



Mock Exam One

AAT L2 Principles of Costing

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Mock Exam One

AAT L2 Principles of Costing

Task 5 and Task 7 in this mock exam can be answered using Microsoft Excel.
Please visit our website www.acornlive.com and choose STUDY FOR AAT.

Assessment information:

You have **1 hours and 30 minutes** to complete this practice assessment.

- This assessment contains **7 tasks** and you should attempt to complete **every** task.
- Each task is independent. You will not need to refer to your answers to previous tasks.
- The total number of marks for this assessment is **80**.
- Read every task carefully to make sure you understand what is required.
- Where the date is relevant, it is given in the task data.
- Both minus signs and brackets can be used to indicate negative numbers **unless** task instructions state otherwise.
- You must use a full stop to indicate a decimal point. For example, write 100.57 **not** 100,57 or 10057.
- You may use a comma to indicate a number in the thousands, but you don't have to. For example, 10000 and 10,000 are both acceptable.

Task 1 (8 marks)

This task is about classification and relationship of costs.

This task has parts (a) to (d).

(a) Identify whether the following statements are TRUE or FALSE

(4 marks)

	TRUE	FALSE
If a manufacturer classifies its costs by element, quality control salaries would be classified as labour cost.	<input type="checkbox"/>	<input type="checkbox"/>
If a manufacturer classifies its costs by function, selling and distribution expenses would be classified as a production cost.	<input type="checkbox"/>	<input type="checkbox"/>
Direct costs are specific costs required to make a product or deliver a service.	<input type="checkbox"/>	<input type="checkbox"/>
A variable cost is any cost where if no production of goods are made, then the expense would still have to be incurred.	<input type="checkbox"/>	<input type="checkbox"/>

(b) Identify TWO users of management accounts by matching the left hand box to the appropriate right hand boxes.

(2 marks)

Management Accounts	Bank
	Manager
	Shareholder
	Director
	Customers

(c) Complete the following sentence using the drop down list.

(1 mark)

The classification of cost which is useful for forecasting costs, in particular when activity levels rise or fall would be the classification of cost by

Picklist: Element, Behaviour, Function, Nature.

(d) Complete the following sentence using the drop down list.

(1 mark)

A total cost that contains a mixture of fixed and variable cost is called a

Picklist: Stepped fixed cost, Semi-variable cost, Fixed cost, Variable cost.

End of Task

Task 2 (10 marks)

This task is about costing techniques.

This task has parts (a) to (c).

AS is a manufacturing company and is considering how to cost the various products that it makes. It needs to decide on a suitable overhead absorption rate basis that it will use.

The methods it is considering are:

- a machine hour basis
- a labour hour basis

(a) Complete the table below to show two overhead absorption rates that the manufacturer could use. Show your calculations to two decimal places.

(2 marks)

	Machine hour	Labour hour
Overheads (£)	280,000	280,000
Activity	28,000	11,200
Absorption rate (£)		

The following data relates to making one unit of a product that AS manufactures.

- Material: 3.4 kilograms (kg) at £1.20 per kg.
- Labour: 15 minutes at £10.00 per hour.
- Machine time: 30 minutes per unit.

(b) Complete the table below and calculate the total unit cost for the product, using each of the overhead absorption rates you calculated in (a) above. Show your calculations to two decimal places.

(6 marks)

Cost	Machine hour (£)	Labour hour (£)
Materials	4.08	4.08
Labour	2.50	2.50
Overheads		
Total unit cost		

(c) An overhead recovery method best suited to an environment where production work is carried out manually, would be

(2 marks)

Picklist: Labour hours, Machine hours, Units.

End of Task

Task 3 (8 marks)

This task is about recording costs.

This task has parts (a) to (d).

(a)(i) HOS is a hospital that treats patients. Its coding system uses the classification of cost by element first and then by nature. Code the following transactions for operating costs using the table below. Each transaction should have a four character code.

(2 marks)

Activity	Code	Nature of cost	Sub code	Transaction	Code
Materials	M	Direct	800	Bandages to treat patients	
		Indirect	900	Hospital management salaries	
Labour	L	Direct	800		
		Indirect	900		
Overhead	O	Direct	800		
		Indirect	900		

(a)(ii) Identify which ONE of the following is least likely to be used as a cost per unit for a hospital.

(1 mark)

Cost per patient

Cost per treatment

Cost per journey

Cost per hour

(b) Identify whether the following statements are true or false using the drop down list below.


(1 mark)

A numeric coding system would include both letters and numbers.

Picklist: TRUE, FALSE.

(c) Complete the following sentence using the drop down list.

(2 marks)

An overtime premium is normally coded as a direct labour cost of production, if overtime work undertaken was due to 

Picklist: the general pressure of work, a customer's specific request.

(d) Identify TWO examples of profit centres by matching the left hand box to the appropriate right hand boxes.

(2 marks)

<input type="text" value="Profit Centre"/>	<input type="text" value="Shop"/>
	<input type="text" value="IT Department"/>
	<input type="text" value="Division"/>
	<input type="text" value="Factory"/>
	<input type="text" value="A machine"/>

End of Task

Task 4 (10 marks)

This task is about overhead absorption rates and looking at the behaviour of costs.

This task has parts (a) to (b).

(a) Identify the type of cost for each example in the table shown below.

(3 marks)

Cost	Cost behaviour	Fixed	Variable	Semi-variable
Energy	£34,000 per year regardless of units made + £3.45 per unit made.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Direct material	5 litres per unit made at £2.99 a litre.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depreciation	£18,000 a year.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b) Complete the table shown below and calculate costs (£) for production levels of 8000, 12000 and 15000 units.

(7 marks)

Units	Total cost (£)	Variable cost (£)	Fixed cost (£)
8000			
12000			15,000
15000		33,750	

End of Task

Task 5 (12 marks)

This task is about calculating costs of products and using tools and techniques to improve the presentation of information.

A manufacturer has the following cost information for the last month:

	£
Materials costs:	
Materials forming part of the product	45000
Materials not forming part of the product	5000
Labour costs:	
Labour working on production	67000
Labour supporting work on production	8000
Factory indirect expenses	24000

Relevant inventory changes were:

	£
Work in progress	
Opening	156000
Closing	175000
Finished goods:	
Opening	56000
Closing	78000

(i) Complete the table below and calculate any missing figures in column B to show a manufacturer's cost structure for the month. Show your answers to the nearest whole pound (£). Do NOT use spreadsheet formulas when entering your answers. (5 marks)

(ii) Format cell B12 to include a thousand separator. (1 mark)

(iii) Place an outline border in cells A1:B1. (2 marks)

(iv) Fill cells A1:B1 with a green colour. (2 marks)

(v) Change the text colour in cells A1:B1 to the colour white. (2 marks)

	A	B
1	Manufacturing account	£
2	DIRECT MATERIAL USED	45,000
3	Direct labour	67,000
4	Prime Cost	
5	Manufacturing overheads	
6	MANUFACTURING COST	
7	Opening inventory of work in progress	156,000
8	Closing inventory of work in progress	175,000
9	COST OF GOODS MANUFACTURED	
10	Opening inventory of finished goods	56,000
11	Closing inventory of finished goods	78,000
12	COST OF GOOD SOLD	
13		

End of Task

Task 6 (12 marks)

This task is about labour and inventory calculations.

This task has parts (a) to (b).

Coffee Shop RUS (CSRUS) makes different grades of coffee beans for a national high street chain of coffee shops. For management accounting purposes CSRUS uses the FIFO (first in, first out) method to value closing inventory. The stores ledger records for Coffee Bean Z grade (Arabica bean) shows the following receipts into stores during the month of October:

Date of purchase	Number of tonnes	Price per tonne (£)	Total cost (£)
1 October	80	900.00	72,000
7 October	200	920.55	184,110
14 October	150	950.00	142,500

CSRUS is considering using the AVCO (average cost method) as an alternative to the FIFO (first in, first out) method.

(a) Calculate the cost of issuing 150 tonnes of Bean Z grade coffee beans on 20 October and then calculate the closing inventory balance after the issue using the FIFO (first in, first out) and AVCO (average cost) method. Round all answers to the nearest whole pound (£).

(6 marks)

	Value of issue (£)	Balance after issue (£)
FIFO		
AVCO		

The following details relate to a production team in the factory of CSRUS.

- All production workers in the CSRUS factory are paid a basic rate of £9 per hour.
- An overtime payment of time and a half is paid to workers, for hours worked in excess of normal time (Monday to Friday).
- An overtime payment of double time is paid to workers, for hours worked on a Saturday or Sunday (Weekend).
- A total of 405 hours were worked in the week by a team of 10 production workers, this time included 20 hours overtime worked on the Weekend and 35 hours overtime worked during Monday to Friday.

A bonus is paid to each production worker of £2.50 for every hour that is saved by the production team. 850 units of coffee products were completed in the week by the team of 10 production workers. The team is expected to take 30 minutes for every unit completed.

(b)(i) Calculate the basic pay, overtime premium and total pay before bonus for the team of production workers in the table shown below. Note: Do not enter figures in grey cells. Round all figures to the nearest whole pound (£).

(4 marks)

Labour cost	Hours	£
Basic pay	405	
Overtime premium (Mon to Fri)	35	
Overtime premium (Weekend)	20	
Total pay before bonus		

(b)(ii) Complete the following sentence.

(1 mark)

Each production worker is paid a bonus of £

(b)(iii) Complete the following sentence.

(1 mark)

The production team is paid a total bonus of £

End of Task

Task 7 (20 marks)

This task is about budget calculations and exception reporting using formulas.

This task has parts (a) to (b).

You have been asked to provide information for a manufacturer's sales and cost performance for the month. Significant variances should be reported to the relevant manager for review and appropriate action.

Company policy:

- Sales income variances in excess of 10% of budget, and that are greater than £5,000, are significant. They should be reported to the sales manager.
- Cost variances in excess of 10% of budget, and that are greater than £500 are significant. They should be reported to the production manager.
- Variances in excess of 20% of budget, and that are greater than £10,000, are significant. They should be reported to the managing director.

(a) Using the information provided in cells A1:G6, complete the following table.
(18 marks)

- Formulas must be used for figures entered in cells B6, C6, D2:D5 and E2:E5 in the table below. You MUST manually enter cell references.
- The variance percentage (%) column has been preformatted to 2 decimal places.
- A variance (£) must be shown as a negative figure if adverse and a positive figure if favourable.
- Complete cells F2:F5 by selecting from the drop-down list in the table below, to identify if each variance is significant, or not significant.
- Complete cells G2:G5 by selecting from the drop-down list in the table below, to identify who (if anyone) each variance should be reported to.

	A	B	C	D	E	F	G
1		Budget £	Actual £	Variance £	Variance as a percentage of budget %	Significant/ Not significant	Who the variance should be reported to
2	Sales income	40,000	55,000			↓	↓
3	Direct materials	1,500	2,200			↓	↓
4	Direct labour	4,500	4,500			↓	↓
5	Overheads	2,000	1,500			↓	↓
6	Profit or loss						

Picklist (cells F2:F5): Significant, Not significant.

Picklist (cells G2:G5): Sales manager, Production manager, Managing director, Not required.

(b) Identify TWO variances below that will increase actual profits, when compared to budget profits. Match the left hand box to the appropriate right hand boxes.

(2 marks)

Increase profits

Actual overhead
greater than budget

Actual sales income
greater than budget

Administration expenses
less than budget

Actual sales income
lower than budget

End of Task



Revision Notes

Costing accounting

Cost accounting is the recording and analysis for the cost of materials, labour and overhead (expenses) necessary to produce a good or perform a service. There is no legal requirement or format for how internal costing information is presented to management. The main objective of costing information is to support decision making for internal directors and management.

Financial accounting

Financial accounting reports information that is historical (in the past) and based on past transactions and events of an organisation e.g. sales and profits earned in the past, assets, liabilities and capital reported. Financial accounting focuses on reporting information to external users outside the organisation, such as Her Majesty's Revenue and Customs (HMRC), banks (lenders) and shareholders (owners or investors). Financial accounting is governed by laws and regulations.

	Cost accounting	Financial accounting
Regulations	None.	Laws and accounting regulations can govern the presentation of financial statements.
Users	Internal e.g. directors, management and staff.	External e.g. suppliers, lenders and investors.
Information	Cost analysis for the organisation, or its products.	Past performance (profits) and position (assets and liabilities).
Time period	Past, present and future.	Historical, in the past.

Cost classification

By element

- Materials e.g. items with physical substance.
- Labour e.g. wages paid to workers.
- Overheads e.g. all other expenses.

This classification represents a simple way to understand the cost of making a good or performing a service.

By function

Cost classification by function would group costs according to the purpose of each type of expenditure. Costs are analysed as either production (factory) or non-production (non-factory) costs. This classification is useful to a financial accountant that wants to code expenses for the purpose of reporting profits.

By nature

Cost classification by nature would group costs according to those which specifically form part of making a good or performing a service (direct costs or product costs) and those costs which are considered too remote and untraceable to goods made or services performed (indirect costs or period costs). This classification is useful for product costing.

	Fast food	Hospital	Car maker	Coffee shop
Production costs				
Direct materials	Burger, bun, onions and sauces.	Bandages, medicines and treatments.	Steel, car components and rubber tyres.	Coffee cups, coffee beans, milk and sugar.
Direct labour	Cooks, servers and cashiers.	Doctors, nurses and surgeons.	Car assembly workers.	Barista's.
Indirect materials	Cleaning fluids, toilet roll, bleach and napkins.	Plastic bin liners, anti-bacterial gel and disposable wipes.	Machine lubricants, oils and equipment cleaning fluids.	Cleaning fluids, toilet roll, bleach and napkins.
Indirect labour	Restaurant managers, supervisors and cleaners.	Hospital managers, supervisors, porters and patient administrators.	Factory managers, supervisors and quality control inspectors.	Restaurant managers, supervisors and cleaners.
Indirect expenses	Restaurant rent, rates, insurance, light and heat.	X-Ray machines, treatment equipment and beds. Also building costs.	Factory rent, light and heat, insurance and cost of plant and machinery.	Restaurant rent, rates, insurance, light and heat.

By behaviour

Cost classification by behaviour would group costs according to how they change (or behave) as a result of the volume of goods or services increasing or decreasing. This classification is useful for budgeting (forecasting) costs for different amounts of a good made or service performed.

Variable cost

A variable cost is a total cost that 'varies' when the volume of a product changes. Raw materials and production labour to make a product are examples of a variable cost.

- When no volume of a product is made the total cost will be zero.
- When more volume of a product is made the total cost will rise.
- When less volume of a product is made the total cost will fall.

Fixed cost

A fixed cost is a total cost that remains unchanged when the volume of a product changes. Periodic expenses such as rent, light and heat, supervisor salaries are examples of a fixed cost.

- When no volume of a product is made the total cost will remain the same.
- When more volume of a product is made the total cost will remain the same.
- When less volume of a product is made the total cost will remain the same.

Summary

	Variable cost	Fixed cost
Total cost (£)	Increases when more units are made and decreases when less units are made.	Remains the same when more or less units are made.
Unit cost (£)	Remains the same when more or less units are made.	Decreases when more units are made and increases when less units are made.

Stepped fixed cost

Fixed cost tends to be stepped in nature because when the volume of a product made exceeds a certain level of production, then more resources such as supervisors, machines and buildings are required which increase fixed costs.

Semi-variable cost

A semi-variable (or mixed) cost is a total cost that contains a mixture of both fixed and variable components. For example, a factory may pay a fixed (standing) charge for its energy required each month up to a certain limit of energy consumed and then pay additional charges for more energy when this limit has been exceeded.

Responsibility centres

Cost centres

A cost centre is normally a department, function or any part of an organisation where costs can be charged for accounting purposes. Cost centres do not generate income therefore a manager has the responsibility only to minimise or control costs.

Revenue centres

A revenue (or sales) centre is a distinct part of an organisation where the manager has the responsibility only to maximise sales income.

Profit centres

Profit centres focus on maximising sales income and minimising or controlling costs, in order to maximise profits. The manager has control over sales income generated and expenditure incurred.

Investment centres

An investment centre is essentially the same as a profit centre but with one more additional area of responsibility for a manager. The manager is expected to maximise profits and accountable to make long-term investment decisions such as investing in new premises, new machinery and new vehicles.

Summary

Management responsibility	Cost centre	Revenue centre	Profit centre	Investment centre
Costs	✓	n/a	✓	✓
Sales	n/a	✓	✓	✓
Assets and liabilities	n/a	n/a	n/a	✓

Cost coding

Costs incurred by an organisation can be analysed and allocated to different products, services, departments, factories, shops, branches or divisions. Cost coding in an accounting system will enable efficient and consistent data processing. Costs can be segmented and the trends identified and better understood by management.

Examples

- Numeric (codes use numbers only).
- Alphabetic (codes use letters only).
- Alpha-numeric (codes use a mixture of numbers and letters).

First-in-first-out (FIFO)

FIFO is a 'selection' method to determine what raw materials were used during a period of time. FIFO determines an issue cost for raw materials by selecting the 'earliest' or 'oldest' inventory that has been purchased.

The relevance of FIFO

If a raw material has a very short shelf life such as milk, it can perish very quickly and will be wasted. Selecting the oldest (earliest) inventory first ensures that any remaining closing inventory has a longer shelf life.

Last-in-first-out (LIFO)

LIFO is a 'selection' method to determine what raw materials were used during a period of time. LIFO determines an issue cost for raw materials by selecting the 'latest' or 'newest' inventory that has been purchased.

The relevance of LIFO

LIFO selects the newest (latest) purchases for materials used which represents the current cost and most up-to-date raw material prices recognised for a production cost.

Weighted average cost (AVCO)

The weighted average cost (AVCO) method calculates an average price for all purchases that exist on the date of each issue, the average price is used to work out the cost of raw materials issued to production.

The relevance of AVCO

AVCO works in situations where a raw material is a liquid or gas, it would be impractical to select what purchases were actually used for production, since what was used would be uncertain. AVCO is also a good accounting method when prices of raw materials are seasonal or volatile. An average price calculated for all raw materials issued for production will smooth out production costs for each period.

Summary

Accounting method	How the issue cost for raw material is determined	Practical situations to use this accounting method	Implications when raw material prices are rising
FIFO	Selects the 'earliest' or 'oldest' inventory purchased.	Raw materials are highly perishable and must be used quickly.	Selects the earliest and cheapest purchases. FIFO gives the lowest issue cost and the highest value of closing inventory.
LIFO	Selects the 'latest' or 'newest' inventory purchased.	Most up-to-date current cost recognised for raw materials issued.	Selects the latest and most expensive purchases. LIFO gives the highest issue cost and the lowest value of closing inventory.
AVCO	Average price is calculated for all inventory held on the date of each issue.	Gas (or liquids) mixed together, or volatile raw material prices.	Average price is calculated for all inventory held on the date of each issue. AVCO gives neither the highest or lowest issue cost, or value of closing inventory.

Stores (inventory) records

A stores ledger is a manual (paper) or computer record kept for raw materials stored by a warehouse (or stores). It records details of raw materials purchased (received) and issued (sent) to production, as well as a cumulative balance for available inventory.

The following documents may be kept to update inventory records.

- A goods received note (GRN) would record goods received from suppliers by a warehouse (store).
- A materials requisition form records internal requests from production for a warehouse to issue (send) raw materials for the production of finished goods.

Example of a stores (inventory) ledger

Date	Receipt			Issue			Balance	
	Quantity (kg)	Cost per kg (£)	Total cost (£)	Quantity (kg)	Cost per kg (£)	Total cost (£)	Quantity (kg)	Total cost (£)
Balance at 1 April							200	20,000
11 April	400	105.00	42,000				600	62,000
22 April				250	105.00	26,250	350	35,750

Inventory (stock) control

- **Continuous review systems** order the same (fixed) quantity of inventory each time actual levels fall below a reorder level. Continuous systems order a fixed quantity at variable intervals of time.
- **Periodic review systems** check inventory levels at fixed intervals of time such as at the end of each week or at the end of each month.

Buffer (or safety) stock

The minimum amount of inventory (a 'buffer') that is stored as a precaution (or 'just in case') a supplier delivery takes longer than normal. If actual inventory amounts fall below the buffer level, it would signal a crisis or emergency because raw material inventory would be running dangerously low.

Re-order quantity

A re-order quantity is a fixed amount of inventory that is ordered from a supplier, each time an order is placed. Calculations are beyond the scope of your syllabus.

Time rate systems

Labour (employees) can be paid a salary (a fixed monthly payment) or wages (based on hours worked).

Overtime payment and overtime premium

- An **overtime payment** is the amount paid per hour for overtime worked by an employee (the basic rate plus 'premium' rate per hour).
- An **overtime premium** is the 'excess amount' paid above the 'basic rate' for overtime worked by an employee (the overtime rate less basic rate per hour).

A production employee is a worker who makes and assembles a good, or performs a service. The basic cost of all hours worked by production employees is treated as direct labour expenses.

The cost of overtime premium can be treated as direct labour cost or indirect labour cost, depending on reasons why overtime was worked.

The general rule is that if overtime is undertaken due to the general pressures of work, then overtime premium is treated as indirect labour expenses. This would include staff shortages, or a sudden increase in customer demand. However, if a customer requests an urgent order during a busy period and it cannot be fulfilled without working overtime, the cost of overtime premium can be treated as direct labour expenses.

Piecework rate systems

Production workers are paid a fixed rate for each unit they make, irrespective of the number of hours they work e.g. a packing worker paid a fixed rate for each box they pack. Piecework rate systems reward production workers who are more productive because the more they make, the more they get paid.

- Single rate piecework systems pay a production worker a single (fixed) rate for each unit they make. The same rate is paid for each unit made.
- Split (or differential) rate systems pay a production worker higher rates for units achieved above thresholds or targets set by management.

Minimum payments

Piecework rate systems do not guarantee security of income. A minimum wage can be paid to a worker, if their income falls below the guaranteed minimum wage.

Advantages of piecework

- Encourage a greater speed of work.
- Certainty for labour costing, the organisation pays a variable cost for each unit.

Disadvantages of piecework

- Lack of security for income.
- Penalise workers for low productivity.
- Can deliver poor quality of work e.g. rushing to speed up production.

Bonuses

A bonus is a sum of money added to a workers wages as a reward for good performance. Bonuses can be paid to production workers who achieve more than a specified target for units made or services performed, a bonus is not guaranteed unless a target is exceeded and this incentivises and rewards good performance. There is no hard or fast rules for how a bonus scheme works and the exam task will always explain the details if calculations are required.

Examples

- Bonus paid for each unit made in excess of a target.
- Bonus paid for the percentage of units made in excess of a target.

Indirect costs (overheads)

Indirect costs cannot specifically be identified to and do not form part of making a product or performing a service. Also called period costs because these costs are paid normally each week, month or quarter e.g. rent, light and heat, supervisors salaries.

Overhead absorption rates

Three accounting methods exist to calculate an overhead absorption rate. Overhead absorption rates are used to determine an amount of indirect overhead that can be charged to each product made or service performed, this is useful for product costing.

Budgeted indirect overheads divide by either:

- Budgeted units.
- Budgeted labour hours.
- Budgeted machine hours.

A cost per unit is normally broken down into the direct materials, direct labour and indirect overhead required to make one unit of a product or service.

Job costing

Job costing can be used when the production environment consists of making products that are unique and specific to each customer order. A high degree of variation exists for each job which is custom made or 'tailored' to the specific needs of each customer e.g. each building ('job') is purpose built specifically for each customer, or each printing job is specific to the needs of each customer order. In a job costing environment, the unit cost is the cost of each job.

Batch costing

Batch costing can be used when the production environment consists of making a variety of various products, in short production cycles. Identical products are made for each batch and production repeated, depending on the popularity and demand for the products an organisation makes.

Manufacturing accounts

A manufacturing account is a statement prepared for all factory (production) costs within a given period of time. A manufacturing account gives information on all factory (production) costs incurred in the preparation of finished goods to be sold. The cost of finished goods sold can be matched to sales income earned in the same period and any profit or loss can be calculated.

Exam tasks may require any figure in a manufacturing account to be calculated and the layout shown below needs to be memorised for your exam. As an exam tip all manufacturing costs are added together with the exception of three figures, 'closing' inventory of raw material, 'closing' inventory of work in progress and 'closing' inventory of finished goods. The three 'closing' figures are deductions (not additions).

Manufacturing account for the year ended 31 March 20X8

Manufacturing account	£
Opening inventory of raw material	2,000
Purchases of raw material	66,000
Closing inventory of raw material	-4,000
DIRECT MATERIAL USED	64,000
Direct labour	12,000
DIRECT COST	76,000
Manufacturing overheads	24,000
MANUFACTURING COST	100,000
Opening inventory of work in progress	7,000
Closing inventory of work in progress	-3,000
COST OF GOODS MANUFACTURED	104,000
Opening inventory of finished goods	16,000
Closing inventory of finished goods	-18,000
COST OF GOOD SOLD	102,000

Budgets

A budget is an estimate of income and costs for a future period of time.

Fixed budgeting

A fixed budget provides details of income and costs based on a single volume of units sold. The original budget is not subsequently changed even if actual units sold turn out to be different. A fixed budget is an inflexible approach and only useful if actual results are not expected to vary significantly from the original budget.

Flexible budgeting

Flexible budgeting is the opposite to fixed budgeting, this approach constructs several versions of a budget based on different volumes of units sold. This approach is useful if actual sales results are likely to vary significantly from the budget, it helps management plan more effectively in conditions of high uncertainty.

Variance analysis

Variance analysis is a process that compares a budget to actual income and costs, any differences are highlighted as 'variances' and this information is used by management to improve operational performance.

- Variances are differences between actual and budgeted revenue and costs.
- Variances can be calculated as an actual amount (£) or as a percentage (%) of budget ($\text{Variance} \div \text{Budget} \times 100\%$).
- Variances can be either zero, adverse or favourable.

Interpreting the effect of variances

- **Adverse** variances mean that performance was **worse than expected** when actual results are compared to a budget.
- **Favourable** variances mean that performance was **better than expected** when actual results are compared to a budget.
- **Zero** (no variance) means performance was **the same** when actual results are compared to a budget.

Income and costs work in the opposite direction if interpreting whether a variance is better (favourable) or worse (adverse) than expected.

Income variances

- Favourable if actual income is **greater than** budgeted income.
- Adverse if actual income is **less than** budgeted income.

Cost variances

- Favourable if actual cost is **less than** budgeted cost.
- Adverse if actual cost is **greater than** budgeted cost.

Examples that cause adverse sales income variances

- Seasonal decrease in product prices.
- Economic (business) recession.
- Discounts to selling prices.
- More intense competition.

The above factors are likely to cause the selling price of the product to fall and vice versa for a rise in selling price.

Examples that cause an adverse direct material cost variance

The purchase price of raw material may increase due to:

- Using a different supplier.
- An unexpected industry price rise for raw materials.
- A shortage of raw materials in the industry.
- Higher quality of raw materials purchased.
- Seasonal fluctuations in raw material prices.

Materials usage may increase due to:

- Inferior quality of raw materials purchased which creates more wastage.
- Lower skilled labour overusing or wasting raw materials.
- Poor quality machinery and equipment overusing or wasting raw materials.

Causes of favourable direct material cost variances would be the opposite to the reasons above.

Causes of an adverse direct labour variance

The wage rate per hour for production workers may increase due to:

- Unexpected pay rises given to production workers.
- More overtime hours worked than normal (more paid per hour).
- A shortage of labour in the industry increasing wage rates.

The time taken by production workers may increase due to:

- Inferior quality of raw materials slowing down production workers.
- Lower skilled labour being less efficient and taking longer.
- Poor quality of machinery and equipment slowing down production workers.

Causes of favourable direct labour cost variances would be the opposite to the reasons above.

Causes of an adverse overhead cost variance

Overheads may increase due to:

- Rent increases e.g. the business moves into larger premises.
- Seasonal effects e.g. cost of heating and lighting increasing in the winter.
- Unexpected salary increases for production managers and supervisors.

Reporting significant variances

A significant variance means the variance amount or percentage is substantial enough for management attention and review. Reporting only significant variances to management saves them the time and effort of reviewing and investigating variances that are considered too small or trivial for management attention.

There is no objective answer to what a 'significant variance' is when considering its size or percentage, this would depend on management policy. The exam task will always explain a management policy if you are required to identify whether a variance is significant, or not significant.

A management policy may give different thresholds to report a significant variance to different managers. For example, if a variance is greater than 5% of budget then it is reported to the Financial Controller, however if greater than 10% of budget then it is reported instead to the Finance Director. Significantly larger and adverse variances are often considered more important and reported to a higher level manager.

Spreadsheet skills

Format cells

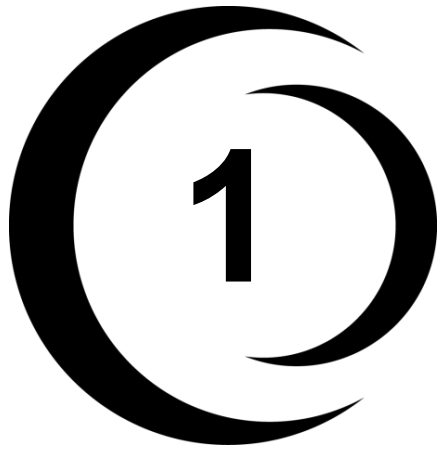
- Adjust text to bold, italics and underline
- Adjust text size, style and colour
- Merge cells
- Fill cells with colour
- Wrap text in cells
- Add a border to cells
- Copy and paste cells
- Insert rows and columns

Format numbers

- Thousand separators
- Accountancy
- Percentages
- Decimals

Use basic formulas

- Addition e.g. =SUM(A1:B10)
- Subtraction e.g. =B10-A1
- Multiplication e.g. =A1*B10
- Division e.g. =A1/B10



Mock Exam One

- Solutions

AAT L2 Principles of Costing

Task 1 - Solutions (8 marks)

(a) Identify whether the following statements are TRUE or FALSE

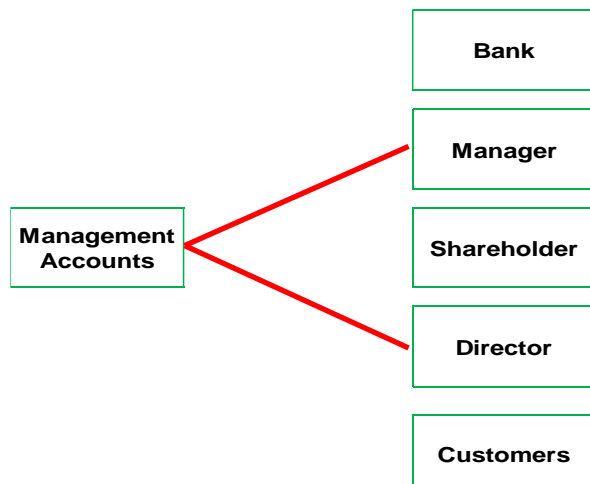
(4 marks)

	TRUE	FALSE
If a manufacturer classifies its costs by element, quality control salaries would be classified as labour cost.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If a manufacturer classifies its costs by function, selling and distribution expenses would be classified as a production cost.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Direct costs are specific costs required to make a product or deliver a service.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
A variable cost is any cost where if no production of goods are made, then the expense would still have to be incurred.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- True. If a manufacturer classifies its costs by element, quality control salaries would be classified as labour cost. Labour is the wage cost of workers.
- False. Selling and distribution, administration and finance costs are examples of non-production (non-factory) costs if using this cost classification.
- True. Direct costs are specific costs that form part of a product made or service delivered. This is a definition of direct cost using classification of cost by nature.
- False. If no production of goods are made, a variable cost is normally avoidable and the total cost would be zero. This statement is more likely describing a fixed cost.

(b) Identify TWO users of management accounts by matching the left hand box to the appropriate right hand boxes.

(2 marks)



(c) Complete the following sentence using the drop down list.

(1 mark)

The classification of cost which is useful for forecasting costs, in particular when activity levels rise or fall would be the classification of cost by **Behaviour**.

Cost classification by behaviour would group costs according to how they change (or behave) as a result of the volume of goods or services increasing or decreasing. This classification is useful for budgeting (forecasting) costs for different amounts of a good made or service performed.

(d) Complete the following sentence using the drop down list.

(1 mark)

A total cost that contains a mixture of fixed and variable cost is called a **Semi-variable cost**.

A semi-variable (or mixed) cost is a total cost that contains a mixture of both fixed and variable components. For example, a factory may pay a fixed (standing) charge for its energy required each month up to a certain limit of energy consumed and then pay additional charges for more energy when this limit has been exceeded.

Task 2 - Solutions (10 marks)

(a) Complete the table below to show two overhead absorption rates that the manufacturer could use. Show your calculations to two decimal places.

(2 marks)

	Machine hour	Labour hour
Overheads (£)	280,000	280,000
Activity	28,000	11,200
Absorption rate (£)	10.00	25.00

- $\text{£}280,000 \div 28,000 \text{ machine hours} = \text{£}10.00 \text{ OAR per machine hour.}$
- $\text{£}280,000 \div 11,200 \text{ machine hours} = \text{£}25.00 \text{ OAR per labour hour.}$

(b) Complete the table below and calculate the total unit cost for the product, using each of the overhead absorption rates you calculated in (a) above. Show your calculations to two decimal places.

(6 marks)

Cost	Machine hour (£)	Labour hour (£)
Materials	4.08	4.08
Labour	2.50	2.50
Overheads	5.00	6.25
Total unit cost	11.58	12.83

Overheads (workings):

- Machine hour basis: $\text{£}10 \text{ per machine hour} \div 60 \text{ minutes (in one hour)} \times 30 \text{ minutes of machine time per unit} = \text{£}5.00 \text{ overhead cost per unit.}$
- Labour hour basis: $\text{£}25 \text{ per labour hour} \div 60 \text{ minutes (in one hour)} \times 15 \text{ minutes of labour time per unit} = \text{£}6.25 \text{ overhead cost per unit.}$

(c) An overhead recovery method best suited to an environment where production work is carried out manually, would be

(2 marks)

Labour hours

- Per unit. This method is more suitable when only a single product or very few products are made. In which case, whether machine hours or labour hours are used, it would make little difference to the product cost.
- Per labour hour. This method is more suitable when production work is mainly carried out manually. If products require a lot of labour hours to make them, it would be fair to charge overheads to products using labour hours.
- Per machine hour. This method is more suitable when machines (automation) is used extensively for production work. If products require a lot of machine hours to make them, it would be fair to charge overheads to products using machine hours.

Task 3 - Solutions (8 marks)

(a)(i) HOS is a hospital that treats patients. Its coding system uses the classification of cost by element first and then by nature. Code the following transactions for operating costs using the table below. Each transaction should have a four character code.

(2 marks)

Activity	Code	Nature of cost	Sub code	Transaction	Code
Materials	M	Direct	800	Bandages to treat patients	M800
		Indirect	900	Hospital management salaries	L900
Labour	L	Direct	800		
		Indirect	900		
Overhead	O	Direct	800		
		Indirect	900		

- Bandages would be materials required to treat patients and form part of the service delivered to patients. It is an example of a direct material cost.
- Hospital management salaries are a labour cost, but does not form part of the service delivered to patients and therefore is indirect labour cost.

(a)(ii) Identify which ONE of the following is least likely to be used as a cost per unit for a hospital.

(1 mark)

Cost per patient

Cost per treatment

Cost per journey

Cost per hour

(b) Identify whether the following statement is true or false using the drop down list below.

(1 mark)

A numeric coding system would include both letters and numbers.

FALSE 

Types of costing system

- Numeric (codes use numbers only).
- Alphabetic (codes use letters only).
- Alpha-numeric (codes use a mixture of numbers and letters).

(c) Complete the following sentence using the drop down list.

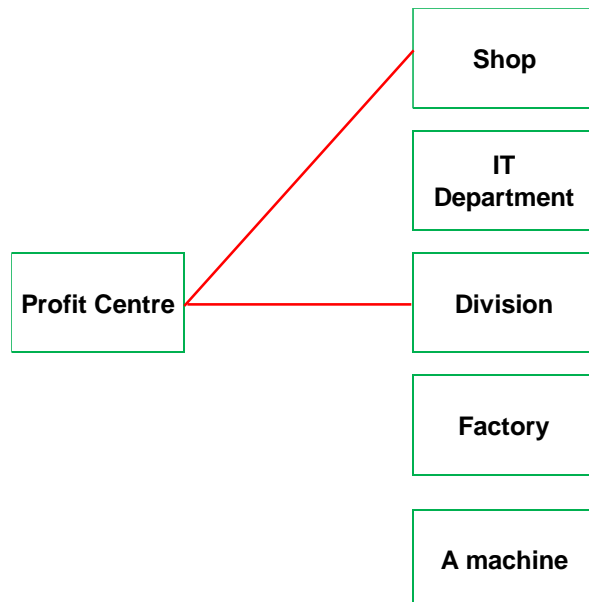
(2 marks)

An overtime premium is normally coded as a direct labour cost of production, if overtime work undertaken was due to **a customer's specific request**.

The general rule is that if overtime is undertaken due to the general pressures of work, then overtime premium is treated as indirect labour expenses. This would include staff shortages, or a sudden increase in customer demand. However, if a customer requests an urgent order during a busy period and it cannot be fulfilled without working overtime, the cost of overtime premium can be treated as direct labour expenses.

(d) Identify TWO examples of profit centres by matching the left hand box to the appropriate right hand boxes.

(2 marks)



A profit centre focus on maximising sales income and minimising (or controlling) costs, to maximise profits. The manager has control over sales income generated and expenditure incurred. The other three examples are more likely to be cost centres.

Task 4 - Solutions (10 marks)

(a) Identify the type of cost for each example in the table shown below.

(3 marks)

Cost	Cost behaviour	Fixed	Variable	Semi-variable
Energy	£34,000 per year regardless of units made + £3.45 per unit made.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Direct material	5 litres per unit made at £2.99 a litre.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depreciation	£18,000 per year,	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b) Complete the table shown below and calculate costs (£) for production levels of 8000, 12000 and 15000 units.

(7 marks)

Units	Total cost (£)	Variable cost (£)	Fixed cost (£)
8000	33,000	18,000	15,000
12000	42,000	27,000	15,000
15000	48,750	33,750	15,000

Workings:

- Fixed cost should be the same regardless of the number of units made, so enter £15,000 into the fixed cost (£) column for production levels of 8000, 12000 and 15000 units.
- Variable cost is given for 15000 units made which is £33,750. Work out the variable cost per unit which is $£33,750 \div 15000 \text{ units} = £2.25 \text{ per unit}$.
- Variable cost for 8000 units \times £2.25 variable cost per unit = £18,000.
- Variable cost for 12000 units \times £2.25 variable cost per unit = £27,000.
- Add fixed and variable cost together to get the total cost (TC = FC + VC) for production levels of 8000, 12000 and 15000 units.

Task 5 - Solutions (12 marks)

	A	B
1	Manufacturing account	£
2	DIRECT MATERIAL USED	45,000
3	Direct labour	67,000
4	Prime Cost	112,000
5	Manufacturing overheads	37,000
6	MANUFACTURING COST	149,000
7	Opening inventory of work in progress	156,000
8	Closing inventory of work in progress	175,000
9	COST OF GOODS MANUFACTURED	130,000
10	Opening inventory of finished goods	56,000
11	Closing inventory of finished goods	78,000
12	COST OF GOOD SOLD	108,000

Manufacturing overheads would be indirect materials (£5,000) + indirect labour (£8,000) + factory indirect expenses (£24,000) = £37,000.

Exam tasks may require any figure in a manufacturing account to be calculated and the layout needs to be memorised for your exam. As an exam tip all manufacturing costs are added together with the exception of three figures, 'closing' inventory of raw material, 'closing' inventory of work in progress and 'closing' inventory of finished goods. These three 'closing' figures are deductions (not additions) in the manufacturing account.

Task 6 - Solutions (12 marks)

(a) Calculate the cost of issuing 150 tonnes of Bean Z grade coffee beans on 20 October and then calculate the closing inventory balance after the issue using the FIFO (first in, first out) and AVCO (average cost) method. Round all answers to the nearest whole pound (£). (6 marks)

	Value of issue (£)	Balance after issue (£)
FIFO	136439	262171
AVCO	139050	259560

Note: 2 marks for each issue cost and 1 mark for each closing inventory valuation.

FIFO

FIFO is a 'selection' method to determine what raw materials were used during a period of time. FIFO determines an issue cost for raw materials by selecting the 'earliest' or 'oldest' inventory that has been purchased.

- On 20 October, 150 tonnes were issued.
- Opening inventory on 1 October would be selected first, the 80 tonnes have a purchase cost of £72,000.
- 70 tonnes still need to be selected. The earliest purchases next were on 7 October. The price per tonne for purchases on 7 October is £920.55 per tonne. 70 tonnes x £920.55 per tonne = £64,438.50. Note: this should be rounded to the nearest pound (£64,439).
- The total issue cost using FIFO would be £136,439 (£72,000 + £64,439).

1 October	80	900.00	72,000
7 October	70	920.55	64,439
Total (FIFO)	150		136,439

The balance remaining after the issue of 150 tonnes would be closing inventory.

Date of purchase	Number of tonnes	Price per tonne	Total cost (£)
1 October	80	900.00	72,000
7 October	200	920.55	184,110
14 October	150	950.00	142,500
Total on the 14 October	430		398,610
Issue on the 20 October	-150		-136,439
Balance after issue	280		262,171

AVCO

The weighted average cost (AVCO) method calculates an average price for all purchases that exist on the date of each issue, the average price is used to work out the cost of raw materials issued to production.

- On 20 October, 150 tonnes were issued (at the average price per tonne).
- Total value of all inventory on 20 October is £398,610 ÷ 430 tonnes = £977.00 (the average price per tonne).
- The total issue cost using AVCO would be, 150 units x £977.00 per tonne = £139,050 issue cost.
- The balance remaining after the issue of 150 tonnes would be.
- The closing inventory balance remaining at the end of the period would £398,610 (total value of all inventory on 20 October) less the issue cost of £139,050, the remaining balance would be £259,560.

(b)(i) Calculate the basic pay, overtime premium and total pay before bonus for the team of production workers in the table shown below. Note: Do not enter figures in grey cells. Round all figures to the nearest whole pound (£).

(4 marks)

Labour cost	Hours	£
Basic pay	405	3,645
Overtime premium (Mon to Fri)	35	158
Overtime premium (Weekend)	20	180
Total pay before bonus		3,983

Workings

- 405 total hours x basic rate £9 per hour = £3,645.
- 35 hours (Mon to Fri) at time and a half, the overtime premium (excess paid above basic rate) is 50% x £9 basic rate = £4.50 overtime premium. £4.50 overtime premium x 35 hours overtime = £158 (rounded).
- 20 hours (Weekend) at double time, the overtime premium (excess paid above basic rate) is 100% x £9 basic rate = £9 overtime premium. £9 overtime premium x 20 hours = £180.

(b)(ii) Complete the following sentence.

(1 mark)

Each production worker is paid a bonus of £50.

Workings

- 405 hours worked. 850 units were made in the week by 10 production workers.
- The team is expected to take 30 minutes for every unit made. If 850 units were made the target is 30 minutes (0.5 hours) per unit, so $850 \text{ units} \times 0.5 \text{ hours} = 425 \text{ hours}$.
- Production workers took 405 hours, they saved 20 hours ($425 \text{ hours} - 405 \text{ hours}$). A bonus is paid to each production worker of £2.50 for every hour saved.
- $20 \text{ hours saved} \times £2.50 \text{ each hour saved} = £50 \text{ bonus paid to each production worker}$.

(b)(iii) Complete the following sentence.

(1 mark)

The production team is paid a total bonus of £500.

Workings

- 10 production workers.
- Each production worker is paid a bonus of £50.
- The production team is paid a total bonus of £500 ($10 \text{ workers} \times £50 \text{ bonus}$).

Task 7 - Solutions (20 marks)

	A	B	C	D	E	F	G
1		Budget £	Actual £	Variance £	Variance as a percentage of budget %	Significant/ Not significant	Who the variance should be reported to
2	Sales income	40,000	55,000	15,000	37.50%	Significant	Managing director
3	Direct materials	1,500	2,200	-700	-46.67%	Significant	Production manager
4	Direct labour	4,500	4,500	0	0.00%	Not significant	Not required
5	Overheads	2,000	1,500	500	25.00%	Not significant	Not required
6	Profit or loss	32,000	46,800				

Formula

	A	B	C	D	E	F	G
1		Budget £	Actual £	Variance £	Variance as a percentage of budget %	Significant/ Not significant	Who the variance should be reported to
2	Sales income	40,000	55,000	=C2-B2	=D2/B2	Significant	Managing director
3	Direct materials	1,500	2,200	=B3-C3	=D3/B3	Significant	Production manager
4	Direct labour	4,500	4,500	=B4-C4	=D4/B4	Not significant	Not required
5	Overheads	2,000	1,500	=B5-C5	=D5/B5	Not significant	Not required
6	Profit or loss	=B2-B3-B4-B5	=C2-C3-C4-C5				

1 mark for a correct use of a formula in cells B6, C6, D2:D5 and E2:E5 (10 marks in total). In cells D2:D5, the formula for each variance (£) must show a negative figure if adverse and a positive figure if favourable.

Alternative formula can be accepted, for example in cell D4 it would be ok to use the formula C4-B4 (since the variance is neither adverse, or favourable). In cell B6, the combined addition and subtraction formula could be =B2-SUM(B3:B5). In cell C6, the combined addition and subtraction formula could be =C2-SUM(C3:C5).

1 mark for each correct selection from the picklists in cells F2:F5 and cells G2:G5 (8 marks in total).

Sales

Significant. In excess of 20% of budget (37.50%) and greater than £10,000 (£15,000). The 'AND' rule indicates both thresholds have been exceeded, and the variance must be reported to the managing director.

Direct materials

Significant. In excess of 10% of budget (46.67%) and greater than £500 (£700). The 'AND' rule indicates both thresholds have been exceeded, and the variance must be reported to the production manager.

Direct labour

Not significant. 0.00% and £0. Do not report to any manager.

Overheads

Not significant. In excess of 10% of budget (25%) but NOT greater than £500 (it is exactly £500). The 'AND' rule indicates both thresholds have NOT been exceeded, so the variance must NOT be reported to any manager.

(b) Identify TWO variances below that will increase actual profits, when compared to budget profits. Match the left hand box to the appropriate right hand boxes.

(2 marks)

