MARK PLAN AND EXAMINER'S COMMENTARY

The marking plan set out below was that used to mark this question. Markers were encouraged to use discretion and to award partial marks where a point was either not explained fully or made by implication. More marks were available than could be awarded for each requirement. This allowed credit to be given for a variety of valid points which were made by candidates.

Question 1

Total Marks: 30

General comments
This was a five-part question which tested the candidates' understanding of the risk management element of the syllabus. The scenario of the questions was that a risk management company was giving advice to two clients. In part (a) of the question a client had previously hedged foreign exchange rate risk using the money markets and the client's bank had suggested using either forward contracts or foreign currency options. In Part (b) of the question a client wished to hedge a portfolio of shares against a fall in value. In Part (c) of the question a client was requesting advice on a whether she should hold or sell some shares that she owned.

(a) (i)

Matching receipts and payments results in a net receipt of **€1.3 million** (€3.4 m - €2.1 m)

For a forward contract the exchange rate is €/£ 1.2176 **(€1.2188-€0.0012**)

The forward contract will result in a sterling receipt of **£1,067,674** (€1,300,000/€1,2176)

Using the money markets, Pared will borrow in euros against the receipt, buy sterling at the spot rate and invest in sterling.
Borrow €1,300,000/(1+0.036x3/12) = **€1,288,404**
Buy sterling spot €1,288,404/€1.2188 = **£1,057,109**
Invest in sterling to yield a receipt in total of £1,057,109 x (1+0.034x3/12) = **£1,066,094**

Options. The **call** option premium is payable up front and together with interest will cost
€1,300,000 x £0.02 = **£26,000**. £26,000 x (1+0.044x3/12) = **£26,286 (assuming overdraft, interest foregone also ok)**

If the spot exchange rate on 28 February is €/£1.2182 the option will be **exercised** since the exercise price of €/£1,2180 is more attractive.
This will result in a receipt in sterling of €1,300,000/€1.2180 **= £1,067,323**
After taking the premium into account the net receipt will be £1,067,323 - £26,286 = **£1,041,037**

Well answered by many candidates, however, it was disappointing to note the following common errors made by a large number of candidates on what should have been very straightforward, well rehearsed calculations which have been examined many times before. Some common errors were: choosing the incorrect exchange rates; adding premiums to the spot rate; not netting receipts and payments; choosing the incorrect interest rates for the money market hedge; treating an over the counter option like a traded option; converting an option premium in £ to €, when it is payable in £.

Total possible marks	11
Maximum full marks	11

(a) (ii)

The sterling receipt at the spot rate on 28 February 2015 would be: €1,300,000/€1.2182 = £1,067,148
No matter what the spot exchange rate is on 28 February 2015 the results of the forward contract and money market hedge will be unchanged. The forward contract is more attractive since it results in a higher sterling receipt and is better than spot, unlike MM
However if Pared needs funds in the UK earlier than 28 February 2015 the money market hedge may be attractive.
Both the forward contract and the money market hedge rely upon the customer paying on time/paying at all.
The option results in the lowest net receipt due to the premium, which is expensive. However the option does allow Pared to exploit upside potential. For example if the euro were to strengthen significantly against sterling, Pared could let the option lapse.
If the customer does not pay on time the premium will be lost.
Given the high cost of the option, I would recommend that Pared uses forward contracts to hedge its FOREX

Well answered by many candidates, however easy knowledge marks were often missed, many students missed the marks for giving a conclusion.

Total possible marks	9
Maximum full marks	9

(b)(i)

Since SGI wishes to protect itself against a fall in the portfolio it will need to **sell** index futures on 30 November 2014.
The number of contracts to sell is: £100 million/(6,700 x £10) = 1492.53. Round to **1,493** contracts.
On 31 December 2014 the loss on the portfolio will be £100 million - £95 million = £**5** million
The futures will be closed out and a gain will be made of: (6,700-6,365) x £10 x 1,493 = **£5,001,550.**

This was well answered by most students but common errors were: incorrect calculations for the number of contracts; whether to sell or buy the futures when setting up the hedge; incorrect close out calculations.

Total possible marks	3
Maximum full marks	3

(b)(ii)

Disadvantages include:
Basis risk may exist which means that the price of a futures contract will normally be different to the spot price on any given day. This creates the potential for excess losses or gains.
Contracts are in standard sizes and the number of contracts to sell will have to be rounded.
The disadvantage of the futures hedge is that SGI is locked in to a portfolio value of approximately £100 million. If the portfolio were to increase in value SGI would make a loss on its futures trade and can not therefore take advantage of any upside potential.
Another disadvantage is the requirement of a margin to be deposited at the exchange and there is the potential to have to make margin calls.

Well answered by many candidates but again weaker candidates lost marks by only mentioning basis risk and rounding of contracts

Total possible marks	4
Maximum full marks	4

(c)

There is a clear conflict of interest here and the employee of NRMS should not disclose to Yolanda Luz the information that he has gained from SGI. It would be appropriate to refer Yolanda to another employee in NRMS for advice regarding whether to hold or sell the shares. There is also the potential for Yolanda Luz to be guilty of Insider Trading.

Reasonably well answered.

Total possible marks	3
Maximum full marks	3

Question 2

Total Marks: 35

General comments
This was a five-part question that tested the candidates' understanding of the investment decisions element of the syllabus. The scenario of the question was that a company wished to restructure by the divestment of a division. Part (a) of the question required candidates to value the division being divested. Part (b) of the question required candidates to calculate the sensitivity of the division's value to certain inputs into the valuation model. Part (c) of the question required candidates to outline another valuation technique that could be used to value the division. Part (d) of the question required candidates to discuss the possible reasons for the divestment of the division. Part (e) of the question required candidates to discuss whether the advantages and disadvantages of different methods that could be used for the divestment.

(a)

Probability	Sales £ m	Pro x Sales £m
0.4	25	10
0.4	130	52
0.2	105	21
Expected Sales		83

Contribution = £83 m x 15% = £12.45 m in 2015 £s already

Nominal discount rate= (1.07)x(1.03) -1 = 10% (or 10.21%)

	0 £ m	1 £ m	2 £	3 £ m	4 £ m
Contribution		12.45	14.38	16.61	19.18
Fixed Costs		(5)	(5.15)	(5.3)	(5.46)
Operating cash flows		7.45	9.23	11.31	13.72
Tax 21%		(1.56)	(1.94)	(2.38)	(2.88)
After tax operating cash flows		5.89	7.29	8.93	10.84
Vehicles and Equipment	(10)				2
Tax saved on Cas	0.38	0.31	0.25	0.21	0.53
Working Capital	(5)	(0.78)	(0.9)	(1.03)	7.71
Continuing value					108.4
Net cash flows	(14.62)	5.42	6.64	8.11	129.47
PV factors at 10%	1	0.909	0.826	0.751	0.683
Present value	(14.62)	4.93	5.48	6.09	88.43
NPV	90.31				

CAs and
Tax saved.

	Cost/WDV	CA	Tax
0	10	1.8	0.38
1	8.2	1.48	0.31
2	6.72	1.21	0.25
3	5.51	0.99	0.21
4	4.52		
Sale	-2	2.52	0.53

Contribution:
Year 2: 12.45 x 1.10 x 1.05 = £14.38m
Year 3 : 14.38 x 1.10 x 1.05 = £16.61m
Year 4 : 16.61 x 1.10 x 1.05 = £19.81m

Working capital:

Year 1: 5 x 1.1 x 1.05 – 5 = £0.78m
Year 2: 5.78 x 1.1 x 1.05 – 5.78 = £0.90m
Year 3: 6.68 x 1.10 x 1.05 -6.68 = £1.03m
Year 4: £7.71m

Continuing value: 10.84 x 10 = £108.4 m

Well answered by the majority of students. The valuation was to be carried out using NPV analysis and the question was designed to give 7 or 8 basic marks, however some errors that many candidates made were: incorrect adjustments for price increases, inflation and growth; incorrect working capital computations; discounting nominal cash flows with a real cost of capital; incorrect continuing value computations.

Total possible marks	16
Maximum full marks	16

(b)

Sensitivity	**1 £m**	**2 £m**	**3 £m**	**4 £m**
Contribution X (1-0.21)	9.84	11.36	13.12	15.15
Continuing value				151.5
	9.84	11.36	13.12	166.65
PV factors at 10%	0.909	0.826	0.751	0.683
Present Value	9	9	10	114
Total present value	142			
Sensitivity 90.31/142	63.4%			

A fall in sales of £83 million to: 83(1-0.634) = £30.12 million.

As there is a 40% chance that the sales will be £25 million the management of Rossendale should consider how this will be viewed by the markets if Inside&Out were to be listed, or by a potential buyer.

Quite poor attempts by a lot of students. There were many basic errors were made in the sensitivity computations: using sales instead of contribution; omitting tax; incorrect application of the formula for sensitivity; no interpretation of the results and no, or little, reference to the probability distribution of sales

Total possible marks	7
Maximum full marks	5

(c)

Inside&Out could be valued by reference to a multiple such as a p/e ratio. A proxy company would have to be chosen that has similar operating characteristics to Inside&Out.

This multiple could be adjusted to take into account that Inside&Out is a division of Rossendale and a not listed company.

Quite poor answers and many students suggest valuation methods inappropriate for the valuation of a service company, or just gave a list of all valuation techniques. It was disappointing to see students use this part of the question to write about SVA which gained no marks.

Total possible marks	3
Maximum full marks	3

(d)

Appropriate reasons for divestment in Rossendale's circumstances include:
Lack of fit – Inside&Out is a diversification from Rossendale's core activities and the divestment will allow the firm to concentrate on developing its hotel chain. This would particularly be the case if the division's size is making increasing demands on senior management's time.

Conglomerate discount – a belief that the individual parts of the business can be worth more than the whole. This is sometimes expressed as 5 – 1 = 5!

Liquidity – divestment by way of a sale will provide funds for further expansion of the hotel chain or to pay down debt.

Reasonably well answered. However weaker students only mentioned lack of fit.

Total possible marks	5
Maximum full marks	5

(e) i)

A demerger (or spin-off) into two listed companies – Advantages include: no change in ownership, since shareholders will hold shares in two separate businesses; shareholders can enjoy the growth prospects of both companies; the two companies will have separate corporate identities and shareholders can choose whether they wish to realise their investment in one or other of the businesses; the spin-off may avoid the problem of conglomerate discount; it may avoid the takeover of the whole business by separating a particularly attractive part of the business. The major disadvantage is that the demerger will not result in any cash inflows for Rossendale.

ii) A sell of has the advantage that it will provide cash that can be invested in the development of the hotel chain. The disadvantages include: the shareholders of Rossendale will no longer be able to participate in the future growth potential of Inside&Out; it may be difficult to find a buyer and to agree on the price, especially with the uncertainty attached to the projected sales.

iii) A management buyout (MBO) – The same advantages and disadvantages apply to an MBO as to a sell-off. However the major advantage is that Rossendale may have a willing buyer that has knowledge of Inside&Out. The management team will have knowledge of the risks and uncertainties attached to the business and may be more willing to take the risk than a third party buyer. The management team may also be keen to safeguard their jobs.

However the management team may have difficulty raising the funds to buy the division.

It was evident that many students only had a superficial knowledge of this area of the syllabus.

Total possible marks	9
Maximum full marks	6

Question 3

Total Marks: 35

General comments
This was a six-part question that tested the candidates' understanding of the financing options element of the syllabus.
The scenario of the question was that a company was planning its capital expenditure programme and was discussing how best to raise the additional funds required, either by debt or equity.
Part (a) of the question required candidates to calculate the current WACC of the company. Part (b) of the question required candidates to make some calculations in relation to a debenture issue and to discuss certain practical aspects of the debenture issue. Part (c) of the question required candidates to make some calculations regarding rights issues and to discuss certain practical aspects of rights issues. Part (d) of the question required candidates to discuss the advantages and disadvantages of the two alternative sources of funds (debt or equity) and to discuss which would be most appropriate for the company. Part (e) of the question required candidates to discuss the hurdle rate that should be used to appraise the projects that the new capital is to be invested in. Part (f) of the question required candidates to discuss alternatives to the CAPM.

(a)

The cost of equity = 2% + 1.2 x 5% = 8%

The cost of debt will be the internal rate of return (IRR) of the 4% debenture less tax relief. The IRR is calculated as follows:

The ex interest price of the debentures = £108 - £4 = £104

Timing - years	Cash Flow £	Factors at 1%	PV £	Factors at 5%	PV £
0	(104)	1	(104)	1	(104)
1-4	4	3.902	15.61	3.546	14.18
4	100	0.961	96.10	0.823	82.30
			7.71		(7.52)

IRR = 1 + (7.71/(7.71+7.52)x4 = 3.03%

Kd = 3.03(1-0.21) = 2.39%

Market values:
Equity 360 million x £5.6 = £2,016 million
Debt £300 million x 104/100 = £312 million

WACC = (8% x 2016 + 2.39% x 312)/(2016+312) = 7.25%

There were some disappointing attempts at this part of the question which has been examined many times before, common errors were: deducting the risk free rate from the market risk premium; adjusting the beta factor for gearing when not required to do so; incorrect computation of the market value of debt; incorrect computation of the yield to maturity of the existing debenture; no deduction of tax from the cost of debt.

Total possible marks	6
Maximum full marks	6

(b)

The issue price is:

Timing - years	Cash Flow £	Factors at 5%	PV £
1-10	3	7.722	23.17
10	100	0.614	61.40
		Issue price	84.57

The total nominal value will be: £200/0.8457 = £236.5 million.

Possible reasons for the yield of 5% on the new debentures being greater than the 3.03% yield on the current debentures are: expectations of higher interest rates in the future since the new debentures mature in 2024 rather than 2018 for the current debentures; higher risk; market appetite for the issue (price to succeed); the increase in Wiggins's financial risk.

Answers were disappointing since this has been asked before. Candidates were required to calculate the issue price for the new debentures, they were given the coupon, the redemption value, which was at par, the redemption date and the yield to maturity. They then had to calculate the nominal value of the total debt to be issued. Common errors were: Calculating the YTM when it was given in the question; no grossing up to arrive at the total nominal value; deducting tax from the yield to maturity in the question; no discussion of why the YTM on the new issue was different to that of the existing debentures. However the better candidates gained full marks on this section.

Total possible marks	5
Maximum full marks	5

(c)

A 1 for 8 rights issue will require 360/8 =**45** million new shares to be issued.

The price per share = £200 million / 45 million = £**4.44**

A discount on the current market price of: 5.60-4.44/5.6 = **21% (or £1.16)**

The theoretical ex-rights price is:

	Number of shares	Value per share £	Number x Value £
Existing shares	8	5.60	44.80
New shares	1	4.44	4.44
Total shares	9	Total value	49.24

Theoretical ex-rights price = £49.24/9 = **£5.47**.

The actual share price will depend on the markets reaction to the rights issue eg fully taken up and whether the proceeds are invested in positive net present value projects.

If we were told the net present value of the projects this could be incorporated in the theoretical ex-rights price of £5.47 giving a more realistic estimate of the actual share price post rights issue.

Well answered by most students. However weaker students were calculating the discount that the rights issue represents as the difference between the current share price and the theoretical ex-rights price.

Total possible marks	6
Maximum full marks	5

(d)

General advantages and disadvantages are:

Equity: The advantage of a rights issue is that there will be no increase in gearing or reduction in interest cover. However the disadvantages are cost, timing and dilution of control if the rights are not taken up. The rights issue may also fail to be successful; however this can be mitigated by the issue being underwritten. (**debt = converse so no more marks)**

In the circumstances of Wiggins plc the two alternatives would have the following effects on gearing and interest cover:

Current position:
Gearing = £312 / £2016 = **15.5%**
Interest cover = £239 / £12 = **20** times

If debt is issued:
Gearing = £312 + £200 / £2016 = **25**%
Interest cover =
Interest = £12 + (£236.5 x 0.03) = **£19.1** Interest cover based on current earnings = £239/£19.1 = **12.5** times.

With a rights issue:

Gearing = £312 / (£2016 + £200*) = **14%**
No change in interest cover (based on current earnings)
*Rounding

In both cases the figures would be affected by the additional earnings from the new investments and any change in the share price.

The rights issue slightly reduces the gearing from 15.5% to 14%, this may not be desirable since Wiggins's gearing is well below the average for the sector of 30%. Interest cover at 20 times is well above the industry average of 11, this is a very safe margin. This analysis indicates that Wiggins has spare debt capacity.

The debenture issue increase Wiggins's gearing to 25% which is still below the industry average of 30%. The interest cover of 12.5 times is now much closer to the industry average of 11 times. The affect on Wiggins's share price and also the cost of debt is hard to predict, however having a gearing ratio and interest cover close to the industry averages may be welcomed by the markets and shareholders.

Having regard to the gearing and interest cover comments above the debenture issue is likely to be preferred since it is quicker and less costly than a rights issue.

It was disappointing to see many candidates not using the information given in the question regarding the industry average interest cover and gearing. Many candidates made the following errors: providing a discussion, and diagrams, of M & M's theory on capital structure; just a general discussion of debt and equity with no reference to the scenario of the question; no reference to the industry averages; incorrect gearing calculation; incorrect interest cover calculations, often using after interest and sometimes after tax profits; no conclusion.

Total possible marks	12
Maximum full marks	10

(e)

Wiggins's long term funding currently has a market value of £2328 million and the company plans to raise £200 million which represents an increase of 9% on that current market value.
This is a small increase and it is reasonable to use the existing WACC as the hurdle rate.

However since the new finance will be used to invest in some projects in a different industry sector than current operations, the discount rate will have to be adjusted to reflect the systematic risk of those projects.

It would not be appropriate to use the individual cost of each source. Regarding equity, the company is financed from a pool of funds and WACC should be the hurdle rate. Regarding debt, the cost of debt represents the risk to the lenders and not that of the projects.

This was not well answered with many students not considering the scale of the new finance raised in proportion to the current market values of equity and debt. Weaker students suggested that the individual cost of each source of funds should be used as the hurdle rate.

Total possible marks	6
Maximum full marks	5

(f)

The CAPM specifies that the only risk factor that should be taken into account is the market risk premium. Subsequent empirical research has shown that there may be other factors in addition to market risk premium that explain differences in asset returns, such as interest rates and industrial production.

Two models which analyse returns on multiple factors are:

The arbitrage pricing model (APM). APM uses four key factors to analyse returns, these factors are: unanticipated inflation; changes in the expected level of industrial production; changes in the risk premium of bonds; unanticipated changes in the term structure of interest rates. The model works in a similar way to the CAPM in that it assumes that investors are fully diversified. A beta for each factor is calculated and applied to the risk premium.

Famma and French identified two factors in addition to the market portfolio that explain company returns namely size and the ratio of book value to market value. Again a beta factor
Is calculated and applied to the risk premium. The model has been augmented with the addition of a fourth factor namely the momentum factor.

This was not well answered with many students only discussing the weaknesses of the CAPM.

Total possible marks	6
Maximum full marks	4