S6 BAFS Practice Paper (4): Marginal Costing and Cost-Volume-Profit Analysis, Absorption Costing and Stock Profit Difference, Cash Budget, Ratio Analysis, Limited Company Depreciation and Allowance for Doubtful Debts, Direct Material Price and Usage Variances (100 marks)

S6 Business, Accounting and Financial Studies | 100 marks | 75 minutes

Question 1: Marginal Costing and Cost-Volume-Profit Analysis

A product sells for $80 per unit; unit variable cost is $48 and annual fixed costs are $256,000.

Calculate the unit contribution margin. *(5 marks)*

Answer: Unit contribution margin = selling price - unit variable cost = $80 - $48 = $32.

Calculate the break-even sales volume in units. *(5 marks)*

Answer: Break-even units = fixed costs / unit contribution = $256,000 / $32 = 8,000 units.

How many units must be sold to earn a profit of $96,000? *(5 marks)*

Answer: Required units = (fixed costs + target profit) / unit contribution = ($256,000 + $96,000) / $32 = 11,000 units.

If actual sales are 12,000 units, what is the margin of safety percentage? Briefly explain it. *(5 marks)*

Answer: Margin of safety = (actual units - break-even units) / actual units x 100 = (12,000 - 8,000) / 12,000 x 100, about 33.3 per cent. Sales could fall by about one third before a loss arises.

Question 2: Absorption Costing and the Stock-Related Profit Difference

A company produced 10,000 units and sold 8,000 units this period with no opening stock. Total fixed production overhead was $150,000, absorbed on units produced.

Calculate the fixed production overhead absorption rate per unit. *(4 marks)*

Answer: Absorption rate = fixed production overhead / units produced = $150,000 / 10,000 units = $15 per unit.

What is the closing stock in units? *(3 marks)*

Answer: Closing stock = production - sales = 10,000 - 8,000 = 2,000 units.

Calculate the profit difference between absorption costing and marginal costing, and state which shows the higher profit. *(5 marks)*

Answer: Profit difference = increase in stock x absorption rate = 2,000 units x $15 = $30,000, with absorption costing reporting the higher profit by $30,000.

Explain the cause of the difference. *(4 marks)*

Answer: Absorption costing carries $30,000 of fixed production overhead into closing stock, so less cost is charged this period and profit is higher; marginal costing charges all fixed production overhead to the period. The difference reverses when the stock is sold.

Question 3: Preparing a Cash Budget

A business had opening cash of $12,000. During the period cash sales were $60,000, receipts from receivables $45,000, payments to suppliers $52,000, wages $18,000 and loan repayment $10,000; depreciation of $6,000 was also charged.

What were total cash receipts for the period? *(4 marks)*

Answer: Total cash receipts = cash sales $60,000 + receipts from receivables $45,000 = $105,000.

What were total cash payments for the period? *(4 marks)*

Answer: Total cash payments = suppliers $52,000 + wages $18,000 + loan repayment $10,000 = $80,000.

Calculate the closing cash balance for the period. *(5 marks)*

Answer: Closing cash = opening $12,000 + receipts $105,000 - payments $80,000 = $37,000.

Why is depreciation of $6,000 excluded from the cash budget? Explain. *(5 marks)*

Answer: Depreciation allocates the cost of a non-current asset; no cash leaves the business this period, so it is a non-cash expense affecting the income statement but not the cash budget.

Question 4: Ratio Analysis

A company has current assets of $480,000 (including stock of $180,000) and current liabilities of $240,000; revenue is $1,200,000, gross profit $360,000 and net profit $96,000.

Calculate the current ratio. *(4 marks)*

Answer: Current ratio = current assets / current liabilities = $480,000 / $240,000 = 2.0 times.

Calculate the quick (acid test) ratio. *(4 marks)*

Answer: Quick ratio = (current assets - stock) / current liabilities = ($480,000 - $180,000) / $240,000 = 1.25 times.

Calculate the gross profit margin. *(4 marks)*

Answer: Gross profit margin = gross profit / revenue x 100 = $360,000 / $1,200,000 x 100 = 30.0 per cent.

Calculate the net profit margin and compare what the two ratios show about profitability. *(4 marks)*

Answer: Net profit margin = net profit / revenue x 100 = $96,000 / $1,200,000 x 100 = 8.0 per cent. The gross margin of 30.0 per cent measures trading spread while the net margin of 8.0 per cent is after operating expenses and interest; the 22.0 percentage point gap shows operating costs absorb a large share of revenue.

Question 5: Depreciation and Allowance for Doubtful Debts

A limited company bought a machine for $600,000 with an estimated residual value of $60,000 and a useful life of 5 years, depreciated on a straight-line basis. Closing trade receivables are $250,000 and an allowance for doubtful debts of 4 per cent is required.

Calculate the annual depreciation charge. *(4 marks)*

Answer: Annual depreciation = (cost - residual value) / useful life = ($600,000 - $60,000) / 5 = $108,000.

What is the net book value of the machine after three years? *(4 marks)*

Answer: Accumulated depreciation after three years = $108,000 x 3 = $324,000; net book value = $600,000 - $324,000 = $276,000.

Calculate the allowance for doubtful debts and the net trade receivables. *(3 marks)*

Answer: Allowance = $250,000 x 4 per cent = $10,000; net trade receivables = $250,000 - $10,000 = $240,000.

If the allowance rose from 4 to 6 per cent, what would be the effect on this period's profit? *(3 marks)*

Answer: The allowance would rise from $10,000 to $15,000; the extra $5,000 is an expense, so profit for the period falls by $5,000, other things equal.

Question 6: Direct Material Price and Usage Variances

Standard cost: 3 kg of material per unit at a standard price of $8 per kg. Actual output was 4,000 units using 12,600 kg at an actual price of $8.20 per kg.

What is the standard material quantity for actual output? *(4 marks)*

Answer: Standard quantity = 4,000 units x 3 kg = 12,000 kg.

Calculate the material price variance and state whether it is favourable or adverse. *(4 marks)*

Answer: Price variance = (actual price - standard price) x actual quantity = ($8.20 - $8) x 12,600 = $2,520 adverse.

Calculate the material usage variance and state whether it is favourable or adverse. *(4 marks)*

Answer: Usage variance = (actual quantity - standard quantity) x standard price = (12,600 - 12,000) x $8 = $4,800 adverse.

Calculate the total material variance. *(4 marks)*

Answer: Total variance = $2,520 + $4,800 = $7,320 adverse, so material cost exceeded standard by $7,320.