# Management Accounting

Pilot Paper from December 2011 onwards

**Paper F2**

**Time allowed:** 2 hours

ALL 50 questions are compulsory and MUST be attempted.

**Formulae Sheet, Present Value and Annuity Tables are on pages 16, 17 and 18**

**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**

**ALL 50 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

2

**5** A company has a budgeted material cost of $125,000 for the production of 25,000 units per month. Each unit is budgeted to use 2 kg of material. The standard cost of material is $2·50 per kg. Actual materials in the month cost $136,000 for 27,000 units and 53,000 kg were purchased and used.

**What was the adverse material price variance?**

**A** $1,000
**B** $3,500
**C** $7,500
**D** $11,000

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

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

**7** The following statements refer to spreadsheets:

(1) A spreadsheet is the most suitable software for the storage of large volume of data
(2) A spreadsheet could be used to produce a flexible budget
(3) Most spreadsheets contain a facility to display the data within them in a graphical form

**Which of these statements are correct?**

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

**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?**
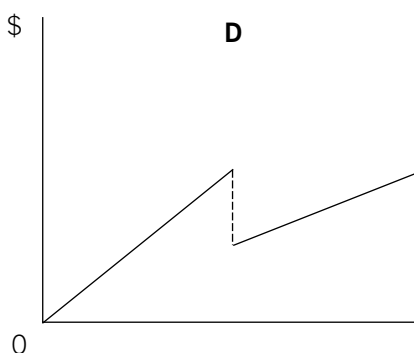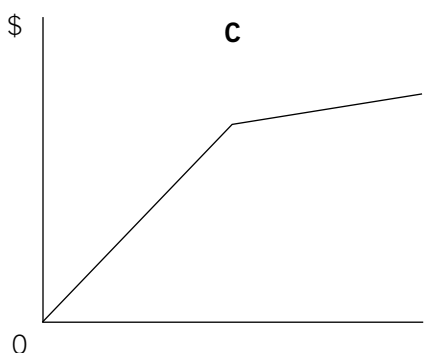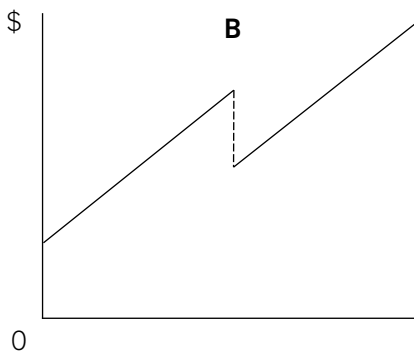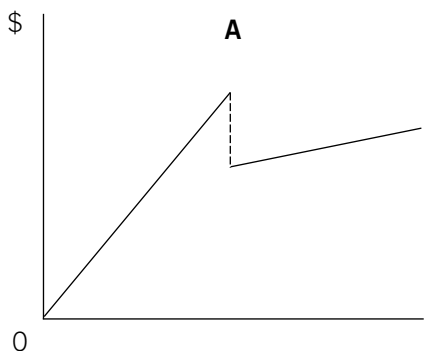


**A** Graph A
**B** Graph B
**C** Graph C
**D** Graph D

**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 An organisation has the following total costs at two activity levels:

| Activity level (units) | 16,000 | 22,000 |
|---|---|---|
| Total costs ($) | 135,000 | 170,000 |

Variable costs per unit is constant within this range of activity but there is a step up of $5,000 in the total fixed costs when the activity exceeds 17,500 units.

**What is the total cost at an activity level of 20,000 units?**

A  $163,320
B  $158,320
C  $160,000
D  $154,545


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

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 **Which of the following BEST describes a principle budget factor?**

**A**    A factor that affects all budget centres
**B**    A factor that is controllable by a budget centre manager
**C**    A factor that the management accountant builds into all budgets
**D**    A factor which limits the activities of an organisation

**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
(4) It is applicable to both physical products and services

**Which TWO of the above statements are true?**

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

**24**

Net present value
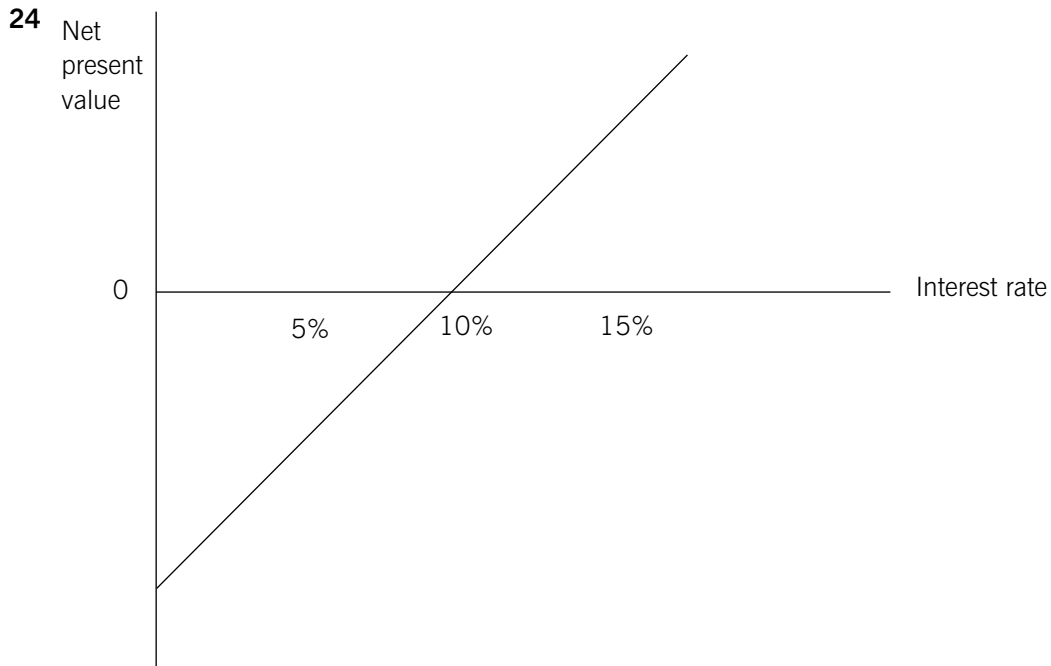


**Which of the following is correct with regard to the above graph?**

(1)  The IRR is 10%
(2)  The NPV at 15% is positive
(3)  The project's total inflows exceed the total outflows

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

**25**  A company uses standard absorption costing. The following data relate to last month:

|  | Budget | Actual |
|---|---|---|
| Sales and production (units) | 1,000 | 900 |
|  | Standard ($) | Actual ($) |
| Selling price per unit | 50 | 52 |
| Total production cost per unit | 39 | 40 |

**What was the adverse sales volume profit variance last month?**

**A**  $1,000
**B**  $1,100
**C**  $1,200
**D**  $1,300

**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** Mr Manaton has recently won a competition where he has the choice between receiving $5,000 now or an annual amount forever starting now (i.e. a level perpetuity starting immediately). The interest rate is 8% per annum.

**What would be the value of the annual perpetuity to the nearest $?**

**A**  $370
**B**  $500
**C**  $400
**D**  $620


**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

**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?**

**A** 17 degrees
**B** 50 degrees
**C** 60 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 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

**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

**36 Which TWO of the following are true for flexible budgets?**

(1) A budget which is continually updated to reflect actual results
(2) A budget which has built in contingency to allow for unforeseen events
(3) A budget which identifies the cost behaviour of different cost items
(4) A budget which allows comparison of like with like

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

**37** 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 |

**38** A company wishes to evaluate a division which has the following extracts from income statement and statement of financial position.

Income statement:

|  | $'000 |
|---|---|
| Sales | 500 |
| Gross profit | 200 |
| Net profit | 120 |

Statement of financial position:

|  | $'000 |
|---|---|
| Non current assets | 750 |
| Current assets | 350 |
| Current liabilities | (450) |
| Net assets | 650 |

**What is the residual income for the division if the company has a cost of capital of 18%?**

**A** $117,000
**B** $21,600
**C** $83,000
**D** $3,000

**39 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

**40** A firm uses marginal costing. The following table shows the variances for a period when the actual net profit was $30,000.

| Materials | $300 adverse |
|---|---|
| Labour | $800 favourable |
| Overheads | $550 adverse |
| Sales price variance | $400 favourable |
| Sales volume contribution variance | $800 favourable |

**What was the budgeted net profit for the period?**

**A** $28,850
**B** $31,150
**C** $30,050
**D** $28,800

**41** The use of the balanced scorecard rather than a profit-based measure is likely to help solve the following problems:

(1)  Subjectivity
(2)  Short-termism

**Which is/are true?**

**A** 1 only
**B** 2 only
**C** Both 1 and 2
**D** Neither 1 nor 2

**42** 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%

**43** 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

**44** 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

**45** The following statements relate to responsibility centres:

(1) Return on capital employed is a suitable measure of performance in both profit and investment centres.
(2) Cost centres are found in manufacturing organisations but not in service organisations.
(3) The manager of a revenue centre is responsible for both sales and costs in a part of an organisation.

**Which of the statements, if any, is true?**

**A** 1 only
**B** 2 only
**C** 3 only
**D** None of them


**46** 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


**47** 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


**48** The following statements relate to performance evaluation methods:

(1) Residual income is not a relative measure
(2) The return on investment figure is a relative measure
(3) Residual income cannot be calculated for an individual project

**Which of the above are correct?**

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

**49** A company has a budget for two products A and B as follows:

|  | Product A | Product B |
| --- | --- | --- |
| Sales (units) | 2,000 | 4,500 |
| Production (units) | 1,750 | 5,000 |
| Skilled labour at $10/hour | 2 hours/unit | 2 hours/unit |
| Unskilled labour at $7/hour | 3 hours/unit | 4 hours/unit |

**What is the budgeted cost of unskilled labour for the period?**

**A** $105,000
**B** $135,000
**C** $176,750
**D** $252,500


**50 Which TWO of the following are MOST likely to influence the motivation of budget holders?**

(1) The contents of the budget manual
(2) The extent of participation in budget setting
(3) The level of difficulty at which budgets are set
(4) the structure of the budget committee

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

[P.T.O.

**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

**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   B**

| | |
|---|---|
| Did cost: | $136,000 |
| Should cost: (53,000 kg $2·50) | $132,500 |
| Price variance: | $3,500 |

**6   B**

**7   C**

**8   D**

**9   B**

**10  B**

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

**12  C**

**13  C**
Using high low method:
Variable cost
(170,000 – 5,000 – 135,000)/(22,000 – 16,000) = $5
Fixed cost:
135,000 – (16,000*5) = 55,000
Cost for 20,000 units:
(20,000*5) + (55,000 + 5,000) = $160,000

**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**

**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 A**

(**Note:** *The graph is showing NPV is rising as interest rate rises because the project may have unusual cash flow patterns such as inflows followed by a series of outflows*)

**25 B**

(budgeted quantity – actual quantity) * standard profit per unit
(1,000 – 900)*(50 – 39) = $1,100

**26 B**

**27 A**

5,000 = x + x/·08
5,000 = 13·5 x
Value of annual perpetuity = 5,000/13·5 = $370

**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)*360 = 60


**33  C**


**34  C**


**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


**36  D**


**37  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


**38  D**
($120,000 – ($650,000*18%) = $3,000


**39  B**


**40  A**
(30,000 + 300 – 800 + 550 – 400 – 800) = $28,850


**41  B**


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


**43  C**
$\{(2*20*(4*20,000))/(0{\cdot}06*25)\}^{0{\cdot}5}$
1,461 units


**44  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 |


**45  D**


**46  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

**47  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

**48  A**

**49  C**
(($1,750*3 hrs) + ($5,000*4 hrs))*7 = $176,750

**50  B**