend about 90 minutes on this section.

### Task 2.1

The company has produced three forecasts of demand levels for the next quarter for solvent S468. The original budget was to produce 10,000 litres per quarter, but demand levels of 14,000 litres and 18,000 litres are also now feasible.

- (a) Complete the table below to estimate the production cost per litre of S468 at the three different demand levels.

Litres made	10,000	14,000	18,000
<b>Costs:</b>	£	£	£
<b>Variable costs:</b>			
Direct materials	1,200		
Direct labour	1,000		
Overheads	1,600		
<b>Fixed costs:</b>			
Indirect labour	700		
Overheads	1,600		
<b>Total cost</b>	6,100		
<b>Cost per litre</b>	0.61		

- (b) Explain why the cost per litre of S468 changes with the increase in the number of litres made.

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### **Additional data**

The production manager now thinks the £2,300 of fixed costs attributable to solvent S468 may be a stepped fixed cost instead. He believes that this cost is stepped at each activity level of 10,000 litres per quarter.

**(c) (i) Explain what is meant by a stepped fixed cost.**

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**(ii) Explain what effect the above additional data would have on the cost per litre at activity levels of 14,000 and 18,000 litres. (You are NOT required to calculate these costs).**

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## Additional data

Solvent S468 will be sold for £0.88/litre at the budgeted 10,000 litres activity level.

### Task 2.2

(a) Calculate the budgeted break-even sales, in litres, for this solvent.

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(b) Complete the table below to:

- (i) Calculate the margin of safety (in litres) at each of the three feasible activity levels, by comparing the level of sales forecast with the break-even level;
- (ii) Calculate the margin of safety as a percentage (to the nearest whole number) for each of the three activity levels.

Forecast sales litres	10,000	14,000	18,000
Break-even sales litres			
Margin of safety litres			
Margin of safety %			

## Data

The company produces solvent S782 in a single production process. During October 2007 the input to the process was 18,000 litres of raw materials at a cost of £9,000. There were no opening or closing stocks and all output was fully completed.

The table below shows the actual process results for the month:

Input litres	Output litres	Normal loss litres	Abnormal loss litres	Abnormal gains litres	Scrap value of all losses £ per litre
18,000	15,000	3,000	0	0	£0.20

### Task 2.3

(a) Calculate the cost per litre of output:

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(b) Complete the entries in the solvent S782 process account below:

Description	Litres	Unit cost £	Total cost £		Description	Litres	Unit cost £	Total cost £
Input to process					Normal loss			
					Output from process			

## Additional data

The company is faced with a problem involving a limiting factor and seeks your advice. This problem arises because another solvent, S893, has become available. It uses the same mixing machine as S782. However, the number of available hours for this particular mixing machine is limited to only 6,000 during the next quarter.

The following data is available:

Solvent	S782	S893
Selling price per thousand litres (£)	1,200	1,600
Marginal cost per thousand litres (£)	800	1,000
Machine hours required per thousand litres	2	5
Demand (forecast sales next quarter in thousand litres)	2,000	3,000
Total fixed costs for both solvents (£)	640,000	

## Task 2.4

Using the data given above complete the table below. This is to recommend how many thousand litres of solvents S782 and S893 should be made in order to maximise profits based on the machine hours available.

Solvent	S782	S893	Total
Contribution per thousand litres (£)			
Machine hours per thousand litres			
Contribution per machine hour (£)			
Solvent ranking			
Machine hours available			
Machine hours allocated to: Solvent .....			
Solvent .....			
Thousand litres made			
Total contribution earned (£)			
Less: Fixed costs (£)			
Profit/loss made (£)			





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**NVQ/SVQ qualification codes**

Intermediate (2003 standards) – 100/2941/2/G793 23  
Unit number (ECR) – A/101/8104

**Diploma Pathway qualification codes**

Advanced Certificate (2003 standards) – 100/5924/6  
Unit number (ECR) – Y/103/6447



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**For Assessor's use only**

**Section 1**

**Section 2**

Task 1.1

Task 2.1

Task 1.2

Task 2.2

Task 1.3

Task 2.3

Task 1.4

Task 2.4

Task 1.5

Task 2.5

Task 1.6

Total

Total

**For Assessor's use only**

**Section 1**

**Section 2**

Task 1.1

Task 2.1

Task 1.2

Task 2.2

Task 1.3

Task 2.3

Task 1.4

Task 2.4

Task 1.5

Task 2.5

Task 1.6

Total

Total