**17. Break-even analysis Mark: /20**

1. Company A has a selling price of £8.90. Its variable cost per unit is £3.50. What is its contribution per unit? /2 marks

Contribution Per Unit = Selling Price – Variable Cost (Per Unit)  
Contribution Per Unit = £8.90 - £3.50  
Contribution Per Unit = **£5.40**

1. Company B has a selling price of £23. Its contribution per unit is £11.50. What is the variable cost per unit? /2 marks

Contribution Per Unit = Selling Price – Variable Cost (per unit)  
Variable Cost (per unit) = Selling Price – Contribution per unit  
Variable Cost (per unit) = £23 - £11.50  
Variable Cost (per unit) = **£11.50**

1. Company C has total contribution of £15 000. Its VC per unit is £2.80. It sells 2 000 units. What is the selling price per unit? /3 marks

Total Contribution = Sales Revenue + Total Variable Costs  
£15 000 = Sales revenue – (£2.80 x 2000)  
£15 000 = Sales revenue – £5 600  
Sales Revenue = £15 000 + £5 600  
Sales Revenue = £20 600  
Selling Price per unit = £20 600/2 000 = **£10.30**

1. The following items of data belong to company D:
   * Selling price per unit £10
   * Total variable cost £3 400
   * Fixed costs £9 130
   * Sales 2 000 units
2. What is the contribution per unit? /3 marks

Contribution per unit = Selling Price – Variable Cost (per unit)  
Contribution per unit = £10 – Variable Cost per unit  
Variable Cost (per unit) = Total Variable Costs/Sales  
Variable Cost (per unit) = £3 400/2 000  
Variable Cost (per unit) = £1.70  
Contribution per unit = £10 - £1.70  
Contribution per unit = **£8.30**

1. What is the break-even level of output? /3 marks

Break- Even Level of Output = Fixed Costs/Contribution Per Unit  
Contribution = Selling Price – Variable Cost  
Break- Even Level of Output = £9 130/£8.30  
Break- Even Level of Output **= 1 100 units**

1. What is the break-even margin of safety? /2 marks

Margin of Safety = Actual Output – Break-Even Output  
Margin of Safety = 2 000 – 1 100  
Margin of Safety = **900**

1. What profit/loss is made? /2 marks

Profit = Sales Revenue – Total Costs  
Sales Revenue = Selling Price x Quantity Sold  
Sales Revenue = £10 x 2 000  
Sales Revenue = £20 000  
Total Costs = Fixed Costs + Variable Costs  
Total Costs = £9 130 + £3 400  
Total Costs = £12 530

Profit = £20 000 - £12 530  
Profit = **£7 470**

1. What would the profit/loss be if sales fell by 25%? /3 marks

Profit = Sales Revenue – Total Costs  
Sales Revenue = Selling Price x Quantity Sold   
Quantity Sold decreased by 2000 x 0.75 = 1500   
New Quantity Sold = 1 500  
Sales Revenue = £10 x 1 500  
Sales Revenue = £15 000  
Total Costs = Fixed Costs + Variable Costs  
Variable Cost = Variable cost per unit x Quantity Sold  
Variable Cost = £1.70 x 1 500  
Variable Cost = £2 550  
Total Cost = £9 130 + £2 550  
Total Cost = £11 680

Profit = £15 000 - £11680  
Profit = **£3 320**