CIMA P1 Management Accounting

Mock exam: 60 questions in 90 minutes, with an answer key and explanations

How to use this mock

- Set a timer for **90 minutes** and answer every question without notes. Write your answers in the grid on the next page.
- Mark your answers using the answer key, then read the explanation for every question you got wrong or guessed.
- The questions cover every section of the syllabus, in proportion to the GoQualified question bank for P1.
- Prefer to sit it on screen? The **Exam Sim** on **goqualified.co.uk/cima/p1/** times you, marks the paper and shows your weakest section.
- All questions are original GoQualified practice questions, not past exam questions.

Free from GoQualified. Questions start on page 3; the answer key and explanations follow them. Download the latest version from goqualified.co.uk/cima/p1/.

Your answers

1 _____	13 _____	25 _____	37 _____	49 _____
2 _____	14 _____	26 _____	38 _____	50 _____
3 _____	15 _____	27 _____	39 _____	51 _____
4 _____	16 _____	28 _____	40 _____	52 _____
5 _____	17 _____	29 _____	41 _____	53 _____
6 _____	18 _____	30 _____	42 _____	54 _____
7 _____	19 _____	31 _____	43 _____	55 _____
8 _____	20 _____	32 _____	44 _____	56 _____
9 _____	21 _____	33 _____	45 _____	57 _____
10 _____	22 _____	34 _____	46 _____	58 _____
11 _____	23 _____	35 _____	47 _____	59 _____
12 _____	24 _____	36 _____	48 _____	60 _____

Questions

Question 1

Overheads are absorbed at £8 per machine hour, based on budgeted overheads of £240,000 and budgeted activity of 30,000 machine hours. During the period, 32,000 machine hours were worked and actual overheads incurred were £252,000. What is the over- or under-absorption?

A £16,000 over-absorbed
B £4,000 under-absorbed
C £4,000 over-absorbed
D £12,000 under-absorbed

Question 2

In a period where production exceeds sales, which of the following correctly describes the relationship between absorption costing profit and marginal costing profit?

A Absorption costing profit is lower than marginal costing profit
B Absorption costing profit equals marginal costing profit
C The relationship depends on the fixed overhead absorption rate only
D Absorption costing profit is higher than marginal costing profit

Question 3

The cost of quality framework classifies quality-related costs into four categories. Which of the following correctly lists them?

A Prevention costs, appraisal costs, internal failure costs, and external failure costs
B Fixed costs, variable costs, direct costs, and indirect costs
C Standard costs, actual costs, budgeted costs, and flexed costs
D Product costs, period costs, sunk costs, and opportunity costs

Question 4

A process has an input of 500 kg. Normal loss is expected to be 10% of input. Actual output is 420 kg. How many kilograms of abnormal loss occurred?

A 80 kg
B 45 kg
C 30 kg
D 100 kg

Question 5

A process has input costs of £8,000 and a normal loss of 20% of input (1,000 litres). There is no scrap value. What is the cost per litre of expected output?

A £8.00
B £10.00
C £12.50
D £6.40

Question 6

A hotel incurs total costs of £450,000 in a month. The hotel has 200 rooms available for 30 nights, but only 75% of rooms are occupied on average. What is the cost per occupied room-night?

A £75.00
B £60.00
C £90.00
D £100.00

Question 7

Life cycle costing differs from traditional period-based costing primarily because it:

A Focuses only on manufacturing costs and ignores the design and disposal phases entirely
B Accumulates costs across a product's entire life — design through disposal — for total profitability
C Applies only to products with a very short expected market life span
D Reduces costs by eliminating the research and development phase

Question 8

At output of 10,000 units, total cost is £85,000. At output of 6,000 units, total cost is £61,000. Using the high-low method, what is the estimated total cost at 8,000 units?

A £63,000
B £80,000
C £77,000
D £73,000

Question 9

A process has 2,000 kg input. Normal loss is 10% of input, with scrap value of £2 per kg. Actual output is 1,900 kg. What is the abnormal gain?

A 1,900 kg
B 200 kg
C 50 kg
D 100 kg

Question 10

In throughput accounting, the 'bottleneck' resource is:

A The process or resource that currently operates most efficiently overall
B The resource with the highest cost per unit
C The constraint that limits the rate at which the organisation can generate throughput
D The department that simply has the most employees working within it

Question 11

A manufacturer identifies a batch of units as defective during its final inspection, before any of the batch is despatched to customers, and reworks them to bring them up to specification. Under the cost of quality framework, how should the cost of this rework be classified?

A Prevention cost
B Appraisal cost
C Internal failure cost
D External failure cost

Question 12

A product has a selling price of £80, material cost of £32 (the only truly variable cost), and uses 2 hours of the bottleneck resource. Total factory costs are £240,000 per period, and total bottleneck hours available are 8,000. What is the TPAR?

A 0.80
B 1.60
C 1.20
D 2.00

Question 13

As production volume increases within the relevant range, what happens to fixed cost per unit?

A It increases
B It decreases
C It remains constant
D It becomes variable

Question 14

Target costing is typically applied:

A After a product has already been launched and is in full-scale production
B Only when the company cannot achieve its originally targeted profit margin
C At the design stage, before production begins, when cost-reduction opportunities are greatest
D Only to service businesses, not manufacturing companies

Question 15

Which of the following is a challenge specific to costing digital products (such as software or e-books)?

A Digital products always require very high direct material costs
B The marginal cost of an additional digital copy is near zero, making cost-based pricing difficult
C Digital products cannot be sold internationally due to licensing restrictions
D All digital products have identical production processes, making costing straightforward

Question 16

The 'relevant range' in cost accounting refers to:

A The output range over which fixed and unit variable cost assumptions are likely to hold true
B The range of products the company has chosen to manufacture and sell
C The range of selling prices that management considers acceptable
D The timeframe over which costs can be controlled by management action

Question 17

Which of the following is the most appropriate cost unit for a haulage company?

A Cost per employee working within the transport department
B Cost per kilogram-kilometre (or tonne-kilometre)
C Cost per invoice raised for billing customers
D Cost per customer complaint

Question 18

Value engineering, used within target costing, involves:

A Increasing the number of product features specifically to justify charging a higher price
B Increasing production volume substantially to spread the fixed costs more widely
C Analysing each component to achieve the required function at lower cost, without reducing perceived quality
D Outsourcing all production to reduce manufacturing costs immediately

Question 19

Budgeted fixed overhead is £60,000. Actual fixed overhead incurred is £63,500. What is the fixed overhead expenditure variance?

A £63,500 adverse
B £3,500 favourable
C £3,500 adverse
D £3,000 adverse

Question 20

Variable overhead is absorbed at £3 per machine hour. Actual machine hours worked were 5,000 and actual variable overhead incurred was £14,800. What is the variable overhead expenditure variance?

A £14,800 adverse
B £200 adverse
C £1,200 adverse
D £200 favourable

Question 21

The standard selling price is £30 per unit. During the period 3,000 units were sold at a total revenue of £87,000. What is the sales price variance?

A £3,000 adverse
B £3,000 favourable
C £1,500 adverse
D £90,000 adverse

Question 22

An 'ideal standard' in standard costing is:

A A standard based on current, expected levels of efficiency including normal wastage and idle time
B A standard based on historical average performance over recent periods
C A standard based on perfect operating conditions with no wastage, no idle time and no inefficiency
D A standard that is set once and never revised

Question 23

A job has a standard mix of 1,000 total labour hours (500 skilled at £16, 500 unskilled at £8, standard cost £12,000), which is expected to produce 1,000 units of output (one standard hour per unit). During the period, 1,020 total hours were actually worked, and actual output was 980 units. What is the labour yield variance for the period?

A £480 Favourable
B £240 Adverse
C £40 Adverse
D £480 Adverse

Question 24

Planning and operational variances split the total variance into two parts. The planning variance is:

A The variance caused specifically by the management team's own operational decisions during the period
B The difference between actual results and the revised (updated) standard
C The variance reported specifically to external shareholders within the published financial statements
D Difference between the original standard and a revised standard, reflecting uncontrollable external conditions

Question 25

A participative (bottom-up) approach to budgeting is one where:

A The board sets all budgets without consulting operational managers
B All budgets are prepared by external consultants
C Operational managers help set their own budgets, which are then reviewed and coordinated centrally
D Budgets are set to be impossible to achieve to motivate managers to try harder

Question 26

When a company sells two or more products, the sales volume variance can be further split into a sales mix variance and a sales quantity variance. The sales mix variance measures:

A Whether total actual sales exceeded or fell short of budgeted total sales
B Whether the actual sales mix differs from budget, valued at standard contribution per unit
C Whether sales prices differed from standard across the product range
D The volume variance in units for the highest-selling product

Question 27

A responsibility centre is defined as:

A A part of the organisation for which a manager is held responsible for specific financial performance measures
B Any department within the organisation that happens to have more than 10 staff members
C A centre that is always measured on profit regardless of its actual activities
D The head office of a multinational company

Question 28

The production budget requires 24,000 kg of material. Opening material inventory is 2,000 kg and the company plans to hold closing material inventory of 3,500 kg. How many kg should be budgeted for purchase?

A 22,500 kg
B 25,500 kg
C 24,000 kg
D 20,500 kg

Question 29

A job uses skilled and unskilled labour in a standard mix of 50:50 by hours. Standard rates are £16/hour (skilled) and £8/hour (unskilled). During the period, 1,020 total hours were actually worked: 480 skilled hours and 540 unskilled hours. What is the total labour mix variance for the period?

A £240 Adverse
B £480 Favourable
C £30 Favourable
D £240 Favourable

Question 30

A company's material mix variance for the period was £60 Adverse and its material yield variance was £230 Adverse, giving a total material usage variance of £290 Adverse. Which interpretation of this combined result is correct?

A The two variances always move in the same direction, so this result is unremarkable and requires no further investigation
B Since both variances are adverse, the yield variance must have been calculated incorrectly, as they should always offset each other
C The total usage variance is irrelevant once mix and yield have been calculated separately, and should not be reported
D The variances sum to the usage variance as expected; both the shift to more expensive materials and a yield shortfall contributed, and each should be investigated separately as they may have different causes

Question 31

An organisation's payroll shows gross wages of £400,000. Employee's national insurance is £30,000 and income tax deducted is £80,000. Employer's national insurance is £45,000. What is the total employment cost to the employer?

A £400,000
B £445,000
C £290,000
D £555,000

Question 32

Management uses a control limit of ±5% of standard cost to decide whether to investigate a variance. If the standard cost is £80,000 and the actual cost is £86,000, should the variance be investigated?

A No — the adverse variance of £6,000 falls below the agreed control limit for investigation
B No — only favourable variances are ever investigated under this company's policy
C Yes — the adverse variance of £6,000 represents 7.5% of standard, exceeding the 5% control limit
D Yes — all adverse variances must always be investigated regardless of their size or cause

Question 33

Incremental budgeting is best described as:

A Starting from zero and justifying every item of expenditure from scratch
B Taking the current budget as a base and adjusting by a percentage or amount for next period
C Producing a new budget whenever significant changes in conditions occur
D Basing the budget on activity levels performed rather than on traditional departments

Question 34

A product has a selling price of £40 and a variable cost of £24. What is the contribution to sales (C/S) ratio?

A 150%
B 60%
C 67%
D 40%

Question 35

A company spent £50,000 on market research for a new product six months ago. When deciding whether to launch the product, this £50,000 should be:

A Ignored, because it is a sunk cost that has already been incurred and cannot be recovered
B Deducted from expected revenues to reduce the apparent attractiveness of the project
C Added to the launch costs as it is directly related to the project
D Treated as a future cost that will be incurred again if the project is launched

Question 36

A component can be made internally at a variable cost of £14 per unit. A supplier offers to sell the same component for £19 per unit. The company has spare capacity and all fixed costs will be incurred regardless. On financial grounds, what should the company do?

A Buy from the supplier, as the external price is lower
B Be indifferent between making and buying, as the fixed costs are the same either way
C Make internally, since the relevant cost (£14) is less than the buy-in price (£19)
D Buy externally, to avoid the risk of any internal production quality errors

Question 37

Budgeted sales are 12,000 units and the breakeven point is 8,400 units. What is the margin of safety expressed as a percentage of budgeted sales?

A 30%
B 70%
C 42%
D 70,000 units

Question 38

A company launches an innovative new technology product with significant first-mover advantage and targets early adopters willing to pay a premium. Which pricing strategy is most appropriate?

A Penetration pricing
B Market skimming pricing
C Cost-plus pricing
D Marginal cost pricing

Question 39

A company has 500 kg of material in stock, originally purchased for £3/kg. It has no other use and cannot be resold. The current purchase price is £5/kg. A contract requires 800 kg. What is the relevant cost of the 500 kg already in stock?

A £2,500 (at current purchase price)
B £0 (nil, as the material has no alternative use and no resale value)
C £1,500 at the original historical cost, ignoring current relevance
D £750, calculated at 50% of the original cost as a compromise figure

Question 40

Setting a price equal to the marginal (variable) cost of a product means that the company:

A Makes zero contribution to fixed costs and profit on that product
B Covers all costs, including fixed overheads, at this specific selling price
C Maximises its profit on that particular product line specifically
D Always wins the contract when competing on price

Question 41

A company has a demand curve: Price = £100 − 0.5Q. Variable cost per unit is £20. To maximise profit, the company should set a price where:

A Price matches the highest price found in a competitor survey, at £80
B Price equals £20 (variable cost)
C Marginal cost equals marginal revenue, giving a price of £60
D Price is set at the midpoint of the demand curve at £50

Question 42

A machine was purchased 2 years ago for £50,000 and has a current carrying amount of £30,000. Its current resale value is £18,000. The machine will be needed to fulfil a special order. What is the relevant cost of using the machine for the order?

A £50,000, the original historical cost of the asset when purchased
B £30,000, the current carrying amount shown in the accounts
C Zero (it is already owned)
D £18,000 (current resale value — the opportunity cost)

Question 43

A company operates in a highly competitive commodity market where its products are indistinguishable from those of competitors. What pricing approach is most appropriate?

A Full cost-plus pricing ignoring competitor prices
B Market skimming pricing
C Pricing at or near the market price (price-taker behaviour)
D Price discrimination between customer segments

Question 44

A company has already spent £15,000 developing a new component internally. It can now either complete the component for a further £8,000 in variable costs (no fixed costs avoidable) or buy it externally for £10,000. What is the relevant cost of completing internally?

A £23,000 (£15,000 + £8,000)
B £8,000 (future variable cost only)
C £10,000 (external price)
D £7,000 (£15,000 − £8,000)

Question 45

Price discrimination occurs when a company:

A Charges all customers the same price regardless of their willingness to pay
B Sets prices based purely on full cost plus a fixed percentage mark-up
C Charges different prices to different segments for the same product, based on willingness to pay
D Reduces its price to match the lowest competitor in the market

Question 46

A company employs contract workers at £15/hour who can be released at no cost. A special order requires 300 hours of their time. There is currently no spare capacity, so accepting the order would displace work earning £6/hour contribution. What is the relevant labour cost per hour for the special order?

A £15
B £6
C £21
D £9

Question 47

On a traditional breakeven chart, which of the following correctly identifies the profit zone?

A The area where the total cost line is above the total revenue line
B The area where fixed costs exceed variable costs
C The area to the left of the breakeven point
D The area where the total revenue line is above the total cost line

Question 48

A product currently sells 2,000 units at £50. Research suggests that a price increase to £55 would reduce demand to 1,700 units. What happens to total revenue?

A Revenue falls from £100,000 to £93,500
B Revenue rises from £100,000 to £93,500
C Revenue is unchanged at £100,000
D Revenue rises from £100,000 to £110,000

Question 49

Two suppliers are assessed on three criteria. Price (weight 50%): Supplier A scores 8, B scores 6. Quality (weight 30%): A scores 5, B scores 9. Delivery (weight 20%): A scores 7, B scores 8. Which supplier has the higher weighted score?

A Supplier A with a score of 7.1
B Supplier A with a score of 6.9
C Supplier B with a score of 7.3
D Supplier B with a score of 7.1

Question 50

A company uses full absorption cost plus 20% mark-up to set prices. Its fixed overhead absorption rate is £10/unit based on budgeted production of 10,000 units. Actual production is 8,000 units. The price set using full cost plus will be:

A Too low to recover fixed overhead if actual volume is below budget
B Unchanged from the budgeted price, regardless of actual volume
C Too high if the full absorption cost is recalculated at actual volume, causing the company to price itself out of the market
D Based on marginal cost rather than full cost

Question 51

Relevant cost analysis provides a financial basis for decisions. Which of the following non-financial factors is also important in a make-or-buy decision?

A The standard cost of the component
B The reliability and quality of the external supplier
C The overhead absorption rate applied to the component
D The fixed cost per unit of making the component

Question 52

In decision theory, the key difference between risk and uncertainty is that:

A Risk is always considered a bad thing, while uncertainty may turn out to be either good or bad
B Risk only applies to purely financial decisions; uncertainty applies to all other decisions
C Under risk, probabilities of each outcome can be estimated; under uncertainty, they cannot meaningfully be assigned
D Under uncertainty specifically, the decision maker can insure against every single possible loss

Question 53

In a decision tree, what do square nodes (boxes) and circular nodes (circles) represent respectively?

A Squares represent probability nodes where chance decides; circles represent decision nodes where a choice is made
B Squares represent decision points where the decision maker chooses; circles represent chance nodes where probability decides
C Both represent the same type of node — the shape is purely aesthetic
D Squares represent costs incurred; circles represent revenues generated by the decision

Question 54

A decision tree shows: Project X leads to a chance node with outcomes £80,000 (prob 0.6) and £20,000 (prob 0.4). Project Y gives a certain outcome of £55,000. Which project should be chosen, and what is its expected value?

A Project Y; £55,000
B Project Y; £48,000
C Project X; £50,000
D Project X; £56,000

Question 55

Without additional information, a company chooses Project A with an expected value of £40,000. With perfect information, it would choose the best project in each state: good market (prob 0.6): best outcome £60,000; poor market (prob 0.4): best outcome £27,500. What is the expected value of perfect information (EVPI)?

A £7,000
B £47,000
C £20,000
D £3,000

Question 56

A project has an NPV of £20,000. The present value of the variable cost cash flows is £100,000. By what percentage would variable costs need to increase before the project becomes unviable?

A 5%
B 20%
C 10%
D 25%

Question 57

Simulation models (such as Monte Carlo simulation) are used in decision making under uncertainty because they:

A Guarantee the correct answer by testing every single possible combination exhaustively
B Eliminate all risk from the decision entirely, regardless of the variables involved
C Model the simultaneous effect of uncertainty across multiple variables, producing a probability distribution of outcomes
D Apply only where exact probability distributions are unknown for all variables

Question 58

A risk-averse decision maker, when faced with two options of equal expected value, will typically:

A Choose the option with the higher variance of possible outcomes
B Be indifferent between the two options
C Choose the option with the lower variance (less risky) of possible outcomes
D Always choose the option with the highest possible payoff

Question 59

A project is most sensitive to changes in which variable?

A The variable whose absolute pound value happens to be highest overall
B The variable for which the sensitivity percentage is highest
C The variable that management finds easiest to control operationally
D The variable with the lowest sensitivity percentage, where a small change makes the project unviable

Question 60

In Monte Carlo simulation, each 'run' of the model involves:

A Randomly selecting a value for each uncertain variable from its distribution and calculating the outcome
B Using the most likely value for every variable simultaneously
C Using only the best-case values for every uncertain variable simultaneously
D Calculating the expected value of each variable and using those to compute the outcome

Answer key

1 C	**13** B	**25** C	**37** A	**49** C
2 D	**14** C	**26** B	**38** B	**50** A
3 A	**15** B	**27** A	**39** B	**51** B
4 C	**16** A	**28** B	**40** A	**52** C
5 B	**17** B	**29** D	**41** C	**53** B
6 D	**18** C	**30** D	**42** D	**54** D
7 B	**19** C	**31** B	**43** C	**55** A
8 D	**20** D	**32** C	**44** B	**56** B
9 D	**21** A	**33** B	**45** C	**57** C
10 C	**22** C	**34** D	**46** C	**58** C
11 C	**23** D	**35** A	**47** D	**59** D
12 A	**24** D	**36** C	**48** A	**60** A

Score: count your correct answers out of 60. Then work through the explanations below.

Answers and explanations

Question 1: C £4,000 over-absorbed

Overhead absorbed = 32,000 hours × £8 = £256,000. Actual overhead incurred = £252,000. Since absorbed (£256,000) exceeds actual (£252,000), the difference of £4,000 is over-absorbed (option C). Option B has the correct amount but the wrong direction. Option A (£16,000) compares absorbed overhead with budgeted overhead (£256,000 − £240,000), which is only the volume effect of working more hours than budgeted. Option D (£12,000) compares actual overhead with budgeted overhead (£252,000 − £240,000), which is only the expenditure effect. The over-absorption is the net of the two: £16,000 over less £12,000 under = £4,000 over.

Section A, Over-absorption of overhead · Ref A2 · p1003

Question 2: D Absorption costing profit is higher than marginal costing profit

When production exceeds sales, closing inventory is higher than opening inventory. Under absorption costing, some of the fixed overhead is carried forward in closing inventory, deferring that cost to a future period and increasing the current period's reported profit. Under marginal costing, all fixed overhead is charged to the period regardless of inventory levels, giving a lower profit. The difference equals the inventory increase in units multiplied by the fixed overhead per unit.

Section A, Marginal vs absorption costing — profit difference · Ref A1 · p1004

Question 3: A Prevention costs, appraisal costs, internal failure costs, and external failure costs

The cost of quality framework splits quality-related costs into four categories: prevention costs (spent to stop defects occurring in the first place — e.g. quality training, supplier vetting, process design), appraisal costs (spent checking whether output conforms to requirements — e.g. inspection and testing), internal failure costs (arising when defects are found before the product reaches the customer — e.g. rework, scrap), and external failure costs (arising when defects are found after the product reaches the customer — e.g. warranty claims, returns, reputational damage). The other groupings listed are genuine cost classifications used elsewhere in management accounting, but they are not the cost of quality categories.

Section A, Quality costing — the four cost categories · Ref A4 · p1006

Question 4: C 30 kg

Expected output = input − normal loss = 500 − (10% × 500) = 500 − 50 = 450 kg. Abnormal loss = expected output − actual output = 450 − 420 = 30 kg. The 80 kg figure is the total difference between input and actual output (500 − 420), which mistakes all process loss for abnormal loss rather than distinguishing between normal and abnormal. The normal loss (50 kg) is expected and not treated as abnormal; only the excess over expected represents the abnormal element. 45 kg wrongly calculates the normal loss on expected output (10% × 450 kg) and treats that as the abnormal loss, and 100 kg does not follow from the figures.

Section A, Process costing — abnormal loss · Ref A3 · p1007

Question 5: B £10.00

Expected output = 1,000 − (20% × 1,000) = 1,000 − 200 = 800 litres. Cost per litre of expected output = total input cost ÷ expected output = £8,000 ÷ 800 = £10.00. The £8.00 figure divides total cost by total input (1,000 litres), ignoring the normal loss. When there is no scrap value, the normal loss has no monetary value and its cost falls on the expected output, raising the cost per unit compared with the raw cost per input unit. £6.40 deducts 20% from the cost per litre of input, and £12.50 applies the 20% loss twice (£8,000 ÷ 640).

Section A, Process costing — cost per unit · Ref A3 · p1026

Question 6: D £100.00

Occupied room-nights = 200 rooms × 30 nights × 75% = 4,500 room-nights. Cost per occupied room-night = £450,000 ÷ 4,500 = £100.00. The £75.00 figure uses total available room-nights (200 × 30 = 6,000), ignoring the occupancy rate. Service costing uses composite cost units that reflect both capacity and usage; the occupied room-night captures actual usage, making it the most relevant denominator for cost control. £60.00 and £90.00 do not follow from the room-night figures.

Section A, Service costing — cost per unit · Ref A3 · p1028

Question 7: B Accumulates costs across a product's entire life — design through disposal — for total profitability

Life cycle costing accumulates all costs associated with a product from inception (research, design, development) through production, marketing and distribution to end-of-life and disposal. Traditional period costing charges costs in the period incurred, making it difficult to assess the total profitability of a product across its full life. Life cycle costing does not ignore phases or eliminate R&D — it specifically captures those early costs, which can be significant, and matches them against the revenues they ultimately generate.

Section A, Life cycle costing · Ref A4 · p1030

Question 8: D £73,000

Variable cost per unit = (£85,000 − £61,000) ÷ (10,000 − 6,000) = £24,000 ÷ 4,000 = £6. Fixed cost = £85,000 − (10,000 × £6) = £85,000 − £60,000 = £25,000. Total cost at 8,000 units = £25,000 + (8,000 × £6) = £25,000 + £48,000 = £73,000. £63,000, £77,000 and £80,000 do not follow from the £6 variable cost and £25,000 fixed cost. As a check, 8,000 units lies halfway between the two activity levels, and £73,000 lies halfway between the two totals. The high-low method uses only the highest and lowest activity levels to separate fixed and variable elements.

Section A, Semi-variable costs — high-low method · Ref A1 · p1032

Question 9: D 100 kg

Expected output = 2,000 − (10% × 2,000) = 2,000 − 200 = 1,800 kg. Since actual output (1,900 kg) exceeds expected output (1,800 kg), there is an abnormal gain of 1,900 − 1,800 = 100 kg. Abnormal gain is the opposite of abnormal loss. It is credited to the process account at the standard cost per unit and effectively reduces the cost charged to normal output. The 200 kg is the normal loss, not the abnormal gain. 50 kg does not follow from the figures, and 1,900 kg is the actual output.

Section A, Process costing — abnormal gain · Ref A3 · p1052

Question 10: C The constraint that limits the rate at which the organisation can generate throughput

A bottleneck is the constraining resource — the process or machine that restricts the maximum rate at which the whole system can generate output and therefore throughput. Throughput accounting focuses on maximising throughput through the bottleneck, because all other processes are paced by the bottleneck. Efficiency, cost and headcount are not the defining characteristics. Improving any non-bottleneck process does not increase the organisation's total throughput unless the bottleneck itself is addressed.

Section A, Throughput accounting — identifying the bottleneck · Ref A4 · p1055

Question 11: C Internal failure cost

Because the defect was identified and corrected before the goods left the company — i.e. before any customer was affected — this is an internal failure cost: a cost arising from a failure to meet quality requirements that is caught internally. Prevention costs are incurred to stop defects arising in the first place (this rework happens after a defect has already occurred, so it isn't prevention). Appraisal cost would be the cost of the inspection that found the fault, not the cost of correcting it. External failure costs only arise once a defective item has reached the customer, which didn't happen here since the batch was caught and reworked before despatch.

Section A, Quality costing — classifying an internal failure cost · Ref A4 · p1056

Question 12: A 0.80

Throughput per unit = selling price − material cost (truly variable cost) = £80 − £32 = £48. Return per factory hour = throughput per unit ÷ bottleneck hours per unit = £48 ÷ 2 = £24. Cost per factory hour = total factory costs ÷ total bottleneck hours = £240,000 ÷ 8,000 = £30. TPAR = return per factory hour ÷ cost per factory hour = £24 ÷ £30 = 0.80. A TPAR below 1.0 indicates the product is not generating sufficient throughput to cover factory costs through the bottleneck, and action is required. 1.60 uses throughput per unit instead of per bottleneck hour (£48 ÷ £30), and 1.20 does not follow from the figures.

Section A, Throughput accounting — TPAR comparison · Ref A4 · p1077

Question 13: B It decreases

Total fixed costs remain constant as volume increases within the relevant range, but because fixed cost per unit = total fixed cost ÷ number of units, the fixed cost per unit falls as more units are produced. This is the basis of economies of scale from fixed cost leverage. Variable cost per unit stays constant within the relevant range. Understanding this distinction is fundamental to cost-volume-profit analysis and to the comparison of absorption costing and marginal costing.

Section A, Cost behaviour — total vs unit cost · Ref A1 · p1078

Question 14: C At the design stage, before production begins, when cost-reduction opportunities are greatest

Target costing establishes a cost target (derived from the market price and required margin) before the product is designed, and product engineers then aim to design the product to meet that target. Up to 80–90% of a product's costs are locked in at the design stage, so influencing cost is far more effective before production begins than after. Target costing applies to both manufacturing and services, and is not limited to situations where margins are unachievable — it is a proactive costing tool used during new product development.

Section A, Target costing — application · Ref A4 · p1079

Question 15: B The marginal cost of an additional digital copy is near zero, making cost-based pricing difficult

A defining characteristic of digital products is that the marginal cost of producing an additional unit (an extra download or software licence) is effectively zero — there is no material, and distribution is almost costless. This creates a challenge for traditional cost-plus pricing because a zero marginal cost product would be priced at zero using marginal cost as the base. Instead, digital product pricing typically uses value-based, subscription or tiered approaches. Digital products can be sold internationally, vary widely in their production processes, and have very low, not high, material costs.

Section A, Digital product costing · Ref A3 · p1082

Question 16: A The output range over which fixed and unit variable cost assumptions are likely to hold true

The relevant range is the range of activity (volume) within which the assumed cost behaviour is expected to be valid — where fixed costs genuinely stay fixed (no step changes) and variable costs genuinely vary proportionally. Beyond the relevant range, step increases in fixed costs or changes in variable cost efficiency may occur. Cost-volume-profit analysis and flexible budgets rely on cost behaviour assumptions that only apply within this range, not at extreme or unusual output levels.

Section A, Relevant range · Ref A1 · p1105

Question 17: B Cost per kilogram-kilometre (or tonne-kilometre)

A cost unit should reflect the primary output of the service. For a haulage company, the output is both the weight carried and the distance covered, so tonne-kilometres (or kilogram-kilometres) combines both dimensions into a single composite unit that reflects the service provided. Cost per employee does not measure output, cost per invoice is an administrative measure, and cost per complaint is a quality measure, not an output unit. Appropriate cost units enable meaningful cost comparison across periods and between companies.

Section A, Cost unit examples · Ref A1 · p1126

Question 18: C Analysing each component to achieve the required function at lower cost, without reducing perceived quality

Value engineering (or value analysis) examines each element of a product's design to identify whether the required function can be achieved at a lower cost — for example, by substituting a cheaper material that performs equally well, simplifying the design, or redesigning for easier manufacture. The goal is to close the cost gap identified by target costing without sacrificing the attributes customers value. Simply adding features, increasing volume or outsourcing are separate approaches that may not close the cost gap and could introduce their own problems.

Section A, Target costing — value engineering · Ref A4 · p1131

Question 19: C £3,500 adverse

The fixed overhead expenditure variance = budgeted fixed overhead − actual fixed overhead = £60,000 − £63,500 = −£3,500, i.e. £3,500 adverse, because actual spending exceeded budget. The favourable version reverses the direction. This is the only fixed overhead variance that exists in marginal costing; in absorption costing it is accompanied by a volume variance. The expenditure variance measures whether the business spent more or less on fixed overheads than budgeted. £3,000 adverse does not follow from the figures.

Section B, Fixed overhead expenditure variance · Ref B2 · p1011

Question 20: D £200 favourable

Variable overhead expenditure variance = (standard rate × actual hours) − actual variable overhead = (5,000 × £3) − £14,800 = £15,000 − £14,800 = £200 favourable, because less was spent than the standard rate implied for the hours worked. The adverse version reverses the direction. This variance is isolated by holding hours constant at actual hours, separating spending efficiency from time efficiency (the latter is captured by the efficiency variance). £1,200 adverse does not follow from the figures.

Section B, Variable overhead expenditure variance · Ref B2 · p1036

Question 21: A £3,000 adverse

Actual price = £87,000 ÷ 3,000 = £29 per unit. Sales price variance = (actual price − standard price) × actual units sold = (£29 − £30) × 3,000 = −£3,000, i.e. £3,000 adverse, because the actual price received was below standard. The favourable option reverses the sign. This variance measures the revenue effect of selling at a different price from standard, isolated from the effect of selling different volumes. £90,000 is the standard revenue (3,000 × £30), not a variance, and £1,500 does not follow from the figures.

Section B, Sales price variance · Ref B2 · p1037

Question 22: C A standard based on perfect operating conditions with no wastage, no idle time and no inefficiency

An ideal standard assumes perfect efficiency — no waste, no idle time, no machine breakdowns — and represents the best possible outcome. It is rarely achieved in practice, which means virtually all variances are adverse; this can demotivate staff. An attainable (or expected) standard assumes normal efficiency including expected wastage and idle time. A current standard reflects current conditions. Ideal standards are sometimes used as aspirational targets in kaizen or continuous improvement environments.

Section B, Types of standard · Ref B2 · p1039

Question 23: D £480 Adverse

The standard weighted-average labour rate is £12,000 (standard cost) ÷ 1,000 (standard hours) = £12 per hour. The standard hours allowed for the actual output of 980 units, at the standard rate of 1 hour per unit, is 980 hours. The yield variance compares this to the actual total hours worked: (980 standard hours allowed − 1,020 actual hours worked) × £12 = (40) × £12 = £480 Adverse (option D). The adverse result shows that, in total, more labour hours were used than the standard allows for the output actually achieved: a genuine efficiency loss in converting labour input into finished output, separate from any effect of changing the grade mix, which the mix variance captures. Option A has the right amount but the wrong direction. Option B (£240) compares actual hours with the original 1,000 budgeted hours instead of the 980 allowed for the actual output ((1,000 − 1,020) × £12). Option C (£40) is the 40-hour shortfall without pricing it at the £12 standard rate.

Section B, Labour yield variance — calculation · Ref B2 · p1040

Question 24: D Difference between the original standard and a revised standard, reflecting uncontrollable external conditions

The planning variance measures the extent to which the original standard was unrealistic due to uncontrollable changes in the environment (such as unexpected price increases in commodity markets). It is the difference between the original standard and a revised, ex-post standard. The operational variance then compares the revised standard to actual results, measuring what management actually controlled. This split allows a fairer performance assessment by separating controllable from uncontrollable variances.

Section B, Planning and operational variances — concept · Ref B2 · p1060

Question 25: C Operational managers help set their own budgets, which are then reviewed and coordinated centrally

In participative budgeting, operational managers contribute their local knowledge to the budgeting process, which can improve accuracy, increase acceptance and motivate managers who feel ownership of their budgets. A downside is that managers may introduce budget slack (deliberately underestimating revenue or overestimating costs). Top-down budgeting (imposed) is quicker but may reduce motivation. External consultants may assist but are not the defining feature of participative budgeting, and deliberately impossible budgets destroy motivation.

Section B, Behavioural aspects — budget participation · Ref B1 · p1063

Question 26: B Whether the actual sales mix differs from budget, valued at standard contribution per unit

The sales mix variance isolates the profit impact of selling a different proportional mix of products from budgeted, holding total actual volume constant. If the actual mix shifts toward higher-contribution products, the mix variance is favourable. The sales quantity variance then measures the effect of the total actual sales volume being different from budget, in the standard mix. Together they reconcile the total sales volume variance. The price variance is a separate calculation.

Section B, Sales mix and quantity variances — concept · Ref B2 · p1086

Question 27: A A part of the organisation for which a manager is held responsible for specific financial performance measures

A responsibility centre is a unit of the organisation whose manager is accountable for a defined set of financial measures — a cost centre (costs only), revenue centre (revenues only), profit centre (revenues and costs) or investment centre (revenues, costs and assets). The type of centre determines what the manager controls and is measured on. The number of staff and the level of the organisation are not the defining criteria. Responsibility accounting ensures that managers are evaluated only on what they can control.

Section B, Responsibility accounting · Ref B1 · p1089

Question 28: B 25,500 kg

Purchases = material required for production + closing inventory − opening inventory = 24,000 + 3,500 − 2,000 = 25,500 kg. Because the company plans to build up its material inventory, it must purchase more than it uses in production. The 22,500 kg figure reverses the inventory adjustment. The materials purchases budget depends on both the production volume (which drives consumption) and the planned inventory movements. 20,500 kg deducts the closing inventory from the requirement and ignores the opening inventory.

Section B, Materials purchases budget · Ref B1 · p1090

Question 29: D £240 Favourable

At the standard 50:50 mix, the actual total of 1,020 hours should have been split 510 skilled and 510 unskilled hours. Skilled labour: (510 − 480 actual) x £16 = 30 x £16 = £480 Favourable (30 fewer hours of the more expensive grade used than the standard mix implies). Unskilled labour: (510 − 540 actual) x £8 = (30) x £8 = £240 Adverse (30 more hours of the cheaper grade used). Net mix variance = £480 Favourable − £240 Adverse = £240 Favourable. The favourable result reflects a shift toward more of the cheaper unskilled hours and fewer of the expensive skilled hours than the standard mix specifies, which reduces cost for the same total hours worked.

Section B, Labour mix variance — calculation · Ref B2 · p1108

Question 30: D The variances sum to the usage variance as expected; both the shift to more expensive materials and a yield shortfall contributed, and each should be investigated separately as they may have different causes

Mix and yield variances always sum to the total usage variance by construction: £60 Adverse mix + £230 Adverse yield = £290 Adverse usage, exactly as it should (option D). An adverse mix variance means the actual mix used relatively more of the expensive materials than standard; an adverse yield variance means the process produced less output than standard from the total input. Option A is wrong: the two variances have different causes and do not always move in the same direction (mix can be favourable while yield is adverse), and adverse variances of this size may still merit investigation. Option B is wrong for the same reason: there is no rule that they must offset, so both being adverse does not indicate an error. Option C is wrong: the total usage variance is still reported, and the value of the subdivision is that it lets management investigate the mix decision separately from the yield shortfall rather than treating the combined figure as a single, harder-to-diagnose number.

Section B, Mix and yield variances — reconciliation and interpretation · Ref B2 · p1110

Question 31: B £445,000

Total employment cost to the employer = gross wages + employer's national insurance = £400,000 + £45,000 = £445,000. Employee deductions (income tax £80,000 and employee's NI £30,000) are not an additional cost to the employer — they are deducted from the gross pay and passed to the tax authority on the employee's behalf. The employer's own national insurance contribution is a genuine additional cost above the gross wage. The net pay to employees is £400,000 − £80,000 − £30,000 = £290,000. £555,000 also adds the employee deductions, which are part of gross pay, not extra cost.

Section B, Labour cost — gross to net reconciliation · Ref B2 · p1134

Question 32: C Yes — the adverse variance of £6,000 represents 7.5% of standard, exceeding the 5% control limit

Variance as a percentage of standard = £6,000 ÷ £80,000 × 100 = 7.5%. Since 7.5% exceeds the 5% control limit, the variance should be investigated. Management by exception focuses attention on significant deviations; applying a percentage threshold prevents wasting time on trivial variances while ensuring material ones receive attention. Both favourable and adverse variances outside limits should be investigated — favourable variances may indicate errors in the standard, not just better-than-expected performance.

Section B, Budgetary control — variance investigation · Ref B1 · p1135

Question 33: B Taking the current budget as a base and adjusting by a percentage or amount for next period

Incremental budgeting takes a previous period's budget or actual as the starting point and adjusts for known or expected changes — such as inflation, volume changes or new commitments. It is the simplest approach but risks perpetuating inefficiencies (the 'baseline is always right' assumption). Zero-based budgeting starts from scratch each period. Rolling or continuous budgets are updated regularly as conditions change. Activity-based budgeting uses cost driver information to set budgets. Incremental budgeting is widely used because of its simplicity despite its well-known limitations.

Section B, Types of budget — incremental · Ref B1 · p1138

Question 34: D 40%

Contribution per unit = £40 − £24 = £16. C/S ratio = contribution ÷ selling price = £16 ÷ £40 = 40%. The 60% figure is the variable cost to sales ratio (£24 ÷ £40), the complement of the C/S ratio. The 67% figure uses the wrong denominator (£16 ÷ £24 = 67%). The C/S ratio is useful for finding breakeven revenue (fixed costs ÷ C/S ratio) and for multi-product CVP analysis without having to work in units. 150% divides variable cost by contribution (£24 ÷ £16).

Section C, Contribution to sales ratio · Ref C1 · p1016

Question 35: A Ignored, because it is a sunk cost that has already been incurred and cannot be recovered

The £50,000 has already been spent and cannot be recovered regardless of whether the launch proceeds. It is a sunk cost and therefore irrelevant to the decision. Only future, incremental cash flows that differ between the available choices should be included in the analysis. Including sunk costs in decisions leads to a form of irrational thinking known as the sunk cost fallacy — committing to a course of action because of past expenditure rather than future expected value.

Section C, Relevant costs — sunk costs · Ref C1 · p1017

Question 36: C Make internally, since the relevant cost (£14) is less than the buy-in price (£19)

With spare capacity and unavoidable fixed costs, the only relevant cost of making is the variable cost of £14 per unit. Comparing this with the £19 external price, making is £5 per unit cheaper. Fixed costs are irrelevant because they will be incurred whether or not the component is made internally. On purely financial grounds, the company should make the component. Non-financial factors (such as quality, reliability of supply and strategic considerations) may also be relevant but are not asked for here.

Section C, Make-or-buy decision · Ref C1 · p1019

Question 37: A 30%

Margin of safety in units = budgeted sales − breakeven sales = 12,000 − 8,400 = 3,600 units. Margin of safety as a percentage of budgeted sales = 3,600 ÷ 12,000 × 100 = 30%. This means sales could fall by 30% from budget before the company makes a loss. The 70% figure is the breakeven point as a percentage of budgeted sales (8,400 ÷ 12,000), not the margin of safety. A higher margin of safety indicates lower risk. 42% and 70,000 units do not follow from the figures; the margin of safety in units is 3,600.

Section C, Margin of safety · Ref C1 · p1041

Question 38: B Market skimming pricing

Market skimming sets a high initial price to capture the maximum willingness to pay from early adopters before gradually reducing the price to attract more price-sensitive segments. It is suitable where the product has unique features, demand is inelastic initially, and there is no immediate competition. Penetration pricing would set a low price to build market share quickly, suitable where there is existing competition or where scale economies are available. Cost-plus and marginal cost pricing are cost-based methods that do not consider market conditions.

Section C, Penetration vs skimming pricing · Ref C2 · p1046

Question 39: B £0 (nil, as the material has no alternative use and no resale value)

The 500 kg already in stock has no relevant cost because it has no alternative use and cannot be resold — whatever happens, this cost has already been sunk and no future cash flow depends on what is decided about using it. The original purchase price (£1,500) is a sunk cost and irrelevant. The current purchase price (£5/kg) is only relevant for the additional 300 kg that must be bought. The relevant cost of the 800 kg total = £0 (for 500 kg in stock) + 300 kg × £5 = £1,500.

Section C, Relevant cost — material in stock · Ref C1 · p1066

Question 40: A Makes zero contribution to fixed costs and profit on that product

Pricing at marginal cost means the price equals variable cost, so contribution is zero — no profit is made and none of the fixed costs are recovered through this product. Marginal cost pricing may be used in the short run to utilise spare capacity (where fixed costs are already covered by other products) or in competitive bidding, but it cannot be sustained long-run as it does not recover fixed costs. The company does not maximise profit at this price and does not always win contracts, as competitors may price below marginal cost.

Section C, Marginal cost pricing · Ref C2 · p1069

Question 41: C Marginal cost equals marginal revenue, giving a price of £60

Profit is maximised where marginal cost (MC) = marginal revenue (MR). MR is derived from the demand function: TR = PQ = (100 − 0.5Q)Q = 100Q − 0.5Q². MR = dTR/dQ = 100 − Q. Setting MC = MR: £20 = 100 − Q → Q = 80. Price = £100 − 0.5(80) = £100 − £40 = £60 (option C). Option A copies a competitor's price, which ignores the company's own demand curve and costs; at £80 only 40 units are sold and contribution falls from £3,200 to £2,400. Option B, pricing at variable cost, gives zero contribution. Option D, the midpoint price of £50, is where MR = 0, which maximises revenue, not profit, because it ignores the £20 variable cost.

Section C, Demand-based pricing — optimal price · Ref C2 · p1071

Question 42: D £18,000 (current resale value — the opportunity cost)

The relevant cost is the economic sacrifice of using the machine — its opportunity cost, which is the cash the company could receive if it sold the machine instead of using it for the order: £18,000. The original cost (£50,000) is sunk; the carrying amount (£30,000) is an accounting figure, not a cash flow; and zero is incorrect because the company forgoes £18,000 of resale proceeds. If the machine has no resale value and no other use, then the relevant cost would be zero. The opportunity cost is the correct relevant cost here.

Section C, Relevant cost — machine replacement · Ref C1 · p1092

Question 43: C Pricing at or near the market price (price-taker behaviour)

In a commodity market with homogeneous products, individual companies have little or no pricing power — they are price takers who must accept the prevailing market price. Setting a price significantly above the market rate would result in losing all sales to competitors. Cost-plus pricing is internally focused and ignores market realities, market skimming requires product differentiation, and price discrimination requires identifiable segments with different willingness to pay. Accepting the market price and focusing on cost efficiency is the rational approach.

Section C, Pricing strategy — market conditions · Ref C2 · p1095

Question 44: B £8,000 (future variable cost only)

The £15,000 already spent is a sunk cost — irrelevant to the make-or-buy decision going forward. The only relevant cost of completing internally is the future incremental cost of £8,000. Comparing £8,000 (make) with £10,000 (buy), completing internally is £2,000 cheaper on a relevant cost basis. Including the sunk £15,000 would incorrectly suggest that making is more expensive than buying. Relevant cost analysis focuses exclusively on future, incremental cash flows that differ between the options.

Section C, Relevant cost — sunk cost in make-or-buy · Ref C1 · p1114

Question 45: C Charges different prices to different segments for the same product, based on willingness to pay

Price discrimination involves charging different prices to different market segments for the same (or similar) product when those segments have different price elasticities of demand — for example, business vs leisure train fares, or time-based pricing. It is profitable when segments can be separated, arbitrage prevented, and the segments have different willingness to pay. Charging uniform prices, cost-plus pricing, and price matching are all different approaches that do not involve discriminating between customer segments.

Section C, Pricing — price discrimination · Ref C2 · p1115

Question 46: C £21

The relevant labour cost = the direct cost of the labour + the opportunity cost of lost contribution. Direct cost = £15/hour (the contract workers must be paid for hours worked on the special order). Opportunity cost = £6/hour (the contribution forgone from the displaced work). Total relevant cost = £15 + £6 = £21/hour. At full capacity, using labour for the special order forgoes other profitable work, making the opportunity cost a genuine relevant cost. With spare capacity, the opportunity cost would be zero and the relevant cost would be just £15/hour. £9 deducts the lost contribution instead of adding it.

Section C, Relevant cost — contract labour · Ref C1 · p1139

Question 47: D The area where the total revenue line is above the total cost line

Profit is earned when revenue exceeds total cost, so the profit zone on a breakeven chart is the area to the right of the breakeven point where the revenue line sits above the total cost line. To the left of the breakeven point, costs exceed revenue and the area represents a loss. Fixed costs remain constant (a horizontal line), and the question of whether they exceed variable costs depends on the output level, not the profit zone. The vertical gap between the revenue and total cost lines represents the profit or loss at each level of output.

Section C, Breakeven — graphical interpretation · Ref C1 · p1140

Question 48: A Revenue falls from £100,000 to £93,500

Current revenue = 2,000 × £50 = £100,000. New revenue = 1,700 × £55 = £93,500. Revenue falls by £6,500. PED check: % change in Q = (1,700 − 2,000)/2,000 = −15%; % change in P = (£55 − £50)/£50 = +10%; PED = −15/10 = −1.5. Since PED is elastic (absolute value > 1), a price rise reduces total revenue — consistent with the calculated fall. When demand is elastic, the proportional volume decline outweighs the price increase. A revenue rise would occur only if demand were inelastic.

Section C, Price elasticity — calculation and application · Ref C2 · p1141

Question 49: C Supplier B with a score of 7.3

Supplier A weighted score = (8 × 0.50) + (5 × 0.30) + (7 × 0.20) = 4.00 + 1.50 + 1.40 = 6.90. Supplier B weighted score = (6 × 0.50) + (9 × 0.30) + (8 × 0.20) = 3.00 + 2.70 + 1.60 = 7.30. Supplier B has the higher weighted score (7.30 vs 6.90). Despite Supplier A's price advantage (the highest-weighted criterion), Supplier B's superior quality score is sufficient to give it an overall higher weighted score. Weighted benefit scoring makes trade-offs between criteria explicit and forces a structured comparison. 6.9 is Supplier A's correct score but it is the lower of the two, and 7.1 does not follow for either supplier.

Section C, Weighted benefit scoring — application · Ref C2 · p1143

Question 50: A Too low to recover fixed overhead if actual volume is below budget

When actual production (8,000 units) is below budgeted production (10,000 units), the fixed overhead per unit rises: £100,000 ÷ 8,000 = £12.50 vs the budgeted £10.00. If the company sticks with the budgeted full cost (£10/unit absorbed), the price set will not fully recover actual fixed overhead — under-recovery means the company is in effect pricing below actual full cost. The correct full cost pricing would use the higher actual overhead rate, but that may price the company out of the market, illustrating a fundamental limitation of cost-plus pricing.

Section C, Absorption cost — pricing problem · Ref C1 · p1145

Question 51: B The reliability and quality of the external supplier

Beyond financial analysis, a make-or-buy decision should consider whether an external supplier can deliver consistent quality and reliable supply, whether the company would become dependent on a single source, and whether strategic know-how might be lost by outsourcing. Standard cost, OAR and fixed cost per unit are all financial factors already captured (or appropriately excluded) in the relevant cost analysis. Supplier reliability and quality are genuine non-financial considerations that could make buying inadvisable even when financially attractive.

Section C, Qualitative factors — relevant costs · Ref C1 · p1146

Question 52: C Under risk, probabilities of each outcome can be estimated; under uncertainty, they cannot meaningfully be assigned

Risk describes situations where the possible outcomes are known and probabilities can be assigned to them (enabling tools such as expected value and decision trees). Uncertainty describes situations where the range of outcomes or their probabilities cannot meaningfully be determined — often in novel or unprecedented situations. Both risk and uncertainty can lead to positive or negative outcomes. Insurance transfers financial risk but cannot eliminate uncertainty. The distinction determines which analytical tools are appropriate.

Section D, Risk vs uncertainty · Ref D1 · p1023

Question 53: B Squares represent decision points where the decision maker chooses; circles represent chance nodes where probability decides

In a decision tree, square nodes are decision points — the decision maker chooses between alternative courses of action. Circular nodes are chance (probability) nodes — the outcome is determined by chance, with each branch assigned a probability. The tree is drawn left to right and evaluated by working back from right to left (rolling back), replacing chance nodes with expected values and choosing the decision node branch with the highest expected value. This structure is the standard convention in management accounting and decision analysis.

Section D, Decision trees — structure · Ref D1 · p1050

Question 54: D Project X; £56,000

Expected value of Project X = (0.6 × £80,000) + (0.4 × £20,000) = £48,000 + £8,000 = £56,000. Expected value of Project Y = £55,000 (certain). Since £56,000 > £55,000, Project X is preferred on an expected value basis. The rollback method values chance nodes as expected values, then selects the highest value at each decision node. The £50,000 figure misapplies probabilities; a risk-averse decision maker might prefer Project Y despite its lower expected value.

Section D, Decision tree — rollback calculation · Ref D1 · p1072

Question 55: A £7,000

Expected value with perfect information (EVWPI) = (0.6 × £60,000) + (0.4 × £27,500) = £36,000 + £11,000 = £47,000. EVPI = EVWPI − expected value without information = £47,000 − £40,000 = £7,000. This represents the maximum amount the company should pay for information that perfectly predicts which state of the world will occur. The £47,000 figure is the expected payoff with perfect information, not the value of that information. EVPI is always non-negative; if it is small, acquiring information may not be worth the cost. £20,000 and £3,000 do not follow from the figures.

Section D, Value of perfect information · Ref D1 · p1073

Question 56: B 20%

Sensitivity of variable costs = project NPV ÷ PV of the variable being tested = £20,000 ÷ £100,000 = 20%. If variable costs were 20% higher, the negative impact on NPV would be £100,000 × 20% = £20,000, exactly eliminating the positive NPV. This is the percentage change that renders the project marginal. A variable with a low sensitivity percentage is the most critical because a small adverse change makes the project unviable. The 5% and 10% figures understate the sensitivity. 25% divides the NPV by £80,000 instead of £100,000.

Section D, Sensitivity analysis — calculation · Ref D1 · p1074

Question 57: C Model the simultaneous effect of uncertainty across multiple variables, producing a probability distribution of outcomes

Simulation — particularly Monte Carlo simulation — models the combined effect of uncertainty in multiple variables simultaneously, generating thousands of random scenarios and producing a probability distribution of outcomes (such as profit or NPV). This gives decision makers a richer picture of risk than single-variable sensitivity analysis. Simulation does not guarantee the correct answer (it provides a probability distribution, not certainty), does not eliminate risk, and can be used with assumed or empirically estimated distributions for each variable.

Section D, Simulation — concept · Ref D1 · p1075

Question 58: C Choose the option with the lower variance (less risky) of possible outcomes

A risk-averse decision maker dislikes uncertainty and, all else equal, prefers the option with more predictable outcomes — lower variance, standard deviation or spread of possible results — even at the same expected return. Risk-seeking behaviour involves preferring more variance (maximax thinking). Risk-neutral decision makers base decisions purely on expected values and are genuinely indifferent when expected values are equal. Always choosing the highest payoff is maximax, which is risk-seeking, not risk-averse.

Section D, Risk-averse vs risk-seeking behaviour · Ref D1 · p1123

Question 59: D The variable with the lowest sensitivity percentage, where a small change makes the project unviable

The sensitivity percentage for a variable is the percentage change required in that variable before the NPV falls to zero. The variable with the lowest sensitivity percentage requires the smallest adverse change to destroy the project's viability — it is therefore the most sensitive and most critical. A low sensitivity percentage means little room for error. The highest sensitivity percentage means the project can withstand a large change before failing. Neither absolute value nor management control determines sensitivity.

Section D, Sensitivity analysis — most sensitive variable · Ref D1 · p1124

Question 60: A Randomly selecting a value for each uncertain variable from its distribution and calculating the outcome

Each Monte Carlo run randomly samples a value for each uncertain variable from its assumed probability distribution — for example, picking a selling price from a uniform or normal distribution — then calculates the model output (such as NPV) for that combination of values. After thousands of runs, the results form a probability distribution of the output, showing the range of outcomes and their relative likelihoods. Using the most likely value, best-case values or expected values would all give a single deterministic result rather than the distribution that Monte Carlo generates.

Section D, Simulation — Monte Carlo · Ref D1 · p1125