FOUNDATIONS IN ACCOUNTANCY

Management Accounting

Pilot Paper

Paper FMA

Time allowed: 2 hours

This paper is divided into two sections:

Section A – ALL 35 questions are compulsory and MUST be attempted

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

Formulae Sheet, Present Value and Annuity Tables are on pages 17, 18 and 19

Do NOT open this paper until instructed by the supervisor.

This question paper must not be removed from the examination hall.

ACCA

The Association of Chartered Certified Accountants

Section A – ALL 35 questions are compulsory and MUST be attempted

Please use the space provided on the inside cover of the Candidate Answer Booklet to indicate your chosen answer to each multiple choice question.
Each question is worth 2 marks.

1   A manufacturing company benchmarks the performance of its accounts receivable department with that of a leading credit card company.

   What type of benchmarking is the company using?

   A   Internal benchmarking
   B   Competitive benchmarking
   C   Functional benchmarking
   D   Strategic benchmarking

2   **Which of the following BEST describes target costing?**

   A   Setting a cost by subtracting a desired profit margin from a competitive market price
   B   Setting a price by adding a desired profit margin to a production cost
   C   Setting a cost for the use in the calculation of variances
   D   Setting a selling price for the company to aim for in the long run

3   Information relating to two processes (F and G) was as follows:

Process	Normal loss as % of input	Input (litres)	Output (litres)
F	8	65,000	58,900
G	5	37,500	35,700

   For each process, was there an abnormal loss or an abnormal gain?

	Process F	Process G
A	Abnormal gain	Abnormal gain
B	Abnormal gain	Abnormal loss
C	Abnormal loss	Abnormal gain
D	Abnormal loss	Abnormal loss

4   The following budgeted information relates to a manufacturing company for next period:

	Units		$
Production	14,000	Fixed production costs	63,000
Sales	12,000	Fixed selling costs	12,000

   The normal level of activity is 14,000 units per period.

   Using absorption costing the profit for next period has been calculated as $36,000.

   What would be the profit for next period using marginal costing?

   A $25,000
   B $27,000
   C $45,000
   D $47,000

5 The Eastland Postal Service is government owned. The government requires it to provide a parcel delivery service to every home and business in Eastland at a low price which is set by the government. Express Couriers Co is a privately owned parcel delivery company that also operates in Eastland. It is not subject to government regulation and most of its deliveries are to large businesses located in Eastland's capital city. You have been asked to assess the relative efficiency of the management of the two organisations.

Which of the following factors should NOT be allowed for when comparing the ROCE of the two organisations to assess the efficiency of their management?

A Differences in prices charged
B Differences in objectives pursued
C Differences in workforce motivation
D Differences in geographic areas served

6 **Under which sampling method does every member of the target population has an equal chance of being in the sample?**

A Stratified sampling
B Random sampling
C Systematic sampling
D Cluster sampling

7 A Company manufactures and sells one product which requires 8 kg of raw material in its manufacture. The budgeted data relating to the next period are as follows:

	Units
Sales	19,000
Opening inventory of finished goods	4,000
Closing inventory of finished goods	3,000
	Kg
Opening inventory of raw materials	50,000
Closing inventory of raw materials	53,000

What is the budgeted raw material purchases for next period (in kg)?

A 141,000
B 147,000
C 157,000
D 163,000

8 Up to a given level of activity in each period the purchase price per unit of a raw material is constant. After that point a lower price per unit applies both to further units purchased and also retrospectively to all units already purchased.

Which of the following graphs depicts the total cost of the raw materials for a period?
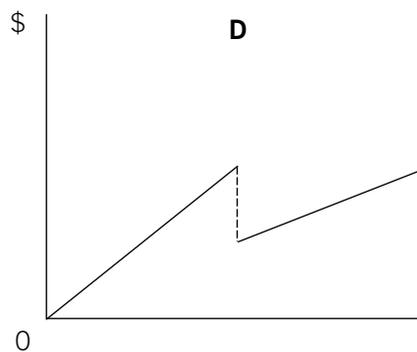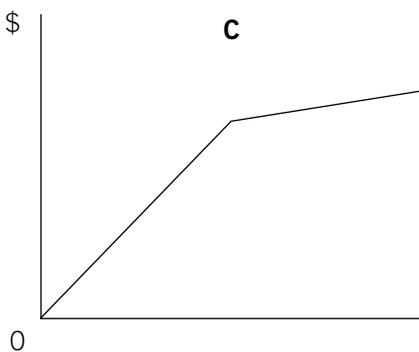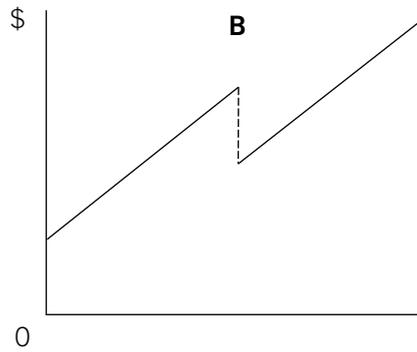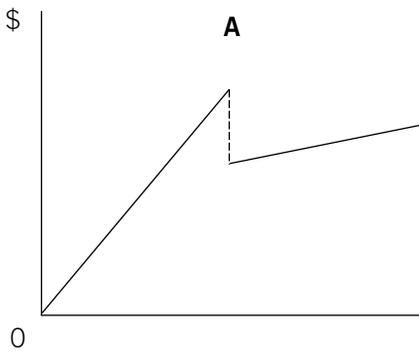
A   Graph A
B   Graph B
C   Graph C
D   Graph D

9   Which of the following are benefits of budgeting?

1   It helps coordinate the activities of different departments
2   It fulfils legal reporting obligations
3   It establishes a system of control
4   It is a starting point for strategic planning

A   1 and 4 only
B   1 and 3 only
C   2 and 3 only
D   2 and 4 only

10 The following statements relate to the participation of junior management in setting budgets:

1.   It speeds up the setting of budgets
2.   It increases the motivation of junior managers
3.   It reduces the level of budget padding

Which statements are true?

A   1 only
B   2 only
C   2 and 3 only
D   1, 2 and 3

4

11 A company has a capital employed of $200,000. It has a cost of capital of 12% per year. Its residual income is $36,000.

What is the company's return on investment?

A   30%
B   12%
C   18%
D   22%

12 A company has calculated a $10,000 adverse direct material variance by subtracting its flexed budget direct material cost from its actual direct material cost for the period.

Which of the following could have caused the variance?

(1) An increase in direct material prices
(2) An increase in raw material usage per unit
(3) Units produced being greater than budgeted
(4) Units sold being greater than budgeted

A   2 and 3 only
B   3 and 4 only
C   1 and 2 only
D   1 and 4 only

13 A company has recorded the following variances for a period:

Sales volume variance $10,000 adverse
Sales price variance $5,000 favourable
Total cost variance $12,000 adverse

Standard profit on actual sales for the period was $120,000.

What was the fixed budget profit for the period?

A $137,000
B $103,000
C $110,000
D $130,000

14 Which of the following are suitable measures of performance at the strategic level?

(1) Return on investment
(2) Market share
(3) Number of customer complaints

A   1 and 2
B   2 only
C   2 and 3
D   1 and 3

[P.T.O.

15 **Which of the following are feasible values for the correlation coefficient?**

1   +1·40
2   +1·04
3   0
4   −0·94

A 1 and 2 only
B 3 and 4 only
C 1, 2 and 4 only
D 1, 2, 3 and 4

16 A company's operating costs are 60% variable and 40% fixed.

Which of the following variances' values would change if the company switched from standard marginal costing to standard absorption costing?

A   Direct material efficiency variance
B   Variable overhead efficiency variance
C   Sales volume variance
D   Fixed overhead expenditure variance

17 ABC Co has a manufacturing capacity of 10,000 units. The flexed production cost budget of the company is as follows:

Capacity	60%	100%
Total production costs	$11,280	$15,120

What is the budgeted total production cost if it operates at 85% capacity?

A $13,680
B $12,852
C $14,025
D $12,340

18 Using an interest rate of 10% per year the net present value (NPV) of a project has been correctly calculated as $50. If the interest rate is increased by 1% the NPV of the project falls by $20.

What is the internal rate of return (IRR) of the project?

A   7·5%
B   11·7%
C   12·5%
D   20·0%

19 A factory consists of two production cost centres (P and Q) and two service cost centres (X and Y). The total allocated and apportioned overhead for each is as follows:

P	Q	X	Y
$95,000	$82,000	$46,000	$30,000

It has been estimated that each service cost centre does work for other cost centres in the following proportions:

	P	Q	X	Y
Percentage of service cost centre X to	50	50	–	–
Percentage of service cost centre Y to	30	60	10	–

The reapportionment of service cost centre costs to other cost centres fully reflects the above proportions.

After the reapportionment of service cost centre costs has been carried out, what is the total overhead for production cost centre P?

A $124,500
B $126,100
C $127,000
D $128,500

20 A company always determines its order quantity for a raw material by using the Economic Order Quantity (EOQ) model.

What would be the effects on the EOQ and the total annual holding cost of a decrease in the cost of ordering a batch of raw material?

	EOQ	Annual holding cost
A	Higher	Lower
B	Higher	Higher
C	Lower	Higher
D	Lower	Lower

21 A company which operates a process costing system had work-in-progress at the start of last month of 300 units (valued at $1,710) which were 60% complete in respect of all costs. Last month a total of 2,000 units were completed and transferred to the finished goods warehouse. The cost per equivalent unit for costs arising last month was $10. The company uses the FIFO method of cost allocation.

What was the total value of the 2,000 units transferred to the finished goods warehouse last month?

A $19,910
B $20,000
C $20,510
D $21,710

22 A manufacturing company operates a standard absorption costing system. Last month 25,000 production hours were budgeted and the budgeted fixed production cost was $125,000. Last month the actual hours worked were 24,000 and standard hours for actual production were 27,000.

What was the fixed production overhead capacity variance for last month?

A $5,000 Adverse
B $5,000 Favourable
C $10,000 Adverse
D $10,000 Favourable

23 The following statements have been made about value analysis.

(1) It seeks the lowest cost method of achieving a desired function
(2) It always results in inferior products
(3) It ignores esteem value

Which is/are true ?

A 1 only
B 2 only
C 3 only
D 1 and 3 only

24 **Under which of the following labour remuneration methods will direct labour cost always be a variable cost?**

A Day rate
B Piece rate
C Differential piece rate
D Group bonus scheme

25 A company manufactures and sells a single product. In two consecutive months the following levels of production and sales (in units) occurred:

	Month 1	Month 2
Sales	3,800	4,400
Production	3,900	4,200

The opening inventory for Month 1 was 400 units. Profits or losses have been calculated for each month using both absorption and marginal costing principles.

Which of the following combination of profits and losses for the two months is consistent with the above data?

	Absorption costing profit/(loss)		Marginal costing profit/(loss)	
	Month 1	Month 2	Month 1	Month 2
	$	$	$	$
A	200	4,400	(400)	3,200
B	(400)	4,400	200	3,200
C	200	3,200	(400)	4,400
D	(400)	3,200	200	4,400

26 The following statements relate to the advantages that linear regression analysis has over the high low method in the analysis of cost behaviour:

1. the reliability of the analysis can be statistically tested
2. it takes into account all of the data
3. it assumes linear cost behaviour

Which statements are true?

A 1 only
B 1 and 2 only
C 2 and 3 only
D 1, 2 and 3

27 A company operates a process in which no losses are incurred. The process account for last month, when there was no opening work-in-progress, was as follows:

Process Account

	$		$
Costs arising	624,000	Finished output (10,000 units)	480,000
		Closing work-in-progress (4,000 units)	144,000
	624,000		624,000

The closing work in progress was complete to the same degree for all elements of cost.

What was the percentage degree of completion of the closing work-in-progress?

A   12%
B   30%
C   40%
D   75%

28 Which of the following would not be expected to appear in an organisation's mission statement?

A   The organisation's values and beliefs
B   The products or services offered by the organisation
C   Quantified short term targets the organisation seeks to achieve
D   The organisation's major stakeholders

29 An organisation operates a piecework system of remuneration, but also guarantees its employees 80% of a time-based rate of pay which is based on $20 per hour for an eight hour working day. Three minutes is the standard time allowed per unit of output. Piecework is paid at the rate of $18 per standard hour.

If an employee produces 200 units in eight hours on a particular day, what is the employee's gross pay for that day?

A $128
B $144
C $160
D $180

30 A company uses an overhead absorption rate of $3·50 per machine hour, based on 32,000 budgeted machine hours for the period. During the same period the actual total overhead expenditure amounted to $108,875 and 30,000 machine hours were recorded on actual production.

By how much was the total overhead under or over absorbed for the period?

A   Under absorbed by $3,875
B   Under absorbed by $7,000
C   Over absorbed by $3,875
D   Over absorbed by $7,000

[P.T.O.

31 Which of the following statements relating to management information are true?

1. It is produced for parties external to the organisation
2. There is usually a legal requirement for the information to be produced
3. No strict rules govern the way in which the information is presented
4. It may be presented in monetary or non monetary terms

A 1 and 2
B 3 and 4
C 1 and 3
D 2 and 4

32 A company's sales in the last year in its three different markets were as follows

	$
Market 1	100,000
Market 2	150,000
Market 3	50,000
Total	300,000

In a pie chart representing the proportion of sales made by each region what would be the angle of the section representing Market 3 (to the nearest whole degree)?

A 17 degrees
B 50 degrees
C 61 degrees
D 120 degrees

33 Which of the following BEST describes a flexible budget?

A A budget which shows variable production costs only
B A monthly budget which is changed to reflect the number of days in the month
C A budget which shows sales revenue and costs at different levels of activity
D A budget that is updated halfway through the year to incorporate the actual results for the first half of the year

34 The purchase price of an item of inventory is $25 per unit. In each three month period the usage of the item is 20,000 units. The annual holding costs associated with one unit equate to 6% of its purchase price. The cost of placing an order for the item is $20.

What is the Economic Order Quantity (EOQ) for the inventory item to the nearest whole unit?

A 730
B 894
C 1,461
D 1,633.

35 Two products G and H are created from a joint process. G can be sold immediately after split-off. H requires further processing into product HH before it is in a saleable condition. There are no opening inventories and no work in progress of products G, H or HH. The following data are available for last period:

	$
Total joint production costs	350,000
Further processing costs of product H	66,000

Product	Production units	Closing inventory
G	420,000	20,000
HH	330,000	30,000

Using the physical unit method for apportioning joint production costs, what was the cost value of the closing inventory of product HH for last period?

A $16,640
B $18,625
C $20,000
D $21,600

(70 marks)

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

Please write your answer within the answer booklet in accordance with the detailed instructions provided within each of the questions in this section of the exam paper. You are NOT required to show your workings.

1   Cab Co owns and runs 350 taxis and had sales of $10 million in the last year. Cab Co is considering introducing a new computerised taxi tracking system.

The expected costs and benefits of the new computerised tracking system are as follows:

(i)   The system would cost $2,100,000 to implement.

(ii)   Depreciation would be provided at $420,000 per annum.

(iii) $75,000 has already been spent on staff training in order to evaluate the potential of the new system. Further training costs of $425,000 would be required in the first year if the new system is implemented.

(iv)   Sales are expected to rise to $11 million in Year 1 if the new system is implemented, thereafter increasing by 5% per annum. If the new system is not implemented, sales would be expected to increase by $200,000 per annum.

(v)   Despite increased sales, savings in vehicle running costs are expected as a result of the new system. These are estimated at 1% of total sales.

(vi)   Six new members of staff would be recruited to manage the new system at a total cost of $120,000 per annum.

(vii) Cab Co would have to take out a maintenance contract for the new system at a cost of $75,000 per annum for five years.

(viii) Interest on money borrowed to finance the project would cost $150,000 per annum.

(ix)   Cab Co's cost of capital is 10% per annum.

Required:

(a) Indicate whether each of the following items are relevant or irrelevant cashflows for a net present value (NPV) evaluation of whether to introduce the computerised tracking system. In your answer booklet, list (i) to (v) to represent each of the items and write 'relevant' if an term is a relevant cash flow and 'irrelevant' if it is not.

(i) Computerised tracking system investment of $2,100,000	(0·5 marks)
(ii) Depreciation of $420,000 in each of the five years	(1 mark)
(iii) Staff training costs of $425,000	(1 mark)
(iv) Maintenance costs of $75,000 per annum for five years	(0·5 marks)
(v) Staff training costs of $75,000	(1 mark)

(b) Calculate the following values if the computerised tracking system is implemented.

(i) Incremental sales in Year 1	(1 mark)
(ii) Total sales in Year 2	(1 mark)
(iii) Savings in vehicle running costs in Year 1	(0·5 marks)
(iv) Present value of the maintenance costs over the life of the contract	(1·5 marks)

(c) Cab Co wishes to maximise the wealth of its shareholders. It has correctly calculated the following measures for the proposed project:

– The internal rate of return (IRR) is 14%,
– The return on average capital employed (ROCE) is 20% and
– The payback period is four years.

Required:

Which of the following is true?

A   The project is worthwhile because the IRR is a positive value
B   The project is worthwhile because the IRR is greater than the cost of capital
C   The project is not worthwhile because the IRR is less than the ROCE
D   The project is not worthwhile because the payback is less than five years   (2 marks)

(10 marks)

2 Castilda Co manufactures toy robots. The company operates a standard marginal costing system and values inventory at standard cost.

The following is an extract of a partly completed spreadsheet for calculating variances in month 1.

	A	B	C	D
1	Standard Cost Card- Toy Robot		$ per robot	
2	Selling price		120	
3	Direct material	1 material per unit	20	
4	Direct labour	6 hours @ $8 per hour	48	
5	Production overhead		24	
6	Standard contribution		28	
7	Actual and budgeted activity levels in units	Budget	Actual	
8	Sales	25,000	25,600	
9	Production	25,000	26,000	
10	Actual sales revenue and variable costs	$		
11	Sales	3,066,880		
12	Direct material(purchased and used)	532,800		
13	Direct labour (150,000 hours)	1,221,000		
14	Variable production overhead	614,000		
15	Variances	$		
16	Total direct materials variances	12,800	Adverse	
17	Direct labour rate variances	21,000	Adverse	
18	Direct labour efficiency variances	48,000	Favourable	
19	Total variable production overhead variances	10,000	Favourable	

Required:

(a) Which formula will correctly calculate the figure in B18?

    A   = (C9*C4)- B13

    B   =B13-(C9*C4)

    C   = (C9*C4)- (150,000*8)

    D   =(150,000-(C9*6))*8   (2 marks)

(b) Castilda Co uses a standard costing operating statement to reconcile budgeted contribution with actual contribution.

A standard cost operating statement for Month 1 is given below with some information missing.

Standard costing operating statement Month 1

	$	$
Budgeted contribution		700,000
Gap 1		Gap 2
Standard contribution on actual sales		
Sales price variance		Gap 3
		711,680
Cost variances		
Total direct materials variance	12,800 adv	
Direct labour rate variance	21,000 adv	
Direct labour efficiency variance	48,000 fav	
Total variable production overhead variance	10,000 fav	
		24,200 fav
Actual contribution		735,880

Required:

(i) Which is the correct title for Gap 1?

  A Sales volume variance
  B Total sales variance
  C Fixed overhead volume variance (1 mark)

(ii) Calculate the variance for Gap 2 and state whether it is favourable or adverse. (2·5 marks)

(iii) What is the sales price variance in Gap 3 and state whether it is favourable or adverse. (2·5 marks)

(c) Castilda's management accountant thinks that the direct labour rate and efficiency variances for Month 1 could be interrelated.

Required:

Which TWO of the following could explain their interrelationship?

A Higher grade labour performed tasks more efficiently
B Lower grade labour performed tasks less efficiently
C A productivity bonus was paid to direct labour
D Actual production was less than budgeted (2 marks)

(10 marks)

3   Nicholson Co sells mobile telephones. It supplies its customers with telephones and wireless telephone connections. Customers pay an annual fee plus a monthly charge based on calls made.

The company has recently employed a consultant to install a balanced scorecard system of performance measurement and to benchmark the results against those of Nicholson Co's competitors. Unfortunately the consultant was called away before the work was finished. You have been asked to complete the work. The following data is available.

<div align="center">

Nicholson Co
Operating data for the year ended 30 November 20X0

</div>

Sales revenue	$480 million
Sales attributable to new products	$8 million
Average capital employed	$192 million
Profit before interest and tax	$48 million
Average numbers of customers	1,960,000
Average number of telephones returned for repair each day	10,000
Number of bill queries	12,000
Number of customer complaints	21,600
Number of customers lost	117,600
Average number of telephones unrepaired at the end of each day	804

Required:

(a)   Calculate the following ratios and other statistics for Nicholson Co for the year ended 30 November 20X0.

    (i)   Return on capital employed;   (1·5 marks)

    (ii)   Return on sales (net profit percentage);   (1·5 marks)

    (iii)   Asset turnover;   (1·5 marks)

    (iv)   Average wait for telephone repair (in days).   (1·5 marks)

(b)   Calculate the following statistics for Nicholson Co. (Give your answers to 2 decimal places.)

    (i)   Percentage of customers lost per annum;   (1 mark)

    (ii)   Percentage of sales attributable to new products.   (1 mark)

(c)   The following explanation of a balanced score card is incomplete:

A balanced scorecard measures performance from four perspectives: customer satisfaction, growth, financial success and (**Gap 1**). The scorecard is 'balanced' in that it requires managers to (**Gap 2**).

Required:

Select the correct phrases to complete each sentence.

Gap 1

    A   process flexibility
    B   process efficiency
    C   non financial success   (1 mark)

Gap 2

    A   achieve on an equal number of KPIs in each perspective
    B   offset bad performance in one area with good performance in another
    C   deliver performance in all four areas   (1 mark)

(10 marks)

Formulae Sheet

Regression analysis

$y = a + bx$

$$a = \frac{\sum y}{n} - \frac{b\sum x}{n}$$

$$b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Economic order quantity

$$= \sqrt{\frac{2C_0 D}{C_h}}$$

Economic batch quantity

$$= \sqrt{\frac{2C_0 D}{C_h(1 - \frac{D}{R})}}$$

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where   r = discount rate
             n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·941	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·305	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

Annuity Table

Present value of an annuity of 1 i.e. $\dfrac{1 - (1 + r)^{-n}}{r}$

Where   r = discount rate
           n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·37	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·26	10·58	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·13	11·35	10·63	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·00	12·11	11·30	10·56	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·87	12·85	11·94	11·12	10·38	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

End of Question Paper

Answers

Section A

1   C

2   A

3   C

	(litres) Normal loss	Actual loss	Abnormal loss	Abnormal gain
Process F	5,200	6,100	900	–
Process G	1,875	1,800	–	75

4   B
Marginal costing profit:
(36,000 – (2,000*(63,000/14,000))
$27,000

5   C

6   B

7   B
Budgeted production (19,000 + 3,000 – 4,000) = 18,000 units
RM required for production (18,000*8) = 144,000 kg
RM purchases (144,000 + 53,000 – 50,000) = 147,000 kg

8   D

9   B

10 B

11 A
(36,000 + (200,000 x 12%))/200,000 = 30%

12 C

13 D
Sales volume variance:
(budgeted sales units – actual sales units) * standard profit per unit = 10,000 adverse
Standard profit on actual sales: (actual sales units * std profit per unit) = $120,000
Fixed budget profit: (120,000 +10,000) = $130,000

14 A

15 B

16 C

17 A
Variable production cost per unit = (15,120 – 11,280)/(10,000– 6,000) = 3,840/4,000 = $0·96
Fixed cost = 11,280 – (6,000 x 0·96) = $5,520
85% capacity = 8,500 units.
Flexible budget allowance for 8,500 units = $5,520 + (8,500 x 0·96) = $13,680

18 C
At 13% NPV should be –10
Using interpolation: 10% + (50/60)(10% – 13%) = 12·5%

19 D

Direct cost	$95,000
Proportion of cost centre X (46,000 + (0·10*30,000))*0·50	$24,500
Proportion of cost centre Y (30,000*0·3)	$9,000
Total overhead cost for P	$128,500

20 D

21 A

1,700 units*10	$17,000
300 units*0·4*10	$1,200
Opening work in progress value	$1,710
Total value	$19,910

22 A
(Actual hours – Budgeted hours) * standard rate
(24,000 – 25,000)*5 = $5,000 adverse

23 A

24 B

25 C

Month 1: production >sales	Absorption costing > marginal costing
Month 2: sales> production	marginal costing profit> absorption costing profit

A and C satisfy month 1, C and D satisfy month 2; therefore C satisfies both

26 B

27 D
Cost per equivalent unit (480,000/10,000) = $48
Degree of completion= ((144,000/48)/4,000) = 75%

28 C

29 D
200 units*(3/60)*18 = $180

30 A

Actual cost	$108,875
Absorbed cost	$105,000
Under absorbed	$3,875

31 B

32 C
Total number of degrees $= 360$
Proportion of market 3 sales: $(50,000/300,000) = 0.1666 = 0.17$
$0.17*360 = 61$

33 C

34 C
$\{(2*20*(4*20,000))/(0.06*25)\}^{0.5}$
1,461 units

35 C
Joint costs apportioned to H: $((330,000/(420,000 + 330,000))*350,000 = \$154,000$
Closing inventory valuation(HH): $(30,000/330,000)*(154,000 + 66,000) = \$20,000$

Section B

1 (a) (i) relevant

(ii) irrelevant

(iii) relevant

(iv) relevant

(v) irrelevant

(b) (i) Increase in sales $= (\$11m - \$10m) = \$1m$

Increase due to the project $= (\$1m - \$0.2m) = \$800,000$

(ii) Sales in year $1 = \$11m$

Sales in year 2 $= (\$11m*0.05) + \$11m = \$11,550,000$

(iii) Total sales in year 1 $= \$11m$

Savings $(\$11m*0.01) = \$110,000$

(iv) Annuity factor for five years at $10\% = 3.791$

Present value $(\$75,000*3.791) = \$284,325$

(c) B

2 (a) C

(b) (i) A

(ii) Sales volume variance:

Budgeted to sale 25,000 units but sold 25,600 units
$(25,600 - 25,000)*\$28$
$\$16,800$ favourable

(iii) Sales price variance:

Budgeted to sale at \$120 per unit $(25,600*\$120) = \$3,072,000$
Actual sales were \$3,066,880
Variance $(\$3,066,880 - \$3,072,000) = \$5,120$ adverse

(c) A and C

3 (a) (i) Profit before interest and tax/Capital employed:
$\$48m \div \$192m = 25\%$

(ii) Profit before interest and tax/Sales revenue:
$48m ÷ $480m = 10%

(iii) Sales revenue/capital employed = $480m ÷ 192m = 2·5

(iv) Average number of telephones unrepaired at the end of each day/Number of telephones returned for repair:
(804 ÷ 10,000)*365 days = 29·3 days

(b) **(i)** Percentage of customers lost per annum = number of customers lost ÷ total number of customers x 100% = 117,600 ÷ 1,960,000 = 6%

(ii) Percentage of sales attributable to new products = Sales attributable to new products/total sales x 100% = $8m ÷ $480m = 1·67%

(c) **Gap 1**   B

Gap 2   C