Accounting for Costs

Paper T4

QUESTION PAPER

Time allowed **2 hours**

This paper is divided into two sections

Section A	ALL TWENTY questions are compulsory and MUST be answered
Section B	ALL FOUR questions are compulsory and MUST be answered

Do not open this paper until instructed by the supervisor

This question paper must not be removed from the examination hall

The Association of Chartered Certified Accountants

Section A – ALL TWENTY questions are compulsory and MUST be answered

Please use the Candidate Registration Sheet provided to indicate your chosen answer to each multiple-choice question. Each question within this section is worth 2 marks.

1   What is the purpose of management information?

   A   Planning only
   B   Planning and control only
   C   Planning, control and decision-making only
   D   Planning, control, decision-making and research and development

2   Which of the following is a feature of an interlocking bookkeeping system?

   A   One set of ledger accounts
   B   No control accounts
   C   Cost ledger contains asset and liability accounts
   D   Separate cost and financial ledgers

3   Which of the following are used for the capture and storage of management accounting data by computer?
   (i)   Bar code
   (ii) Disk
   (iii) Printer
   (iv) Tape

   A   (i) and (ii) only
   B   (i), (ii) and (iv) only
   C   (i), (iii) and (iv) only
   D   (ii), (iii) and (iv) only

4   The following statements describe the effect of raw material pricing policy in a situation where prices are rising consistently:
   1.   Stock values will be higher using last-in first-out (LIFO) rather than weighted average.
   2.   Profit will be lower using weighted average rather than first-in first-out (FIFO).

   Are the statements TRUE or FALSE?

	Statement 1	Statement 2
A	True	True
B	False	False
C	True	False
D	False	True

5   4,000 litres of a chemical were manufactured in a period. There is a normal loss of 6% of the material input to the manufacturing process. There was an abnormal loss of 4% of the material input in the period.

   How many litres of material (to the nearest litre) were input during the period?

   A   3,600
   B   4,255
   C   4,400
   D   4,444

6 **What is the purpose of calculating an economic order quantity (EOQ) for a raw material?**

A To minimise the stockholding quantity of the material
B To minimise the stockholding costs of the material
C To minimise the total cost of purchasing and storing the material
D To enable the reorder level of the material to be established

7 **In an integrated cost and financial accounting system what would be the entry to record direct labour costs being charged to production?**

	Debit	Credit
A	Financial ledger control	Work-in-progress
B	Production overhead	Wages control
C	Finished goods	Work-in-progress
D	Work-in-progress	Wages control

8 The following statements relate to depreciation:
1. Using the reducing balance method, product unit costs decline from year to year if output stays the same.
2. Using the straight-line method, product unit costs decline as output increases.

Are the statements TRUE or FALSE?

	Statement 1	Statement 2
A	True	True
B	False	False
C	True	False
D	False	True

9 Overheads in a production cost centre for a period are:

Budget	£74,600
Absorbed	£71,890
Actual	£73,220

What is the overhead over/under absorption?

A £1,330 over absorbed
B £1,330 under absorbed
C £2,710 over absorbed
D £2,710 under absorbed

10 **What distinguishes absorption costing from marginal costing?**

A Product costs include both prime cost and production overhead
B Product costs include both production and non-production costs
C Stock valuation includes a share of all production costs
D Stock valuation includes a share of all costs

11 A company uses a marginal costing system. 10,000 units of its single product were manufactured in a period during which 9,760 units were sold.

If absorption costing is applied instead what would be the effect on profit?

A Higher by (240 units x fixed production overhead cost per unit)
B Lower by (240 units x fixed production overhead cost per unit)
C Higher by [240 units x (fixed production overhead cost per unit + fixed non-production overhead cost per unit)]
D Lower by [240 units x (fixed production overhead cost per unit + fixed non-production overhead cost per unit)]

[P.T.O.

12 The following items are recorded in a costing system:
    (i)   Actual direct material cost
    (ii)   Actual direct labour cost
    (iii) Actual manufacturing overheads
    (iv)   Absorbed manufacturing overheads

    Which of the items are contained in a typical job cost?

    A   (i) and (ii) only
    B   (i), (ii) and (iii) only
    C   (i), (ii) and (iv) only
    D   All four items

13 12,000 kg of a material were input to a process in a period. The normal loss is 10% of input. There is no opening or closing work-in-progress. Output in the period was 10,920 kg.

    What was the abnormal gain/loss in the period?

    A   Abnormal gain of 120 kg
    B   Abnormal loss of 120 kg
    C   Abnormal gain of 1,080 kg
    D   Abnormal loss of 1,080 kg

14 **In process costing what are equivalent units?**

    A   Production output expressed as expected performance
    B   Production of homogeneous product
    C   Notional whole units representing incomplete work
    D   Units produced in more than one process

15 Completed output from a manufacturing process in a period totalled 5,640 units. There was no work-in-progress at the beginning of the period but 780 units, 60% complete, remained in the process at the end of the period.

    What are the equivalent units of the closing work-in-progress?

    A   312
    B   468
    C   780
    D   6,108

16 A manufacturing process had no work-in-progress at the beginning of a period. 20,000 units of raw material, costing £8·20 per unit, were input to the process in the period. 18,600 completed units were transferred out. Conversion costs were £7·65 per completed unit and £6·12 per incomplete unit.

    What was the value of the closing work-in-progress?

    A   £8,568
    B   £20,048
    C   £22,190
    D   £30,788

17 Consider the two statements below relating to process costing:
1. In costing for joint products, apportioning joint costs using net realisable values will always result in higher costs being apportioned to each product than using volume of output.
2. The benefit of further processing should be evaluated on the basis of incremental costs and revenues only.

Are the statements TRUE or FALSE?

	Statement 1	Statement 2
A	True	True
B	False	False
C	True	False
D	False	True

18 A company has a single product. The following budgeted information relates to a period:

Sales units	800,000
Sales revenue	£1,000,000
Total variable costs	£590,000
Total fixed costs	£350,000

What sales revenue (to the nearest £'000) is required to break even?

A £350,000
B £593,000
C £683,000
D £854,000

19 **What is the effective annual rate of interest of 2·1% compounded every three months?**

A 6·43%
B 8·40%
C 8·67%
D 10·87%

20 A company is considering an immediate investment in new machinery. The machinery would cost £100,000 with expected net cash inflows of £30,000 per year starting in Year 1. The disposal value of the machine after five years is expected to be £10,000. £15,000 has already been incurred on development costs.

What is the payback period of the investment based on future incremental cash flows?

A 3·0 years
B 3·3 years
C 3·5 years
D 3·8 years

(40 marks)

Section B – ALL FOUR questions are compulsory and MUST be attempted

1 **(a)** The future value (S) of a sum invested now can be calculated using the formula:

$S = P(1 + r)^n$

Required:

(i) Define each of the other constituents in the formula above (i.e. P, r and n); (3 marks)

(ii) Calculate the value (to the nearest £) after four years of £5,000 invested now at a compound rate of interest of 8% per annum. (3 marks)

(b) A company is considering an investment in new machinery. The incremental annual profits (losses) relating to the investment are estimated to be:

	£'000
Year 1	(11)
Year 2	3
Year 3	34
Year 4	47
Year 5	8

Investment at the start of the project would be £175,000. The investment sum, assuming nil disposal value after five years, would be written off using the straight-line method. The depreciation has been included in the profit estimates above, which should be assumed to arise at each year end.

Required:

(i) Calculate the net present value (NPV) of the investment at a discount rate of 10% per annum (the company's required rate of return);

Discount factors at 10% are:
Year 1	0·909
Year 2	0·826
Year 3	0·751
Year 4	0·683
Year 5	0·621

(8 marks)

(ii) State, on the basis of your calculations, whether the investment is worthwhile. Justify your statement.
(2 marks)

(16 marks)

2 **(a)** **State an appropriate basis of apportionment for each of the following production overhead costs:**

(i) Factory rent;

(ii) Staff canteen. (4 marks)

(b) Overheads allocated, apportioned and re-apportioned to the two production cost centres in a factory for a period were:

	Production Cost Centre	
	X	Y
Budget	£161,820	£97,110
Actual	£163,190	£96,330

Overheads are absorbed using predetermined rates. A machine hour rate is used in Production Cost Centre X and a direct labour hour rate in Production Cost Centre Y. Machine and direct labour activity in each production cost centre is:

	Production Cost Centre	
	X	Y
Machine hours:		
Budget	8,700	1,760
Actual	8,960	1,725
Direct labour hours:		
Budget	6,220	8,300
Actual	6,276	7,870

Required:

Calculate for each production cost centre for the period:

(i) the predetermined production overhead absorption rate; (3 marks)

(ii) the production overheads absorbed; (3 marks)

(iii) the over/under absorption of production overhead. (4 marks)

(14 marks)

3 (a) Describe fully FOUR features of useful information.   (6 marks)

(b) A firm's cost function may be expressed as:

$y = a + bx$

where:
   y is the total cost
   a is the total fixed cost
   b is the variable cost per unit
   x is the number of units of output

The total cost for output of 8,400 units in a period is £106,250 and the total period fixed cost is £41,990.

Required:

Using the above information and formula, calculate:

(i)   the variable cost per unit;   (2 marks)

(ii) the total cost for output of 8,660 units in a period;   (2 marks)

(iii) the cost per unit for output of 8,500 units in a period.   (2 marks)

                                                                                               (12 marks)

4 (a) Company A manufactures and sells a single product. The following information is available:

Selling price per unit	£60·00
Variable costs per unit	£36·00
Fixed costs per period	£216,000

Required:

(i)   Draw a profit/volume (P/V) chart based on sales up to 14,000 units per period.   (8 marks)

(ii) Clearly identify the break-even point, and areas of profit and loss, on the chart.   (2 marks)

(b) Company B manufactures and sells three products. The following information is available:

	Product A	Product B	Product C
Selling price per unit	£10·00	£12·50	£18·70
Variable costs per unit	£5·20	£7·50	£9·35
Machine hours per unit	0·6	0·5	1·0
Direct labour hours per unit	1·0	1·2	2·5

The company wishes to maximise profit each period.

Required:

(i)   Calculate the contribution/sales (C/S) ratio of each of the products;   (2 marks)

(ii) List the products in the order of their production priority (i.e. most profitable product first) in EACH of the following situations:

(1) if machine hours are the limiting factor;   (3 marks)

(2) if direct labour hours are the limiting factor.   (3 marks)

                                                                                               (18 marks)

End of Question Paper