THE INSTITUTE OF CHARTERED ACCOUNTANTS OF NIGERIA

SKILLS LEVEL EXAMINATION-PILOT QUESTIONS AND SOLUTIONS 2025

Time allowed: 3¼ hours (including 15 minutes reading time)

INSTRUCTION: YOU ARE REQUIRED TO ATTEMPT FIVE OUT OF THE SEVEN QUESTIONS IN THIS PAPER

SECTION A: COMPULSORY QUESTION (30 MARKS)

Question 1

Femi Ltd (FL) is an importer of high-quality laser printers which can be used with a range of microcomputers. The statement of financial position of FL as at 31 May 2025 is as follows:

	₦000	₦000	₦000
Non-current assets			
Freehold premises at cost	460		
Less: Accumulated depreciation	30	430	
Fixtures and fittings at cost	35		
Less: Accumulated depreciation	10	25	
			455
Current assets			
Inventory		24	
Receivables		34	
Cash at bank		2	
		60	
Payables: Amounts falling due within one year			
Trade payables	22		
Taxation	14		
Dividends	10	46	14
			469
Payables: Amounts falling due beyond one year			
Loan – Highland Bank		125	125
Capital and reserves			
₦1 ordinary shares			200
Retained profit			144
			344
			469

The following forecast information is available for the year ended May 31, 2026.

i) Sales are expected to be ₦280,000 for the year. 60 per cent of sales are on credit and it is expected that, at the year end, three months' credit sales will be outstanding. Sales revenues accrue evenly over the year.

ii) Purchases of inventory during the year will be ₦186,000 and will accrue evenly over the year. All purchases are on credit and at the year end it is expected that two months' purchases will remain unpaid.

iii) Fixtures and fittings costing ₦25,000 will be purchased and paid for during the year. Depreciation is charged at 10 per cent on the cost of fixtures and fitting held at the year end.

iv) Depreciation is charged on freehold premises at 2 per cent on cost.

v) On June 1, 2025 ₦30,000 of the loan from the Highland Bank is to be repaid. Interest on this loan is at the rate of 13 per cent per annum and all interest accrued to May 31, 2026 will be paid on that day.

vi) Stock-in-trade at the year end is expected to be 25 per cent higher than at the beginning of the year.

vii) Wages for the year will be ₦34,000. At the year end it is estimated that ₦4,000 of this total will remain unpaid.

viii) Other overhead expenses for the year (excluding those mentioned above) are expected to be ₦21,000. At the year end it is expected that ₦3,000 of this total will still be unpaid.

ix) A dividend of 5 kobo per share is expected to be announced all the year end. The dividend outstanding at the beginning of the year will be paid during the year.

x) Corporate tax is payable at the rate of 35 per cent. Corporate tax outstanding at the beginning of the year will be paid during the year.

All workings should be shown to the nearest ₦000.

Required:

a. Prepare a forecast profit or loss account for the year endedMay31, 2026. (12 Marks)
b. Prepare a forecast statement of financial position as at May 31, 2026 (8 marks)
c. Comment on the significant features revealed by these statements. (4 marks)
d. Identify and briefly discuss **four** major differences between Islamic finance and conventional finance (6 marks)

SECTION B: YOU ARE REQUIRED TO ATTEMPT TWO OUT OF THREE QUESTIONS IN THIS SECTION (40 MARKS)

Question 2

Feli Plc (Feli) is planning to buy Lola Plc (Lola), a company in the same business sector, and is considering paying cash for the shares of the company. The cash would be raised by Feli through a 1 for 3 rights issue at a 20% discount to its current share price.

The purchase price of the 1 million issued shares of Lola would be equal to the rights issue funds raised, less issue costs of ₦320,000. Earnings per share of Lola at the time of acquisition would be ₦0.448 per share. As a result of acquiring Lola, Feli expects to gain annual after-tax savings of ₦96,000.

Feli maintains a payout ratio of 50% and earnings per share are currently ₦0.64 per share. Dividend growth of 5% per year is expected for the foreseeable future and the company has a cost of equity of 12% per year.

Information from Feli's statement of financial position:

Equity and liabilities	**₦000**	**₦000**
Shares (₦1 par value)	3,000	
Reserves		4,300
		7,300
Non-current liabilities		
8% loan notes	5,000	
Current liabilities		(2,200)
Total equity and liabilities		14,500

Required:

a. Calculate the current ex dividend share price of Feli and the current market capitalisation of Feli using the dividend growth model. (5 marks)

b. Assuming the rights issue takes place and ignoring the proposed use of the funds raised, calculate:
   i. the rights issue price per share;
   ii. the cash raised
   iii. the theoretical ex rights price per share; and
   iv. the market capitalisation of Feli (6 marks)

c. Using the price/ earnings ratio method, calculate the share price and market capitalisation of Lola before the acquisition (3 marks)

d. Assuming a semi-strong form efficient capital market, calculate and comment on the post acquisition market capitalisation of Feli in the following circumstances:
   i. Feli does not announce the expected annual after-tax savings; and
   ii. the expected after-tax savings are made public. (6 marks)

(Total: 20 marks)

Question 3

Yemi plc, a manufacturer of school bags has four main suppliers. The company's finance director has asked you as his assistant to prepare an analysis of the cost of using trade credit as a source of finance.

Your initial analysis has identified that suppliers offer different terms of trade.

Specific details are as follows:

Supplier No. 1 charges $1^1/_2$% of the invoice value per monthly period from the date on which payment is due. This charge is only made if the payment is one month or more past the due date.

Supplier No. 2 charges a fixed penalty of $2^1/_2$% of the invoice value for late payment. This penalty is charged even if the payment is only one day late.

Supplier No. 3 offers a $2^1/_2$% discount if payment is received within one month of the invoice date. Payment after one month is net invoice value.

Supplier No. 4 charges 12% per annum simple interest on the invoice value if payment is made after the due date.

Notes:

1. Total purchases from all suppliers is ₦300m
2. 40% of purchases are made from supplier No. 1 with the remainder being equally split between suppliers 2, 3 and 4.
3. All four suppliers have a due date for payment one month from the invoice date.
4. Yemi plc takes three months to pay each of the four suppliers.
5. Yemi plc's cost of funds is normally 10%.

Required:

a. Calculate the NET annual cost of delaying payment beyond the agreed time, as is currently being practised by Yemi plc, to each of the four suppliers. Identify which, if any, of the trade credit arrangements is financially beneficial to Yemi plc. (14 marks)

b. Identify and briefly discuss THREE advantages and THREE disadvantages to Yemi plc of using the delaying of payments to suppliers as a source of finance. (6 marks)

(Total: 20 marks)

Question 4

Big Oil Ltd engages in off-shore drilling operations for oil deposits. The company has recently spent $5 million in surveying a region in Ondo State and has found the existence of significant oil deposits there. The sea bed in the region, however, has a rock formation that may make access to the oil deposits difficult. The total oil deposits in the region have been estimated at 30 million barrels but the amount extracted will vary according to the conditions faced when drilling operations commence. The company's senior geologist believes that three possible outcomes are likely from drilling operations and has made the following estimates concerning the percentage of total oil deposits that will be extracted under each outcome.

Outcome	Percentage of total oil deposits extracted	Probability
1.	100%	0.1
2.	40%	0.5
3.	25%	0.4

If the company decides to go ahead with the drilling operation, an immediate payment of $40 million for drilling rights, along with annual payments of $5 for each barrel of oil extracted must be made to the government.

Equipment costing $125 million must be acquired immediately but drilling will not commence until the second year of the four-year licence period. It is expected that, whichever of the above outcomes arise, the oil will be extracted evenly over the drilling period. Annual operating costs (excluding any payments to the government) will be $120 million in the first year and $160 million for each of the remaining three years of the licence. At the end of the licence period, the equipment will be sold at a price that is equal to its original cost less $8 for each barrel of oil that has been extracted.

Oil prices over the period of the drilling licence are estimated to be as follows:

Year	Price per barrel
1.	$70
2.	$85
3.	$75
4.	$100

The company has a cost of capital of 14%.
Work out your answers in million dollars.

Required:

a. Calculate the expected net present value (ENPV) of the investment proposal. (10 marks)
b. Calculate the net present value of the worst possible outcome. (5 marks)
c. Comment on the results of your calculations in (a) and (b) above (2 marks)
d. Discuss the weaknesses of the ENPV approach for decision-making in this case. (3 marks)

(Total: 20 marks)

SECTION C: YOU ARE REQUIRED TO ATTEMPT TWO OUT OF THREE QUESTIONS IN THIS SECTION. (30 MARKS)

Question 5

Beta plc has been trading for twelve years and during this period has achieved a good profit record. To date, the company has not been listed on a recognized stock exchange. However, Beta plc has recently

appointed a new chairman and managing director who are considering whether or not the company should obtain a full Stock Exchange listing.

Required

a. What are advantages and disadvantages which may accrue to the company and its shareholders, of obtaining a full Stock Exchange listing? (12 marks)
b. What factors should be taken into account when attempting to set an issue price for new equity shares in the company, assuming it is to be floated on a Stock Exchange? (8 marks)

(Total: 20 marks)

Question 6

a. Agbeloba Plc (AP) has just paid dividend of ₦40 per share. Dividend is expected to grow at 10% p.a in the next ten years and 5% thereafter.

Cost of equity and WACC are estimated as follows:

	Cost of equity	**WACC**
	(%)	**(%)**
Years 1 – 10	8	7.5
11 and beyond	12	11.4

Required

a. If the stock is currently trading at ₦1,200 per share, determine whether it is trading at premium or discount. Show all workings. (7 marks)
b. Briefly reconcile the Modigliani and Miller (MM) capital structure irrelevance propositions with traditional (or intermediate) view of gearing/leverage. (8 marks)

(Total: 15marks)

Question 7

a. What are the dangers of applying a uniform discount rate to all investment projects in a company? (10 marks)
b. Explain the meaning and purpose of security market line. (5 marks)

(Total: 15 marks)

Formulae

Modigliani and Miller Proposition 2 (with tax)

$$K_{EG} = K_{EU} + (K_{EU} - K_D)\frac{V_D}{V_{EG}}(1 - t)$$

Asset Beta

$$\beta_A = \left[\frac{V_E}{(V_E + V_D(1 - T))}\beta_E\right] + \left[\frac{V_D(1 - T)}{(V_E + V_D(1 - T))}\beta_D\right]$$

Equity Beta

$$\beta_E = \beta_A + (\beta_A - \beta_D)\left(\frac{V_D}{V_E}\right)(1 - t)$$

Growing Annuity

$$PV = \frac{A_1}{r - g}\left(1 - \left(\frac{1 + g}{1 + r}\right)^n\right)$$

Cash Management

i) Optimal sale of securities, Baumol model:

$$\text{Optimal sale} = \sqrt{\frac{2 \times \text{Annual cash disbursements} \times \text{Cost per sale of securities}}{\text{interest rate}}}$$

ii) Spread between upper and lower cash balance limits, Miller-Orr model:

$$\text{Spread} = 3\left[\frac{\frac{3}{4} \times \text{transaction cost} \times \text{variance of cash flows}}{\text{interest rate}}\right]^{\frac{1}{3}}$$

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1 - (1+r)^{-n}}{r}$

Where r = discount rate

n = number of periods

Discount rate (r)

Periods

(n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2.487	3
4	3·902	3·808	3.717	3·630	3.546	3.465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3.890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4.486	4·355	6
7	6·728	6.472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7.435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6.418	6·145	10
11	10·368	9·787	9·253	8·760	8·306	7·887	7.499	7·139	6·805	6.495	11
12	11·255	10·575	9·954	9·385	8·863	8·384	7·943	7·536	7'161	6·814	12
13	12·134	11·348	10·635	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·004	12·106	11·296	10·563	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·865	12·849	11·938	11·118	10·380	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2.444	2.402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2.690	2·639	2.589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3.498	3.410	3·326	6
7	4·712	4·564	4.423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4.799	4·639	4.487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4.451	4·303	4·163	4·031	9
10	5·889	5·650	5.426	5·216	5·019	4·833	4·659	4.494	4·339	4·192	10
11	6·207	5·938	5·687	5.453	5·234	5·029	4·836	4·656	4.486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4.439	12
13	6·750	6.424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5.468	5·229	5·008	4·802	4·611	14
	7·191	6·811	6.462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

SUGGESTED SOLUTIONS

SOLUTION 1

a. Forecast Profit or loss account for the year ending 31 May 2026

			₦000	₦000
Sales	Credit		168	
	Cash		112	280
less	Cost of sales			
	Opening inventory		24	
	Purchases		186	
			210	
	Less closing inventory (24 ×125/100)		30	180
				100
Gross profit				
Less wages			34	
	Other overheads		21	
	Depreciation:			
	F & F (60 × 10%)	6		
	Freehold (460 × 2%)	9	15	
	Interest (125 – 30 × 13%)		12	82
	Net profit before tax			18
	Corporate tax (18 × 35%)			6
	Net profit after tax			12
	Dividend (₦0.05 × 200,000)			10
	Retained profit			2

b. Forecast statement of financial position as at 31 May 2026

	₦000	₦000	₦000
Non-current assets			
Freehold premises, at cost		460	
less: Accumulated depreciation (30 + 9)		39	421
Fixtures & fittings, at cost (35 + 25)		60	
less: Accumulated depreciation (10 + 6)		16	44
			465
Current assets			
Inventory	30		
Receivables (3/12 × 168)	42	72	
Payables: Amounts falling due within one year			
Trade payables (2/12 × 186)	31		
Accrued expenses (4 + 3)	7		
Taxation	6		
Dividend proposed	10		
Bank overdraft (balancing figure)	42	96	(24)
			441

Payables: Amounts falling due beyond one year	
Loan – Highland Bank (125 – 30)	95
	346
Capital and reserves	
₦1 ordinary shares	200
Retained profit (144 + 2)	146
	346

c. Without the 2025 profit and loss account comments must be restricted

- **Profitability**
  The return on equity is forecast at 3.5% (i.e. 12/346 × 100%). This compares poorly with the returns currently offered by very safe investments (e.g. building societies).

- **Liquidity**

	2025	**2026**
Current ratio	60/46 =1.3:1	72/96 = 0.8:1
Quick asset ratio	(60 - 24)/46 = 0.8:1	(72 - 30)/69 = 0.4:1

The forecast liquidity is very weak compared with the 2025 position.

- **Gearing**

$$\frac{\text{Long and short} - \text{term borrowing}}{\text{Total equity}}$$

125/344 =36% (95 + 42)/346 = 40%

Gearing overall will not greatly alter. It will, however, shift from being all long-term borrowing to a combination of short and long-term. This may not be a good development. Generally long-term borrowing is more satisfactory.

d. Islamic finance is a system of financial activities governed by Shari'ah (Islamic law), while conventional finance is based on secular legal and market principles. The differences mainly arise from the treatment of money, risk, and ethics.

1. Interest (Riba)

- **Islamic finance:** Charging or paying interest (riba) is prohibited. Money is not seen as a commodity that can earn a return simply by lending it. Returns must come from risk-sharing and productive economic activity.
- **Conventional finance**: Interest is central. Lenders receive fixed returns (interest on loans, regardless of the success or failure of the borrower's activities.

2. **Risk Sharing vs Risk Transfer**

- **Islamic finance**: Encourages risk-sharing. Both financier and entrepreneur share in profits and losses. Examples include mudarabah (profit-sharing) musharakah (joint venture).

- **Conventional finance**: Focuses on risk transfer. The borrower bears most of the risk, as debt must be repaid with interest, even if the business fails.

3. **Asset-Backed Financing**
   - **Islamic finance**: Transactions must be backed by tangible assets or services. Examples include ijarah (leasing) and murabaha (cost-plus financing). Speculative or purely monetary transactions are discouraged.
   - **Conventional finance**: Loans can be created without direct asset backing. Money itself is often traded, and derivatives or speculative instruments can be widely used.

4. **Ethical and Social Considerations**
   - **Islamic finance**: Investments must comply with Islamic ethical principles. Financing of activities such as gambling, alcohol, pork products, or armaments is prohibited (haram).
   - **Conventional finance**: Ethical screens may exist voluntarily (e.g., ESG investing but there is no built-in legal prohibition on investing in certain industries.

5. Profit and Loss Recognition
   - **Islamic finance**: Profit is earned only when value is created through trade or investment. Losses are borne according to capital contribution, ensuring fairness.
   - **Conventional finance**: Profit mainly arises from interest spreads, fees, and trading of financial instruments, regardless of whether real assets are involved.

6. **Uncertainty and Speculation (Gharar)**
   - **Islamic finance**: Prohibits excessive uncertainty (gharar) and speculative contracts. For instance, highly complex derivatives are generally not permitted.
   - **Conventional finance**: Speculative activities, including derivatives and short-selling, are widely practiced and form a major part of modern financial markets.

7. **Governance**
   - **Islamic finance**: Requires Shari'ah boards of scholars to review financial products and ensure compliance with Islamic principles.
   - **Conventional finance**: Governance is based on company law, regulatory authorities, and shareholder interests, without religious oversight.

   (Only four points are required).

SOLUTION 2

a) **Calculation of share price**

Feli dividend per share = 64 × 0.5 = ₦0.32 per share

Share price of Feli = (32 × 1.05)/(0.12 – 0.05) = ₦4.80

Market capitalisation of Feli = 4.80 × 3m = ₦14.4m

b) **Rights issue price**

This is at a 20% discount to the current share price = 4.80 × 0.8 = ₦3.84 per share

New shares issued = 3m/3 = 1m

Cash raised = 1m × 3.84 = ₦3,840,000

Theoretical ex rights price = [(3 × 4.80) + 3.84]/4 = ₦4.56 per share

Market capitalisation after rights issue = 14.4m + 3.84m = ₦18.24 – 0.32m = ₦17.92m

This is equivalent to a share price of 17.92/4 = ₦4.48 per share

The issue costs result in a decrease in the market value of the company and therefore a decrease in the wealth of shareholders equivalent to ₦0.08 per share.

c) Price/earnings ratio valuation

Price/earnings ratio of Feli = 480/64 = 7.5

Earnings per share of Lola = 44.8c per share

Using the price earnings ratio method, share price of Lola = (44.8 × 7.5)/100 = ₦3.36

Market capitalisation of Lola = 3.36 ×1m = ₦3,360,000

(Alternatively, earnings of Lola = 1m × 0.448 = ₦448,000 × 7.5 = ₦3,360,000)

d) In a semi-strong form efficient capital market, share prices reflect past and public information. If the expected annual after-tax savings are not announced, this information will not therefore be reflected in the share price of Feli. In this case, the post acquisition market capitalisation of Feli will be the market capitalisation after the rights issue, plus the market capitalisation of the acquired company (Lola), less the price paid for the shares of Lola, since this cash has left the company in exchange for purchased shares. It is assumed that the market capitalisations calculated in earlier parts of this question are fair values, including the value of Lola calculated by the price/earnings ratio method.

Price paid for Lola = 3.84m – 0.32m = ₦3.52m

Market capitalisation = 17.92m + 3.36m – 3.52m = ₦17.76m

This is equivalent to a share price of 17.76/4 = ₦4.44 per share

The market capitalisation has decreased from the value following the rights issue because Feli has paid ₦3.52m for a company apparently worth ₦3.36m. This is a further decrease in the wealth of shareholders, following on from the issue costs of the right issue.

If the annual after-tax savings are announced, this information will be reflected quickly and accurately in the share price of Feli since the capital market is semi-strong form efficient. The savings can be valued using the price/earnings ratio method as having a present value of ₦720,000 (7.5 × 96,000). The revised market capitalisation of Feli is therefore ₦18.48m (17.76m +

0.72m), equivalent to a share price of ₦4.62 per share (18.48/4). This makes the acquisition of Lola attractive to the shareholders of Feli, since it offers a higher market capitalisation than the one following the rights issue. Each shareholder of Feli would experience a capital gain of ₦0.14 per share (4.62 – 4.48).

In practice, the capital market is likely to anticipate the annual after-tax savings before they are announced by Feli.

SOLUTION 3

a) The annual total purchases from all the suppliers are:

Supplier	**%**	**Amount ₦m**
No 1	40	120
No 2	20	60
No 3	20	60
No 4	20	60
	100	300

Financial cost analysis

Supplier No 1

Additional finance charges per annum:	**₦000**
₦120m × $1\frac{1}{2}\%$ × 2	(3,600)
Savings in finance costs due to delaying payment from one month to three months:	
Net cost	(1,600)

Supplier No 2	**₦000**
Additional finance charges per annum:	
₦60m × 2 ½%	(1,500)
Savings in finance cost due to delaying payment from one month to three months:	
$^2/_{12}$ × ₦60m × 10%	1,000
Net cost	(500)

Supplier No 3	**₦000**
Cash discount foregone	
₦60m × 2 ½%	(1,500)
Savings in finance cost due to delaying payment from one month to three months	
$^2/_{12}$ × ₦60m × 10%	1,000
Net cost	(500)

Supplier No 4	**₦000**
Additional finance charge	
₦60m × 12% × 2/12	(1,200)
Savings in finance cost due to delaying payment from one month to three months:	
2/12 × ₦60m × 10%	1,000
Net cost	(200)

Conclusion

On financial grounds, it would appear that Yemi plc should, in all cases, pay within one month of the invoice date and not delay payment as is currently being practised. In each case, the policy of delaying payment results in a net cost to Yemi plc.

b) Advantages of trade credit as a source of finance:

1. Perceived as being easily accessible

Delaying payment to trade creditors can often be perceived as being an easy method of obtaining additional finance.

2. **Flexible**

Using trade credit as a source of finance provides considerable flexibility, as Yemi plc can increase or reduce the level of trade credit used, without the requirement to go through a formal application process.

3. **Helps avoid borrowings**

It helps to reduce the need to formally raise additional interest bearing sources of finance. This can lead to a perceived improvement in conventional gearing ratios.

4. **Avoids the requirement for security**

Conventional bank overdraft finance requires the provision of security in order to obtain the overdraft facility. Delaying payment to suppliers secures finance, while avoiding the need for Yemi plc to provide additional security.

Disadvantages of trade credit as a source of finance

1. **Expensive**

In the majority of circumstances, the additional cost exceed the benefits in a similar manner to that shown in part (a).

2. Commercially damaging

Obtaining credit from suppliers by not paying invoices on time is not legitimate. It will inevitably lead to a deterioration in the trading relationship which at the extreme may result in Yemi plc's suppliers refusing to supply, or implementing a cash delivery requirement.

3. Credit rating

Late payment will eventually be detected and reported upon by credit rating agencies, placing Yemi plc at a disadvantage when seeking to develop relationships with new suppliers.

4. **Administrative costs**

Accounts staff will find a significant increase in time spent dealing with queries and an additional volume of correspondence from suppliers, as suppliers actively chase payment.

SOLUTION 4

a) **Expected number of barrels extracted**

Estimate		**Expected number of barrels (millions)**
1.	30m × 100% × 0.1	3
2.	30m × 40% × 0.5	6
3.	30m × 25% × 0.4	3
		12 = 4m per year

Expected net oil revenue		$m
Year		
2	4m × $(85 - 5)	320
3	4m × $(75 - 5)	280
4	4m × $(100 - 5)	380
		980

Residual value of equipment:

$125m – (12m × $8) = $29m

Expected net present value

	Year 0	**1**	**2**	**3**	**4**
	$m	**$m**	**$m**	**$m**	**$m**
Net oil receipts			320.0	280.0	380.0
License payment	(40.0)				
Equipment	(125.0)				29.0
Operating costs		(120.0)	(160.0)	(160.0)	(160.0)
Net cash flows	(165.0)	(120.0)	160.0	120.0	249.0
Discount rate	1.00	0.877	0.770	0.675	0.592
	(165.0)	(105.243)	123.2	81.0	147.4
ENPV	81.36				

b)

i) Total oil that can be extracted over 3 years = 25% × 30m barrels = 7.5m barrels

Annual extraction = 7.5/3 = 2.5m barrels

ii) Residual value of equipment: $125m – (7.5m × $8) = $65m

iii) **Net oil revenue**

Year		
1	2.5 × ($85 - $5) =	$200.00
2	2.5 × ($75 - $5) =	$175.00
3	2.5 × ($100 - $5) =	$237.50

Net present value

	Year 0	**1**	**2**	**3**	**4**
	$m	**$m**	**$m**	**$m**	**$m**
Net oil receipts			200.0	175.0	237.5
License payment	(40.0)				
Equipment	(125.0)				65.0
Operating costs		(120.0)	(160.0)	(160.0)	(160.0)
Net cash flows	(165.0)	(120.0)	40.0	15.0	142.5
Discount rate	1.00	0.88	0.77	0.68	0.59
	(165.0)	(105.6)	30.8	10.2	84.1
NPV	(145.5)				

c) The calculations in (a) above show that the ENPV of the investment project is positive and so acceptance of the project is expected to enhance shareholder wealth. However, the calculations in (b) reveal that if the worst possible outcome occurs, the company will make a significant loss. Moreover, the probability of making a loss is quite high. The final decision to go ahead should reflect the shareholders' attitude towards risk.

d) A problem of the ENPV approach, however, is that it does not reveal the 'downside' risk associated with the project. We saw in (c) above that the ENPV of the project was positive, but the downside risk was high. It is therefore useful to provide managers with information concerning downside risk where this method is being employed.

The expected value represents a weighted average not where the probabilities are used as weights. In practice, the expected value may not reflect any of the possible outcomes of the project, as is the case in this question. It can be argued that, where a company has a portfolio of projects, this is not a serious problem. Where, however, the company makes a large, one-off, project, the ENPV approach may not be suitable.

SOLUTION 5

a) **Advantages and Disadvantages of Obtaining a Full Stock Exchange Listing**

Advantages

1. **Access to Capital** – A listing provides Beta plc with access to a wider pool of equity finance, both at flotation and through subsequent rights issues, thereby supporting expansion and reducing reliance on debt.

2. **Improved Liquidity** – Shareholders gain a market in which they can easily buy and sell shares, making the investment more attractive to new investors.

3. **Enhanced Corporate Profile** – A listing raises the company's visibility, prestige, and credibility with customers, suppliers, lenders, and employees.

4. **Valuation for Acquisitions** – A quoted share price provides a transparent

   valuation that can be used as "currency" in mergers and acquisitions.

5. **Employee Incentives** – The company can introduce employee share schemes, which may improve motivation and retention.

6. **Widened Shareholder Base** – Listing attracts institutional and retail investors, thereby spreading risk and reducing dependence on a small group of shareholders.

Disadvantages

1. **Loss of Control** – The founding owners/managers may lose influence

   as ownership becomes dispersed and external investors gain voting power.

2. **High Costs** – Significant flotation expenses (advisory, underwriting, legal fees) plus ongoing listing and compliance costs.

3. **Regulatory Burden** – Increased disclosure and corporate governance

   requirements, which consume management time.

4. **Short-term Performance Pressure** – Management may be pressured to meet market expectations, potentially at the expense of long-term strategy.

5. **Takeover Vulnerability** – With widely held shares, the company becomes more exposed to hostile bids.

6. **Loss of Confidentiality** – Detailed financial and strategic information must be disclosed, which may benefit competitors.

b) **Factors in Setting the Issue Price of New Equity Shares**

1. **Profitability and Growth Prospects** – Investors will value the shares based Beta plc's past earnings record and its expected future growth.
2. **Dividend Policy** – Expected dividend yield is an important consideration for many investors.
3. **Market Comparisons** – Valuation multiples (e.g., P/E ratio, dividend yield) of comparable quoted companies in the same sector will act as benchmarks.
4. **Net Asset Value (NAV)** – The company's underlying asset base provides a minimum reference point for valuation.
5. **General Market Conditions** – Investor sentiment and market climate (bullish or bearish) will heavily influence achievable pricing.
6. **Demand and Subscription Strategy** – The price must be attractive enough to ensure the issue is fully subscribed, while also safeguarding existing shareholder value.
7. **Underwriters' Advice** – Professional advisors and underwriters will recommend a price that balances market appetite with company valuation.
8. **Reputation and Investor Confidence** – As a first-time entrant to the market, pricing may be conservative to ensure goodwill and a strong aftermarket performance.

SOLUTION 6

a) Calculation of the intrinsic value of the stock

We need the present value of the stream of future dividends.

First 10 years

It is best to use growing annuity, in order to save examination time.

$$\text{PV} = \frac{\text{D}_1}{\text{r} - \text{g}}\left(1 - \left(\frac{1+\text{g}}{1+\text{r}}\right)^{\text{n}}\right), \text{where}$$

$\text{D}_1 = 40(1.10) = 44 = \text{Year 1 dividend}$

g = 0.10 = growth rate in dividend

r = 0.08 = equity cost of capital

n = 10 = number of years

Thus:

$$\text{PV} = \frac{44}{0.08 - 0.10}\left(1 - \left(\frac{1.10}{1.08}\right)^{10}\right) = ₦443.09$$

Years 11 – Infinity

- Determine the terminal value in year 10 (TV_{10})
  $TV_{10} = D_{11}/(r_2 - g_2)$, where
  D_{11} = dividend in the year 11
  = 40(1.10)(1.05) = 108.937
  r_2 = 12% = cost of equity years 11 – infinity
  g_2 = 5% growth rate in years 11-infinity
  TV_{10} = 108.937/(0.12 – 0.05) = 1,556.24
- Determine the present value of the terminal value
  $PV(TV_{10}) = 1{,}556.24(1.08)^{-10}$
  = 720.84
- Determine the total present value.

	₦
Years 1 – 10 =	443.09
11 – infinity =	720.84
Total intrinsic value	1,163.93

If the stock is selling at ₦1,200 rather than ₦1,163.93, it is over-priced. It is trading at a premium.

(Note: The WACC is not relevant when using dividend valuation model.)

b) We are essentially trying to reconcile Modigliani and Miller (MM) capital structure irrelevance propositions with the traditional (or intermediate) view of gearing/leverage.

i) **The Traditional View of Gearing**

- The traditional (or "intermediate") approach says there is an optimal capital structure.
- As debt is introduced into the firm's capital mix:
  - **Initially**: The Weighted Average Cost of Capital (WACC) falls, because debt is cheaper than equity (thanks to lower required returns and tax deductibility of interest).
  - **At some point**: As gearing increases, the financial risk to equity holders rises, pushing up the cost of equity.
  - **Beyond the optimal point**: The increase in equity cost (and eventually cost of debt, too) outweighs the tax advantage of debt, so WACC begins to rise again.
- So the firm should aim for a "sweet spot" where WACC is minimized and firm value is maximized.

ii) **The MM Models**

- **Without taxes (1958):**
  MM argued capital structure is irrelevant under perfect market assumptions (no taxes, no transaction costs, no bankruptcy costs, symmetric information). The value of the firm depends only on its asset base and operating income, not on gearing. WACC remains constant as gearing changes.
- **With corporate taxes (1963):**
  MM revised their theory, noting that because interest is tax deductible, firm value increases with more debt. In this version, the optimal capital structure is 100% debt, since more gearing maximizes the "tax shield."
  (Of course, this is unrealistic in practice, because it ignores costs of financial distress.)

iii) **Reconciling the Two Views**

The key is to recognise assumptions vs. reality:

- MM's world is highly simplified. Their irrelevance proposition is powerful because it shows that in the absence of frictions, financing choice doesn't matter.
- The traditional view, however, reflects real-world frictions:
  - Costs of financial distress (bankruptcy, reputational loss, restrictive covenants).
  - Agency costs (managers vs. shareholders vs. debt-holders).
  - Information asymmetry (signals to markets when debt/equity issued).
  - Increasing risk premium on both debt and equity as gearing rises.

When these frictions are incorporated into MM's model, the two approaches converge:

- **At low/moderate gearing**: Tax benefits of debt dominate: WACC falls.
- **At high gearing**: Financial distress, agency costs, and rising risk premia dominate: WACC rises.
- **Therefore**: In practice, there is indeed an optimal gearing level, just as the traditional view proposes.

iv) **Summary Reconciliation**

- MM showed that in a perfect capital market, gearing doesn't matter (no optimal structure).
- The traditional view says there is an optimum structure.
- When MM's model is adjusted to include taxes, bankruptcy costs, agency costs, and imperfect information, the MM framework produces results consistent with the traditional view.

In other words:

MM's model gives the theoretical benchmark under ideal conditions.

The traditional view reflects the practical reality once imperfections are recognised.

SOLUTION 7

a) i) **Misallocation of Capital**

- Low-risk projects may be rejected if the uniform discount rate is too high relative to the project's true risk.
- High-risk projects may be accepted if the uniform rate is too low for their actual risk level.
- Result: Capital is steered away from value-creating opportunities and towards riskier ventures that may destroy value.

ii) **Overvaluation or Undervaluation of Projects**

- Applying a high discount rate to a low-risk project undervalues future cash flows, making good projects look unattractive.
- Conversely, using a low discount rate for a high-risk project overvalues uncertain cash flows, making bad projects look appealing.

iii) **Ignores Project-Specific Risk**

- Different projects often face different risk environments (e.g., geographical, technological, political).
- Using one rate assumes all risk profiles are the same, violating risk-adjusted return principles.

iv) **Undermines Strategic Planning**

- Some projects (e.g., R&D, diversification into new markets) may offer long-term strategic value, even if near-term cash flows are uncertain.
- A uniform rate may unjustly penalize such investments by placing excessive weight on early cash flows.

v) **Inconsistent with Capital Asset Pricing Model (CAPM)**

- CAPM teaches that the required return should reflect the project's beta (systematic risk relative to the market).
- Using the company's weighted average cost of capital (WACC) across all projects only works if all projects have similar risk and capital structure as the firm overall—which is rarely the case.

vi) **Distorted Performance Measurement**

- Post-implementation evaluation using a single benchmark might misrepresent the performance of projects.
- Managers of safer projects may seem to underperform, while those who took on excessive risk may appear successful due to flawed discounting.

vii) **Risk of Empire Building**

- Managers may pursue risky growth projects that look profitable under a uniform (low) discount rate but are value-destructive in reality.
- This can lead to agency problems and deterioration of shareholder value.

b) **Meaning and Purpose of the Security Market Line (SML)**

Meaning (in plain language):

The Security Market Line is like a "benchmark line" that shows the relationship

between the risk of an investment (measured by beta) and the return that investors should expect from it.

- On the horizontal axis is risk (beta).
- On the vertical axis is required return.
- The line starts from the risk-free rate (like government treasury bills) and slopes
- upward, because investors require higher returns for taking higher risk.

Purpose:

- It tells us whether an investment is fairly priced, overpriced, or underpriced.
  - If a security plots above the line, it means it offers a higher return for its level of risk, it is undervalued (a good buy).
  - If it plots below the line, it offers too little return for the risk, it is overvalued (not attractive).
- It also helps managers and investors compare risky securities with the "market average" to decide which ones are worthwhile.