**Question 17**

**PART A**

The following figures relate to Scott Holden’s business where he manufactures Product A:

Sales Revenue £24,000

Direct Material Cost per unit £10

Labour Cost per unit £16

Variable Overheads per unit £4

Fixed Costs £4,000

Units of Output 600

Calculate the following for Product A:

1. Selling Price per unit **2**
2. Total Variable Cost per unit **2**
3. Contribution per unit **2**
4. The Break-even Point in units and Sales Value **3**
5. How many units of Product A would need to be produced and sold to   
   make a profit of £8,000? **3**
6. The Profit/Loss for Product A at the current level of output if all units are sold. **3**

**PART B**

Torridon produces 2 products, X and Y using a standard machine. The level of production of 10,000 units of each product in June uses all of the available machine time. This is the maximum units demanded of each product. Details for the products are:

|  |  |  |
| --- | --- | --- |
|  | **Y** | **Z** |
| Selling Price per unit | £80 | £70 |
| Contribution per unit | £20 | £24 |
| Machine Hours per unit | 2 hours | 6 hours |

1. Calculate the total number of machine hours needed to produce Y and Z. **2**

Due to maintenance inJuly, machine time available is to be reduced by 30%.

1. For July:
2. Calculate how many machine hours will be available. **2**
3. Calculate the contribution per machine hour for each product. **1**
4. Torridon wants to maximise profits. State which product Torridon should   
   produce more of. Give a reason for your answer. **1**
5. Calculate the number of units of each product to be produced, in order to   
   maximise profits. **4**
6. State three ways in which overheads may be apportioned to cost centres. **3**
7. Give two examples of an indirect cost. **2**

**Total marks (30)**

| **Question** | **Expected answer(s)** | **Mark** | **Additional guidance** |
| --- | --- | --- | --- |
| **17**  **PART A**  **(a)** | £24,000/600 = £40 | **2** | All or nothing.  **1 mark** if arithmetic error  (watch for consequentiality). |
| **17**  **PART A (b)** | £10 + £16 + £4 = £30 **(1)**  **(1)** | **2** |  |
| **17**  **PART A**  **(c)** | £40 − £30 = £10 | **2** | All or nothing.  **1 mark** if arithmetic error  (watch for consequentiality). |
| **17**  **PART A**  **(d)** | £4,000/£10 = 400 units **(2)**  400 × £40 = £16,000 sales value    **(1)** | **3** | The first **2 marks** are all or nothing.  **1 mark** if arithmetic error  (watch for consequentiality).  Accept 400 units without workings for  **2 marks.** |
| **17**  **PART A**  **(e)** | (£4,000 + £8,000) = £12,000/£10 = 1,200 units   1. **(1)** **(1)**   **OR**  £8,000/£10 = 800 + 400 = 1,200 units   1. **(1) (1)** | **3** | Watch for consequentiality.  **Max 2 marks** if answer incorrect based on figures used.  Candidates may use a different method to get the correct answer. |
| **17**  **PART A**  **(f)** | 600 − 400 = 200 units **(1)**  200 × £10 = £2,000   1. (**1)**   **OR**  600 × £10 = £6,000 − £4,000 = £2,000   1. **(1)**   **(1)** | **3** | Watch for consequentiality.  To gain first mark, candidate must use  600 units and the break-even point correctly.  Accept 200 units on its own for **2 marks.**  If arithmetic error where **2 marks** being given, reduce this to **1 mark**.  **Max 2 marks** if an answer is incorrect based on correct/consequential figures used.  Candidates may use a different method to get the correct answer.  Assume profit, therefore candidates do not need to use the word profit in their answer. However if they consequentially calculate a loss, there must be some indication of a loss to gain the final mark. |

| **Question** | **Expected answer(s)** | **Mark** | **Additional guidance** |
| --- | --- | --- | --- |
| **17**  **PART B**  **(a)** | Y = 10,000 × 2 = 20,000 **(1)**  Z = 10,000 × 6 = 60,000  Total 80,000 **(1)** | **2** |  |
| **17**  **PART B**  **(b) (i)** | 80,000 x 30% = 24,000 reduction in hours **(1)**  80,000 – 24,000 = 56,000 hours available **(1)** | **2** |  |
| **17**  **PART B**  **(b) (ii)** | Contribution per machine hour = CPU/machine hour per unit   |  |  | | --- | --- | | **Y** | **Z** | | £20/2 = £10 | £24/6 = £4 | | **1** | Need both correct for mark. |
| **17**  **PART B**  **(b) (iii)** | Product Y, as it has the highest contribution per hour. | **1** | Consequential on candidate’s answer from (b) (ii).  If no attempt to outline reason, no mark.  If (b) (ii) is correct, candidate need only to say “highest contribution” (per hour not needed).  If (b) (ii) is incorrect, there must be an indication of “per hour” in candidate’s reason. |
| **17**  **PART B**  **(b) (iv)** | Hours available 56,000  Units of Y to be produced **10,000 (1)**  Hours per unit (B) × 2 **(1)**  Hours of Y required 20,000  Hours of Z available 36,000 **(1)**  Hours per unit (Z) ÷ 6 **(1)**  Units of Z **6,000** | **4** | Watch for consequentiality.  If candidate has used 80,000 hours but done full working, **max 2 marks**.  If candidate just states 10,000 units of either product without working – no marks.  If answer given in terms of hours and units are not indicated – **max 2 marks** as question asks for units. |
| **17**  **PART B**  **(c)** | Responses could include:   * Area * No. of employees * Value of machinery * Labour hours * Machine hours * Value of direct material | **3** | Accept any three appropriate examples for **1 mark** each.  Accept any other relevant answer. |
| **17**  **PART B**  **(d)** | Responses could include:   * Electricity; insurance; cleaning; stationery; advertising; rent etc * Accept salaries (or any other payment to non-production staff) * Accept costs prefixed by indirect, eg indirect wages * Do not accept VAT/tax | **2** | Accept any two appropriate examples for  **1 mark** each. |