Answers

There is no single correct solution to the case study. The points made below should, therefore, be regarded as indicative.

(a) (i) The market value of equity for Kilmar plc is £54m (i.e. 10m x £5·40)
The market value of debt is £18m [i.e. £15m x (£120/£100)]
The ungeared beta of Kilmar plc is calculated as follows

β_a = β_e [E/E + D(1 – t)]
Where:
β_a = asset beta
β_e = equity beta
E = equity proportion within capital structure
D = debt proportion within capital structure
t = corporation tax rate
= 1·7 [75/{75 + 25 (1 – 0·2)}]
β_a = $\underline{1·342}$

It is assumed that the debt of Kilmar plc is risk free.

The cost of equity capital for Burrator plc can be calculated as follows:

K_e = 3·2 + 1·342 (10·5 – 3·2)

= 13% (to nearest per cent)

(ii) Assuming an 8% market growth rate, royalties for each of the products are calculated as follows:

	2007	2008	2009	2010	2011	2012	2013–2017
Total market (£m)	864·0	933·1	1,007·8	1,088·4	1,175·5	1,269·5	1,371·1
Derova – market share (%)	2·0	1·5	1·0	0·5			
Derova sales (£m) 30%	17·3	14·0	10·1	5·4			
Royalty (£m)	5·2	4·2	3·0	1·6			
Polova – market share %	3·2	2·4	1·0	0·4			
Polova sales (£m) 30%	27·6	22·4	10·1	4·4			
Royalty (£m)	8·3	6·7	3·0	1·3			
AN113 – market share (%)	–	1·5	1·8	2·0	2·0	2·5	2·5
Total sales (£m) 20%		14·0	18·1	21·8	23·5	31·7	34·3
Royalty (£m)		2·8	3·6	4·4	4·7	6·3	6·9
AN144 – market share (%)	–	0·2	1·2	2·4	3·0	3·6	3·6
Total sales (£m) 40%		1·9	12·1	26·1	35·3	45·7	49·4
Royalty (£m)		0·8	4·8	10·4	14·1	18·3	19·8
AN175 – market share	–	0·1	1·0	1·8	2·2	2·4	2·4
Total sales (£m) 60%		0·9	10·1	19·6	25·9	30·5	32·9
Royalty (£m)		0·5	6·1	11·8	15·5	18·3	19·7

The forecast net cash flows are as follows:

	2007	2008	2009	2010	2011	2012	2013 – 2017
	£m	£m	£m	£m	£m	£m	£m
Derova	5·2	4·2	3·0	1·6			
Polova	8·3	6·7	3·0	1·3			
AN113 – 10%		0·3	0·4	0·4	0·5	0·6	0·7
AN144 – 30%		0·2	1·4	3·1	4·2	5·5	5·9
AN175 – 70%		0·3	4·2	8·3	10·9	12·8	13·8
	13·5	11·7	12·0	14·7	15·6	18·9	20·4
Costs 45%	6·1	5·3	5·4	6·6	7·0	8·5	9·2
	7·4	6·4	6·6	8·1	8-6	10·4	11·2
Cash tax 20%	1·5	1·3	1·3	1·6	1·7	2·1	2·2
Net cash flows	5·9	5·1	5·3	6·5	6·9	8·3	9·0
Disc. factors (13%)	0·885	0·783	0·693	0·613	0·543	0·480	1·43
PV	5·2	4·0	3·7	4·0	3·7	4·0	12·9
Total PV	37·5						

Notes:

1. Development costs have been ignored as they are re-imbursed.
2. As cash flows are constant from 2013–2017, the sum of the discount rates can be used as a short cut.

The value of a share in Burrator plc, assuming an 8% increase in the market size year on year is:

= £37·5/10m

= £3·75

The same methodology to that used above can be also used to value a share on the basis of a 10% annual increase in market size

(iii) The price/earnings ratio of Kilmar plc can be used as a basis for valuing the shares of Burrator plc.

Earnings per share of Kilmar plc = £7m/10m
= £0·70

P/E ratio of Kilmar plc = £5·40/£0·70
= 7·7 times

Earning per share of Burrator plc = £6m/10m
= £0·60

Value per share = P/E ratio x EPS
= 7·7 x £0·60
= £4·62

(iv) No. of shares in Kes Pharmaceuticals plc = 500m
No. of shares in Burrator plc = 10m
Share allocation 1 share in Burrator plc for every 50 (500/10) shares held in Kes Pharmaceuticals plc
Earnings per share of Kes Pharmaceuticals plc = £432m/500m
= £0·864
Value of one share in Kes Pharmaceuticals plc before the demerger
10 x £0·864 = £8·64

Value of shareholding (100,000 x £8·64) = £864,000

Value of one share in Kes Pharmaceuticals plc after the demerger
10·5 x £0·864 = £9·07

Value of shareholding (100,000 x £9·07) = £907,000

Value of one share in Burrator plc = £3·75

Value of shareholding in Burrator plc [(100,000/50) x £3·75] = £7,500

Thus, the total wealth of the shareholder will be £914,500 (i.e. £907,000 + £7,500) compared to £864,000 before demerger.

The above calculations suggest significant benefits to the shareholder from a demerger.

(b) The following criteria may be considered when seeking to evaluate the performance of a non-executive director:

- Willingness to invest time and effort in understanding the business and the issues that it faces;
- Willingness to prepare thoroughly for board meetings;
- Value of contribution to board meetings and to meetings of board sub-committees such as the audit committee and remuneration committee;
- Use of experience and knowledge in dealing with problems, particularly those concerning strategy and risk management;
- Ability to challenge assertions and assumptions made by executive directors in support of particular plans and strategies;
- Ability to demonstrate independence of mind and judgement, particularly when under pressure;
- Persistence in following up unresolved issues;
- Ability to act as part of a team when required;
- Effectiveness of relations with board members and senior managers;
- Willingness to invest time in order to acquire further skills and knowledge necessary to keep up with the changes in the industry and business world.

(c) Various risks may be faced by the company. Some of the more important may be:

- Product liability arising from adverse reactions or complaints;
- Loss of reputation arising from design defects or ineffective products;
- Failure to comply with laws and regulations governing the testing and approval of products;
- Failure to maintain strong links with research-based institutions and universities;
- Failure to attract and/or retain key staff;
- Reliance on governments maintaining or increasing healthcare expenditure;
- Development of more effective and/or cheaper products by competitors;
- Failure to develop new products;
- Reliance on other parties to manufacture, market and supply the products developed;
- Patent infringement.

The ways in which each of the risks identified should be assessed and managed must be discussed.

			Marks
(a)	**(i)**	7 marks ungeared equity, 3 marks CAPM calculation	10
	(ii)	(1) 8 marks royalties, 8 marks net cash flows, 2 marks share value calculation (2) 4 marks royalties, 4 marks net cash flows, 1 mark share value	27
	(iii)	2 marks P/E ratio Kilmar plc, 2 marks EPS Burrator plc, 1 mark share value, 3 marks comments	8
	(iv)	2 marks share allocation, 4 marks Kes pre-merger value, 2 marks Kes post-merger value 2 marks total post-merger wealth, 1 mark comments	11
(b)		2 marks per criteria (max. 14 marks), 2 marks report format	16
(c)		7 marks, for identification, 7 marks assessment, 12 marks for managing the risks, 2 marks report format	28
			100