

Q1 (a)

| Time | Narrative                     | Cashflow<br>£'000 | Discount Factor<br>Zdf.   | Present Value<br>£'000. |
|------|-------------------------------|-------------------|---|-------------------------|
| 0    | Tunnelling + development      | (864)             | 1   | (864)                   |
| 0    | Equipment                     | (328)             | 1   | (328)                   |
| 1    | Revenue                       | 2000              | 0.833   | 1666                    |
| 2    | Revenue                       | 2500              | 0.694   | 1735                    |
| 3    | Revenue                       | 3125              | 0.579   | 1809.4                  |
| 4    | Revenue                       | 3906              | 0.482   | 1882.7                  |
| 5    | Revenue                       | 4882.5            | 0.402   | 1962.8                  |
| 1-5  | Labour costs                  | (600)             | 5 (increase in labour cost of 20% p.a. offset by 20% discount rate)         | (3000)                  |
| 1-5  | Other variable costs          | (300)             | 5 (increase in other variable cost of 20% p.a. offset by 20% discount rate) | (1500)                  |
| 1    | lost contribution from labour | (300)             | 0.833   | (249.9)                 |
| 5    | Make site good                | (450)             | 0.402   | (180.9)                 |
| 5    | 'Scrap value' / save costs    | 150               | 0.402   | 60.3                    |
|      |                               |                   |   | 2993.4                  |

$$NPV = +2,993,400$$

In view of the positive net present value, the project should be accepted and Lithium should proceed.

[60%]  
[100%]

# 1.6) Return on Capital Employed (ROCE)

£'000

|   |                |
|---|----------------|
| Tunnelling & development expense  | (864)          |
| Depreciation of equipment $(328\ 000/10 = 32\ 800 \times 5 = 164\ 000)$ | (164)          |
| Survey costs ('sunk', as per pricing)<br>$3 \times 225\ 000 = 675\ 000$ | (675)          |
| Extra Revenue $(2000 + 2500 + 3125 + 3906 + 4882.5)$                    | 16 413.5       |
| Extra labour expenses $(720 + 864 + 1036.8 + 1244.2 + 1493)$            | (5 358)        |
| Make site good expenses after completion                                | (450)          |
| Extra Staff costs - first year  | (300)          |
| Extra variable costs $(360 + 432 + 518.4 + 622.1 + 746.5)$              | (2 679)        |
| Cost savings on completion  | 150            |
|   | <u>6 073.5</u> |

Average Annual Profit =  $\frac{6\ 073.5}{5}$

$\frac{864 + 328 + 675}{5}$

tunnelling + development costs      equipment      survey 'sunk' costs

=  $\frac{1214.7}{1867}$

= 65.1%

In view of the fact that the ROCE is below the target ROCE of 7%, the project should not be accepted.

(W1) Extra labour expenses

|      |                              |
|------|------------------------------|
| Yr 1 | $600 \times 1.2 = 720$       |
| Yr 2 | $720 \times 1.2 = 864$       |
| Yr 3 | $864 \times 1.2 = 1036.8$    |
| Yr 4 | $1036.8 \times 1.2 = 1244.2$ |
| Yr 5 | $1244.2 \times 1.2 = 1493$   |

(W2) Extra variable costs

|      |                            |
|------|----------------------------|
| Yr 1 | $300 \times 1.2 = 360$     |
| Yr 2 | $360 \times 1.2 = 432$     |
| Yr 3 | $432 \times 1.2 = 518.4$   |
| Yr 4 | $518.4 \times 1.2 = 622.1$ |
| Yr 5 | $622.1 \times 1.2 = 746.5$ |

Additional Note.

(Q) Treatment of survey costs

The survey costs mentioned in paragraph (Q) are sunk costs. These will be paid irrespective of whether or not the project is accepted. Sunk (or historic) costs should be excluded from capital investment decisions.

Hence, they are not taken into account in the net present value (NPV) calculation in part (a), used to estimate whether it is worthwhile for Lithium to proceed with the proposed mining project. However, in the calculation of return on capital employed (ROCE) in part (b), sunk costs have to be taken into account, as they have an impact on the calculation of profits.

~~Q1~~

Q2  
(a) (i) Material utilisation

|                                | Jan   | Feb   | March  | April  | May   | June  | Total  |
|--------------------------------|-------|-------|--------|--------|-------|-------|--------|
| Production quantity (W1)       | 5000  | 7500  | 10000  | 10000  | 7500  | 5000  | 45000  |
| @ 10kgs/unit<br>Materials used | 50000 | 75000 | 100000 | 100000 | 75000 | 50000 | 450000 |

(ii) Material purchases

|   | Jan                     | Feb                     | March                   | April                   | May                     | June                        | Total                    |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------------------------|--------------------------|
| Material used   | 50000                   | 75000                   | 100000                  | 100000                  | 75000                   | 50000<br><del>(40000)</del> | 450000                   |
| less: opening stock   | <u>(40000)</u><br>10000 | <u>(60000)</u><br>15000 | <u>(80000)</u><br>20000 | <u>(80000)</u><br>20000 | <u>(60000)</u><br>15000 | <u>(40000)</u><br>10000     | <u>(360000)</u><br>90000 |
| add: closing stock<br>(80% of next month's production quota (W1)) | 60000                   | 80000                   | 80000                   | 60000                   | 40000                   | 40000<br>(per question)     | 360000                   |
| Purchases (kg) ←  | <u>70000</u>            | <u>95000</u>            | <u>100000</u>           | <u>80000</u>            | <u>55000</u>            | <u>50000</u>                | <u>450000</u>            |
| @ 60/100 = 60.6 per kg  | 60p                     | 60p                     | 60p                     | 60p                     | 75p                     | 75p                         |                          |
| Purchases (£)<br>All April  | 42000                   | 57000                   | 60000                   | 48000                   | 41250                   | 37500                       | 285,750                  |

(iii) Skilled labour

|                            | Jan  | Feb  | Mar    | Apr    | May  | June | Total  |
|----------------------------|------|------|--------|--------|------|------|--------|
| Units produced (from (ii)) | 5000 | 7500 | 10 000 | 10 000 | 7500 | 5000 | 45 000 |

| Skilled labour cost (£5 per unit) | Jan    | Feb    | Mar    | Apr    | May    | June   | Total   |
|-----------------------------------|--------|--------|--------|--------|--------|--------|---------|
| £                                 | 25 000 | 37 500 | 50 000 | 50 000 | 37 500 | 25 000 | 225 000 |

(iv) Unskilled labour

|                            | Jan  | Feb  | Mar    | Apr    | May  | June | Total  |
|----------------------------|------|------|--------|--------|------|------|--------|
| Units produced (from (ii)) | 5000 | 7500 | 10 000 | 10 000 | 7500 | 5000 | 45 000 |

| Unskilled labour cost (£6 per unit) | Jan    | Feb    | Mar    | Apr    | May    | June   | Total   |
|-------------------------------------|--------|--------|--------|--------|--------|--------|---------|
| £                                   | 30 000 | 45 000 | 60 000 | 60 000 | 45 000 | 30 000 | 270 000 |



W1 Workings.  
Production budget (units)

|  | Jan          | Feb          | March         | April         | May          | June         | Total         |
|--|--------------|--------------|---------------|---------------|--------------|--------------|---------------|
| Sales (W2)                                     | 5,000        | 5,000        | 10,000        | 10,000        | 10,000       | 5,000        | 45,000        |
| Less: opening stock                            | (2,500)      | (2,500)      | (5,000)       | (5,000)       | (5,000)      | (2,500)      | (21,500)      |
|  | <u>2,500</u> | <u>2,500</u> | <u>5,000</u>  | <u>5,000</u>  | <u>5,000</u> | <u>2,500</u> | <u>22,500</u> |
| Add: closing stock (50% of next month's sales) | 2,500        | 5,000        | 5,000         | 5,000         | 2,500        | 2,500        | 22,500        |
| Production                                     | <u>5,000</u> | <u>7,500</u> | <u>10,000</u> | <u>10,000</u> | <u>7,500</u> | <u>5,000</u> | <u>45,000</u> |

W2 Sales by month

|                   | Jan     | Feb     | March   | April   | May     | June    | Total     |
|-------------------|---------|---------|---------|---------|---------|---------|-----------|
| Ordering          | 1       | 1       | 2       | 2       | 2       | 1       | 9         |
| Sales quantity    | 5,000   | 5,000   | 10,000  | 10,000  | 10,000  | 5,000   | 45,000    |
| Selling price (£) | 25      | 25      | 25      | 30      | 30      | 30      |           |
| Revenue (£)       | 125,000 | 125,000 | 250,000 | 300,000 | 300,000 | 150,000 | 1,250,000 |

W3 Cost per unit

|                        | To April     | To May       |
|------------------------|--------------|--------------|
| Raw materials (10 kgs) | 6.00         | 7.50         |
| Labor: skilled (£/hr)  | 5.00         | 5.00         |
| unskilled (£/hr)       | 6.00         | 6.00         |
| Production overheads   | 5.00         | 5.00         |
|                        | <u>22.00</u> | <u>23.50</u> |

(b) Budgeted profit and loss account for six months to 30 June 2006



|                                    |                  |                |
|------------------------------------|------------------|----------------|
| Sales (W2)                         |                  | 1,250,000      |
| less cost of sales                 |                  |                |
| opening stock raw materials        |                  |                |
| 40,000 kg @ £0.6                   | 24,000           |                |
| finished goods (W3)                | 55,000           |                |
| 2,500 @ £22                        | <u>79,000</u>    |                |
| Materials purchased (from a(ii))   | 285,750          |                |
| Skilled labor (from a(iii))        | 225,000          | 276,000        |
| unskilled labor (from a(iii))      | 270,000          |                |
| Production overheads (45,000 x £5) | 225,000          |                |
|                                    | <u>1,084,750</u> |                |
| less closing stock: raw materials  |                  |                |
| 40,000 kg @ 0.75                   | (30,000)         |                |
| finished goods (W3)                | (58,750)         |                |
| £23.50 x 2,500 units               | <u>(996,000)</u> |                |
| Gross Profit                       |                  | <u>254,000</u> |

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(4) - To plan and control income and expenditure in order to achieve maximum profitability

- To ensure that sufficient working capital is available for the efficient operation of the company.
- To direct capital expenditure in the most profitable direction
  - To centralise control
  - To decentralise responsibility
- To provide a yardstick against which actual results may be compared
- To show management when action is needed to remedy a situation
- To aid management in decision-making when unforeseen conditions affect the budget.





**Answer to q3: creative accounting (crib)**

Define and discuss the term creative accounting:- sticking within the legal letter of the law re: accounting rules/regulations, but going against the spirit of them. Discuss in relation to 6 recent cases, including, for example, Enron (including use of special purpose vehicles, off-balance sheet items, equity accounting for subsidiaries etc), WorldCom (overstating income and understating expenses), AOL Time Warner (capitalising and amortising expenses), Tyco (theft/fraud), Ahold, Boston Chicken (treating subsidiary as an associate), Cendant (booking revenue early, delaying expenses (cancellations), capitalising and amortising expenses!), Waste Management (depreciation policy change), Sunbeam (revenue recognition), Sormatic Electronics Corporation (overstated earnings by altering invoice dates), Qwest (accounting treatment of swaps of bandwidth, APB 29 violation), American International Group (no insurance existed...type of fraud) and Computer Associates (revenue recognition).