

Fundamentals Level – Skills Module

Financial Management

Specimen Exam applicable from
December 2014



Time allowed

Reading and planning: 15 minutes

Writing: 3 hours

This paper is divided into two sections:

Section A – ALL TWENTY questions are compulsory and MUST be attempted

Section B – ALL FIVE questions are compulsory and MUST be attempted

Formulae Sheet, Present Value and Annuity Tables are on pages 12, 13 and 14.

Do NOT open this paper until instructed by the supervisor.

During reading and planning time only the question paper may be annotated. You must NOT write in your answer booklet until instructed by the supervisor.

This question paper must not be removed from the examination hall.

The Association of Chartered Certified Accountants

9
F
P
a
p
e
r
P
a
p
e
r

ACCA

Section A – ALL TWENTY questions are compulsory and MUST be attempted

Please use the space provided on the inside cover of the Candidate Answer Booklet to indicate your chosen answer to each multiple choice question.

Each question is worth 2 marks.

1 In relation to hedging interest rate risk, which of the following statements is correct?

- A** The flexible nature of interest rate futures means that they can always be matched with a specific interest rate exposure
- B** Interest rate options carry an obligation to the holder to complete the contract at maturity
- C** Forward rate agreements are the interest rate equivalent of forward exchange contracts
- D** Matching is where a balance is maintained between fixed rate and floating rate debt

2 The home currency of ACB Co is the dollar (\$) and it trades with a company in a foreign country whose home currency is the Dinar. The following information is available:

	Home country	Foreign country
Spot rate	20.00 Dinar per \$	
Interest rate	3% per year	7% per year
Inflation rate	2% per year	5% per year

What is the six-month forward exchange rate?

- A** 20.39 Dinar per \$
- B** 20.30 Dinar per \$
- C** 20.59 Dinar per \$
- D** 20.78 Dinar per \$

3 The following financial information relates to an investment project:

	\$000
Present value of sales revenue	50,025
Present value of variable costs	25,475
	<hr/>
Present value of contribution	24,550
Present value of fixed costs	18,250
	<hr/>
Present value of operating income	6,300
Initial investment	5,000
	<hr/>
Net present value	1,300

What is the sensitivity of the net present value of the investment project to a change in sales volume?

- A** 7.1%
- B** 2.6%
- C** 5.1%
- D** 5.3%

- 4 TKQ Co has just paid a dividend of 21c per share and its share price is \$3.50 per share. One year ago its share price was \$3.10 per share.

Working to one decimal place, what is the total shareholder return over the period?

- A 17.4%
- B 18.2%
- C 18.9%
- D 19.7%

- 5 Gurdip plots the historic movements of share prices and uses this analysis to make her investment decisions.

To what extent does Gurdip believe capital markets to be efficient?

- A Not efficient at all
- B Weak form efficient
- C Semi-strong form efficient
- D Strong form efficient

- 6 **Which of the following statements concerning capital structure theory is correct?**

- A In the traditional view, there is a linear relationship between the cost of equity and financial risk
- B Modigliani and Miller said that, in the absence of tax, the cost of equity would remain constant
- C Pecking order theory indicates that preference shares are preferred to convertible debt as a source of finance
- D Business risk is assumed to be constant

- 7 **What is the impact of a fall in a country's exchange rate?**

- 1 Exports will be given a stimulus
- 2 The rate of domestic inflation will rise

- A 1 only
- B 2 only
- C Both 1 and 2
- D Neither 1 nor 2

- 8 **Which of the following actions is LEAST likely to increase shareholder wealth?**

- A The average cost of capital is decreased by a recent financing decision
- B The financial rewards of directors are linked to increasing earnings per share
- C The board of directors decides to invest in a project with a positive net present value
- D The annual report declares full compliance with the corporate governance code

- 9 Value for money is an important objective for not-for-profit organisations.

Which action is LEAST consistent with increasing value for money?

- A Using a cheaper source of goods without decreasing the quality of not-for-profit organisation services
- B Searching for ways to diversify the finances of the not-for-profit organisation
- C Decreasing waste in the provision of a service by the not-for-profit organisation
- D Focusing on meeting the objectives of the not-for-profit organisation

10 Which of the following statements are features of money market instruments?

- 1 A negotiable security can be sold before maturity
 - 2 The yield on commercial paper is usually lower than that on treasury bills
 - 3 Discount instruments trade at less than face value
- A** 2 only
B 1 and 3 only
C 2 and 3 only
D 1, 2 and 3

11 The following are extracts from the statement of profit or loss of CQB Co:

	\$000
Sales income	60,000
Cost of sales	50,000
	<hr/>
Profit before interest and tax	10,000
Interest	4,000
	<hr/>
Profit before tax	6,000
Tax	4,500
	<hr/>
Profit after tax	1,500

60% of the cost of sales is variable costs.

What is the operational gearing of CQB Co?

- A** 5.0 times
B 2.0 times
C 0.5 times
D 3.0 times

12 The management of XYZ Co has annual credit sales of \$20 million and accounts receivable of \$4 million. Working capital is financed by an overdraft at 12% interest per year. Assume 365 days in a year.

What is the annual finance cost saving if the management reduces the collection period to 60 days?

- A** \$85,479
B \$394,521
C \$78,904
D \$68,384

13 Which of the following statements concerning financial management are correct?

- 1 It is concerned with investment decisions, financing decisions and dividend decisions
 - 2 It is concerned with financial planning and financial control
 - 3 It considers the management of risk
- A** 1 and 2 only
B 1 and 3 only
C 2 and 3 only
D 1, 2 and 3

14 SKV Co has paid the following dividends per share in recent years:

Year	2013	2012	2011	2010
Dividend (cents per share)	36·0	33·8	32·8	31·1

The dividend for 2013 has just been paid and SKV Co has a cost of equity of 12%.

Using the geometric average historical dividend growth rate and the dividend growth model, what is the market price of SKV Co shares to the nearest cent on an ex dividend basis?

- A \$4·67
- B \$5·14
- C \$5·40
- D \$6·97

15 'There is a risk that the value of our foreign currency-denominated assets and liabilities will change when we prepare our accounts.'

To which risk does the above statement refer?

- A Translation risk
- B Economic risk
- C Transaction risk
- D Interest rate risk

16 The following information has been calculated for A Co:

Trade receivables collection period	52 days
Raw material inventory turnover period	42 days
Work in progress inventory turnover period	30 days
Trade payables payment period	66 days
Finished goods inventory turnover period	45 days

What is the length of the working capital cycle?

- A 103 days
- B 131 days
- C 235 days
- D 31 days

17 **Which of the following is/are usually seen as benefits of financial intermediation?**

- 1 Interest rate fixing
 - 2 Risk pooling
 - 3 Maturity transformation
- A 1 only
 - B 1 and 3 only
 - C 2 and 3 only
 - D 1, 2 and 3

18 Which of the following statements concerning working capital management are correct?

- 1 The twin objectives of working capital management are profitability and liquidity
- 2 A conservative approach to working capital investment will increase profitability
- 3 Working capital management is a key factor in a company's long-term success

- A** 1 and 2 only
B 1 and 3 only
C 2 and 3 only
D 1, 2 and 3

19 Luke Co has 8% convertible loan notes in issue which are redeemable in five years' time at their nominal value of \$100 per loan note. Alternatively, each loan note could be converted after five years into 70 equity shares with a nominal value of \$1 each.

The equity shares of Luke Co are currently trading at \$1.25 per share and this share price is expected to grow by 4% per year. The before-tax cost of debt of Luke Co is 10% and the after-tax cost of debt of Luke Co is 7%.

What is the current market value of each loan note to the nearest dollar?

- A** \$92
B \$96
C \$104
D \$109

20 Governments have a number of economic targets as part of their monetary policy.

Which of the following targets relate predominantly to monetary policy?

- 1 Increasing tax revenue
- 2 Controlling the growth in the size of the money supply
- 3 Reducing public expenditure
- 4 Keeping interest rates low

- A** 1 only
B 1 and 3
C 2 and 4 only
D 2, 3 and 4

(40 marks)

Section B – ALL FIVE questions are compulsory and MUST be attempted

- 1** Cat Co places monthly orders with a supplier for 10,000 components which are used in its manufacturing processes. Annual demand is 120,000 components. The current terms are payment in full within 90 days, which Cat Co meets, and the cost per component is \$7.50. The cost of ordering is \$200 per order, while the cost of holding components in inventory is \$1.00 per component per year.

The supplier has offered a discount of 3.6% on orders of 30,000 or more components. If the bulk purchase discount is taken, the cost of holding components in inventory would increase to \$2.20 per component per year due to the need for a larger storage facility.

Required:

(a) Discuss briefly the factors which influence the formulation of working capital policy. (6 marks)

(b) Calculate if Cat Co will benefit financially by accepting the offer of the bulk purchase discount. (4 marks)

(10 marks)

- 2 GWW Co is a listed company which is seen as a potential target for acquisition by financial analysts. The value of the company has therefore been a matter of public debate in recent weeks and the following financial information is available:

Year	2012	2011	2010	2009
Profit after tax (\$m)	10.1	9.7	8.9	8.5

Statement of financial position information for 2012

	\$m	\$m
Non-current assets		91.0
Current assets		
Inventory	3.8	
Trade receivables	4.5	8.3
Total assets		<u>99.3</u>
Equity finance		
Ordinary shares	20.0	
Reserves	47.2	67.2
Non-current liabilities		
8% bonds		25.0
Current liabilities		7.1
Total liabilities		<u>99.3</u>

The shares of GWW Co have a nominal (par) value of 50c per share and a market value of \$4.00 per share. The business sector of GWW Co has an average price/earnings ratio of 17 times.

The expected net realisable values of the non-current assets and the inventory are \$86.0m and \$4.2m, respectively. In the event of liquidation, only 80% of the trade receivables are expected to be collectible.

Required:

- (a) Calculate the value of GWW Co using the following methods:**

- (i) market capitalisation (equity market value);**
- (ii) net asset value (liquidation basis); and**
- (iii) price/earnings ratio method using the business sector average price/earnings ratio.**

Note: The total marks will be split equally between each part. (6 marks)

- (b) Discuss briefly the advantages and disadvantages of using the dividend growth model to value the shares of GWW Co.** (4 marks)

(10 marks)

- 3** ZPS Co, whose home currency is the dollar, took out a fixed-interest peso bank loan several years ago when peso interest rates were relatively cheap compared to dollar interest rates. Economic difficulties have now increased peso interest rates while dollar interest rates have remained relatively stable. ZPS Co must pay interest of 5,000,000 pesos in six months' time. The following information is available.

Spot rate: 12·500–12·582 pesos per \$
Six-month forward rate: 12·805–12·889 pesos per \$

Interest rates which can be used by ZPS Co:

	Borrow	Deposit
Peso interest rates:	10·0% per year	7·5% per year
Dollar interest rates:	4·5% per year	3·5% per year

Required:

- (a) Explain briefly the relationships between:**

- (i) exchange rates and interest rates;**
- (ii) exchange rates and inflation rates.**

Note: The total marks will be split equally between each part.

(4 marks)

- (b) Calculate whether a forward market hedge or a money market hedge should be used to hedge the interest payment of 5 million pesos in six months' time. Assume that ZPS Co would need to borrow any cash it uses in hedging exchange rate risk.**

(6 marks)

(10 marks)

- 4 PV Co is evaluating an investment proposal to manufacture Product W33, which has performed well in test marketing trials conducted recently by the company's research and development division. The following information relating to this investment proposal has now been prepared:

Initial investment	\$2 million
Selling price (current price terms)	\$20 per unit
Expected selling price inflation	3% per year
Variable operating costs (current price terms)	\$8 per unit
Fixed operating costs (current price terms)	\$170,000 per year
Expected operating cost inflation	4% per year

The research and development division has prepared the following demand forecast as a result of its test marketing trials. The forecast reflects expected technological change and its effect on the anticipated life-cycle of Product W33.

Year	1	2	3	4
Demand (units)	60,000	70,000	120,000	45,000

It is expected that all units of Product W33 produced will be sold, in line with the company's policy of keeping no inventory of finished goods. No terminal value or machinery scrap value is expected at the end of four years, when production of Product W33 is planned to end. For investment appraisal purposes, PV Co uses a nominal (money) discount rate of 10% per year and a target return on capital employed of 30% per year. Ignore taxation.

Required:

- (a) Calculate the following values for the investment proposal:**

- (i) net present value;** (5 marks)
- (ii) internal rate of return, and;** (3 marks)
- (iii) return on capital employed (accounting rate of return) based on average investment.** (3 marks)

- (b) Discuss briefly your findings in each section of (a) above and advise whether the investment proposal is financially acceptable.** (4 marks)

(15 marks)

- 5 DD Co has a dividend payout ratio of 40% and has maintained this payout ratio for several years. The current dividend per share of the company is 50c per share and it expects that its next dividend per share, payable in one year's time, will be 52c per share.

The capital structure of the company is as follows:

	\$m	\$m
Equity		
Ordinary shares (par value \$1 per share)	25	
Reserves	35	
	<hr/>	60
Debt		
Bond A (par value \$100)	20	
Bond B (par value \$100)	10	
	<hr/>	30
		<hr/>
		90
		<hr/>

Bond A will be redeemed at par in ten years' time and pays annual interest of 9%. The cost of debt of this bond is 9.83% per year. The current ex interest market price of the bond is \$95.08.

Bond B will be redeemed at par in four years' time and pays annual interest of 8%. The cost of debt of this bond is 7.82% per year. The current ex interest market price of the bond is \$102.01.

DD Co has a cost of equity of 12.4%. Ignore taxation.

Required:

(a) Calculate the following values for DD Co:

- (i) ex dividend share price, using the dividend growth model; (3 marks)
- (ii) capital gearing (debt divided by debt plus equity) using market values; and (2 marks)
- (iii) market value weighted average cost of capital. (2 marks)

(b) Discuss whether a change in dividend policy will affect the share price of DD Co. (8 marks)

(15 marks)

Formulae Sheet

Economic order quantity

$$= \sqrt{\frac{2C_0D}{C_h}}$$

Miller–Orr Model

$$\text{Return point} = \text{Lower limit} + \left(\frac{1}{3} \times \text{spread}\right)$$

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

The Capital Asset Pricing Model

$$E(r_i) = R_f + \beta_i (E(r_m) - R_f)$$

The asset beta formula

$$\beta_a = \left[\frac{V_e}{(V_e + V_d(1 - T))} \beta_e \right] + \left[\frac{V_d(1 - T)}{(V_e + V_d(1 - T))} \beta_d \right]$$

The Growth Model

$$P_0 = \frac{D_0(1 + g)}{(r_e - g)}$$

Gordon's growth approximation

$$g = br_e$$

The weighted average cost of capital

$$\text{WACC} = \left[\frac{V_e}{V_e + V_d} \right] k_e + \left[\frac{V_d}{V_e + V_d} \right] k_d (1 - T)$$

The Fisher formula

$$(1 + i) = (1 + r)(1 + h)$$

Purchasing power parity and interest rate parity

$$S_1 = S_0 \times \frac{(1 + h_c)}{(1 + h_b)} \quad F_0 = S_0 \times \frac{(1 + i_c)}{(1 + i_b)}$$

Present Value Table

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

Where r = discount rate
 n = number of periods until payment

<i>Discount rate (r)</i>											
<i>Periods</i>											
(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	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	2
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	3
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	4
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	5
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	6
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	7
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	8
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	9
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	10
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	11
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	12
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	13
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	14
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	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	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	2
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	3
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	4
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	5
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	6
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	7
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	8
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	9
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	10
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	11
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	12
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	13
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	14
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	15

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

		<i>Discount rate (r)</i>									
<i>Periods</i>											
(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
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675	15

End of Question Paper

Answers

Section A

1 C

2 A

Using interest rate parity, six-month forward rate = $20.00 \times (1.07/1.03)^{0.5} = 20.39$ Dinar per \$
Alternatively, $20 \times (1.035/1.015) = 20.39$ Dinar per \$

3 D

The sensitivity to a change in sales volume = $100 \times 1,300/24,550 = 5.3\%$

4 D

Total shareholder return = $100 \times [(350 - 310) + 21]/310 = 19.7\%$

5 A

6 D

7 C

8 B

9 B

10 B

11 D

Contribution = $60,000,000 - (50,000,000 \times 0.6) = \$30,000,000$
Operational gearing = Contribution/PBIT = $\$30m/\$10m = 3.0$ times

12 A

The current collection period is $4/20 \times 365 = 73$ days
Therefore a reduction to 60 days would be a reduction of 13 days
Hence $13/365 \times \$20m = \$712,329$
Finance cost saving = $\$712,329 \times 0.12 = \$85,479$

13 D

14 C

The geometric average dividend growth rate is $(36.0/31.1)^{1/3} - 1 = 5\%$
The ex div share price = $(36.0 \times 1.05)/(0.12 - 0.05) = \5.40

15 A

16 A

The length of the operating cycle is $52 + 42 + 30 - 66 + 45 = 103$ days

17 C

18 B

19 B

Using a conversion value after five years of $\$106.40$ ($\$1.25 \times 1.04^5 \times 70$) and the before-tax cost of debt of 10%, we have $(8 \times 3.791) + (106.40 \times 0.621) = \96.40 or $\$96$. Conversion is preferred in five years' time as it offers a higher value than the redemption value of $\$100$.

20 C

Section B

- 1 (a) Working capital policies can cover the level of investment in current assets, the way in which current assets are financed, and the procedures to follow in managing elements of working capital such as inventory, trade receivables, cash and trade payables. The twin objectives of working capital management are liquidity and profitability, and working capital policies support the achievement of these objectives. There are several factors which influence the formulation of working capital policies as follows:

Nature of the business

The nature of the business influences the formulation of working capital policy because it influences the size of the elements of working capital. A manufacturing company, for example, may have high levels of inventory and trade receivables, a service company may have low levels of inventory and high levels of trade receivables, and a supermarket chain may have high levels of inventory and low levels of trade receivables.

The operating cycle

The length of the operating cycle, together with the desired level of investment in current assets, will determine the amount of working capital finance needed. Working capital policies will therefore be formulated so as to optimise as much as possible the length of the operating cycle and its components, which are the inventory conversion period, the receivables conversion period and payables deferral period.

Terms of trade

Since a company must compete with other companies to be successful, a key factor in the formulation of working capital policy will be the terms of trade offered by competitors. The terms of trade must be comparable with those of competitors and the level of receivables will be determined by the credit period offered and the average credit period taken by customers.

Risk appetite of company

A risk-averse company will tend to operate with higher levels of inventory and receivables than a company which is more risk-seeking.

Similarly, a risk-averse company will seek to use long-term finance for permanent current assets and some of its fluctuating current assets (conservative policy), while a more risk-seeking company will seek to use short-term finance for fluctuating current assets as well as for a portion of the permanent current assets of the company (an aggressive policy).

(b) Bulk purchase discount

Current number of orders = $120,000/10,000 = 12$ orders

Current ordering cost = $12 \times 200 = \$2,400$ per year

Current holding cost = $(10,000/2) \times 1 = \$5,000$ per year

Annual cost of components = $\$900,000$ per year

Inventory cost under current policy = $900,000 + 2,400 + 5,000 = \$907,400$ per year

To gain the bulk purchase discount, the order size must increase to 30,000 components.

The number of orders will decrease to $120,000/30,000 = 4$ orders per year

The revised ordering cost will be $4 \times 200 = \$800$ per year

The revised holding cost will be $(30,000/2) \times 2.2 = \$33,000$ per year

The annual cost of components will be $120,000 \times 7.50 \times 0.964 = \$867,600$ per year

Inventory cost using discount = $867,600 + 800 + 33,000 = \$901,400$ per year

Cat Co will benefit financially if it takes the bulk discount offered by the supplier, as it saves $\$6,000$ per year in inventory costs or 0.66% of current inventory costs.

2 (a) (i) Market capitalisation of GWW Co

Value of ordinary shares in statement of financial position = \$20.0 million
Nominal (par) value of ordinary shares = 50 cents
Number of ordinary shares of company = $20\text{m}/0.5 = 40$ million shares
Ordinary share price = \$4.00 per share
Market capitalisation = $40\text{m} \times 4 = \$160$ million

(ii) Net asset value (liquidation basis)

Current net asset value (NAV) = $91.0\text{m} + 8.3\text{m} - 7.1\text{m} - 25.0\text{m} = \67.2 million
Decrease in value of non-current assets on liquidation = $86.0\text{m} - 91.0\text{m} = \5 million
Increase in value of inventory on liquidation = $4.2\text{m} - 3.8\text{m} = \0.4 million
Decrease in value of trade receivables = $4.5\text{m} \times 0.2 = \0.9 million
NAV (liquidation basis) = $67.2\text{m} - 5\text{m} + 0.4\text{m} - 0.9\text{m} = \61.7 million

(iii) Price/earnings ratio value

Historic earnings of GWW Co = \$10.1 million
Average price/earnings ratio of GWW Co business sector = 17 times
Price/earnings ratio value of GWW Co = $17 \times 10.1\text{m} = \171.7 million

(Tutorial note: Price/earnings ratio calculation using forecast earnings would receive full credit)

- (b)** The dividend growth model values the shares of GWW Co as the present value of the future dividends expected by its shareholders. The input variables for the valuation model are the cost of equity, the future dividend growth rate and the current dividend per share (or next year's dividend per share).

One advantage of the dividend growth model is that its input variables are well-known and understandable. Dividend information is published regularly in the financial media and discussed by financial analysts. Many companies now provide information in their annual report on the cost of equity.

For shareholders, another advantage of the dividend growth model is that it gives an estimate of the wealth they would lose if they sold their shares now and hence the model estimates the minimum price at which they might be persuaded to sell their shares. This can be useful information for both sellers and buyers.

One disadvantage of the dividend growth model, however, is that the cost of equity and the dividend growth rate are future values and so cannot be known with any certainty. Forecasts of future dividend growth rates are often based on historical dividend trends, but there is no guarantee that the future will repeat the past.

Another disadvantage is that although experience shows that dividends per share do not grow smoothly, this is assumed by the dividend growth model. The future dividend growth rate is assumed to be constant in perpetuity, which is an idealised state of affairs.

- 3 (a)** Movements in exchange rates can be related to changes in interest rates and to changes in inflation rates. The relationship between exchange rates and interest rates is called interest rate parity, while the relationship between exchange rates and inflation rates is called purchasing power parity.

Interest rate parity holds that the relationship between the spot exchange rate and the forward exchange rate between two currencies can be linked to the relative nominal interest rates of the two countries. The forward rate can be found by multiplying the spot rate by the ratio of the interest rates of the two countries. The currency of the country with the higher nominal interest rate will be forecast to weaken against the currency of the country with the lower nominal interest rate. Both the spot rate and the forward rate are available in the current foreign exchange market, and the forward rate can be guaranteed by using a forward contract.

Purchasing power parity holds that the current spot exchange rate and the future spot exchange rate between two currencies can be linked to the relative inflation rates of the two countries. The future spot rate is the spot rate which occurs at the end of a given period of time. The currency of the country with the higher inflation rate will be forecast to weaken against the currency of the country with the lower inflation rate. Purchasing power parity is based on the law of one price, which suggests that, in equilibrium, identical goods should sell for the same price in different countries, allowing for the exchange rate. Purchasing power parity holds in the longer term rather than the shorter term and so is often used to provide long-term forecasts of exchange rate movements, for example, for use in investment appraisal.

- (b)** The costs of the two exchange rate hedges need to be compared at the same point in time, e.g. in six months' time.

Forward market hedge

Interest payment = 5,000,000 pesos
Six-month forward rate for buying pesos = 12.805 pesos per \$
Dollar cost of peso interest using forward market = $5,000,000/12.805 = \$390,472$

Money market hedge

ZPS Co has a 5 million peso liability in six months and so needs to create a 5 million peso asset at the same point in time. The six-month peso deposit rate is $7.5\%/2 = 3.75\%$. The quantity of pesos to be deposited now is therefore $5,000,000/1.0375 = 4,819,277$ pesos.

The quantity of dollars needed to purchase these pesos is $4,819,277/12.500 = \$385,542$ and ZPS Co would borrow this quantity of dollars now. The six-month dollar borrowing rate = $4.5\%/2 = 2.25\%$ and so in six months' time the debt will be $385,542 \times 1.0225 = \$394,217$. This is the dollar cost of the peso interest using a money market hedge.

Comparing the \$390,472 cost of the forward market hedge with the \$394,217 cost using a money market hedge, it is clear that the forward market should be used to hedge the peso interest payment as it is cheaper by \$3,745.

(Tutorial note: Geometric mean interest rates would receive full credit)

4 (a) (i) Calculation of NPV

Year	0	1	2	3	4
	\$	\$	\$	\$	\$
Investment	(2,000,000)				
Income		1,236,000	1,485,400	2,622,000	1,012,950
Operating costs		676,000	789,372	1,271,227	620,076
Net cash flow	(2,000,000)	560,000	696,028	1,350,773	392,874
Discount at 10%	1.000	0.909	0.826	0.751	0.683
Present values	(2,000,000)	509,040	574,919	1,014,430	268,333

Net present value: \$366,722

Workings

Calculation of income

Year	1	2	3	4
Inflated selling price (\$/unit)	20.60	21.22	21.85	22.51
Demand (units/year)	60,000	70,000	120,000	45,000
Income (\$/year)	1,236,000	1,485,400	2,622,000	1,012,950

Calculation of operating costs

Year	1	2	3	4
Inflated variable cost (\$/unit)	8.32	8.65	9.00	9.36
Demand (units/year)	60,000	70,000	120,000	45,000
Variable costs (\$/year)	499,200	605,500	1,080,000	421,200
Inflated fixed costs (\$/year)	176,800	183,872	191,227	198,876
Operating costs (\$/year)	676,000	789,372	1,271,227	620,076

Alternative calculation of operating costs

Year	1	2	3	4
Variable cost (\$/unit)	8	8	8	8
Demand (units/year)	60,000	70,000	120,000	45,000
Variable costs (\$/year)	480,000	560,000	960,000	360,000
Fixed costs (\$/year)	170,000	170,000	170,000	170,000
Operating costs (\$/year)	650,000	730,000	1,130,000	530,000
Inflated costs (\$/year)	676,000	789,568	1,271,096	620,025

(ii) Calculation of internal rate of return

Year	0	1	2	3	4
	\$	\$	\$	\$	\$
Net cash flow	(2,000,000)	560,000	696,028	1,350,773	392,874
Discount at 20%	1.000	0.833	0.694	0.579	0.482
Present values	(2,000,000)	466,480	483,043	782,098	189,365

Net present value (\$79,014)

Internal rate of return = $10 + ((20 - 10) \times 366,722) / (366,722 + 79,014) = 10 + 8.2 = 18.2\%$

(iii) Calculation of return on capital employed

Total cash inflow = $560,000 + 696,028 + 1,350,773 + 392,874 = \$2,999,675$

Total depreciation and initial investment are same, as there is no scrap value.

Total accounting profit = $2,999,675 - 2,000,000 = \$999,675$

Average annual accounting profit = $999,675/4 = \$249,919$

Average investment = $2,000,000/2 = \$1,000,000$

Return on capital employed = $100 \times 249,919/1,000,000 = 25\%$

- (b)** The investment proposal has a positive net present value (NPV) of \$366,722 and is therefore financially acceptable. The results of the other investment appraisal methods do not alter this financial acceptability, as the NPV decision rule will always offer the correct investment advice.

The internal rate of return (IRR) method also recommends accepting the investment proposal, since the IRR of 18.2% is greater than the 10% return required by PV Co. If the advice offered by the IRR method differed from that offered by the NPV method, the advice offered by the NPV method would be preferred.

The calculated return on capital employed of 25% is less than the target return of 30%, but as indicated earlier, the investment proposal is financially acceptable as it has a positive NPV. The reason why PV Co has a target return on capital employed of 30% should be investigated. This may be an out-of-date hurdle rate which has not been updated for changed economic circumstances.

- 5 (a) (i)** Dividend growth rate = $100 \times ((52/50) - 1) = 100 \times (1.04 - 1) = 4\%$ per year
Share price using DGM = $(50 \times 1.04)/(0.124 - 0.04) = 52/0.084 = 619c$ or \$6.19
- (ii)** Number of ordinary shares = 25 million
Market value of equity = $25m \times 6.19 = \$154.75$ million
Market value of Bond A issue = $20m \times 95.08/100 = \$19.016m$
Market value of Bond B issue = $10m \times 102.01/100 = \$10.201m$
Market value of debt = \$29.217m
Market value of capital employed = $154.75m + 29.217m = \$183.967m$
Capital gearing = $100 \times 29.217/183.967 = 15.9\%$
- (iii)** WACC = $((12.4 \times 154.75) + (9.83 \times 19.016) + (7.82 \times 10.201))/183.967 = 11.9\%$

- (b)** Miller and Modigliani showed that, in a perfect capital market, the value of a company depended on its investment decisions alone, and not on its dividend or financing decisions. In such a market, a change in dividend policy by DD Co would not affect its share price or its market capitalisation. Miller and Modigliani showed that the value of a company was maximised if it invested in all projects with a positive net present value (its optimal investment schedule). The company could pay any level of dividend and if it had insufficient finance, make up the shortfall by issuing new equity. Since investors had perfect information, they were indifferent between dividends and capital gains. Shareholders who were unhappy with the level of dividend declared by a company could gain a 'home-made dividend' by selling some of their shares. This was possible since there are no transaction costs in a perfect capital market.

Against this view are several arguments for a link between dividend policy and share prices. For example, it has been argued that investors prefer certain dividends now rather than uncertain capital gains in the future (the 'bird-in-the-hand' argument).

It has also been argued that real-world capital markets are not perfect, but semi-strong form efficient. Since perfect information is therefore not available, it is possible for information asymmetry to exist between shareholders and the managers of a company. Dividend announcements may give new information to shareholders and as a result, in a semi-strong form efficient market, share prices may change. The size and direction of the share price change will depend on the difference between the dividend announcement and the expectations of shareholders. This is referred to as the 'signalling properties of dividends'.

It has been found that shareholders are attracted to particular companies as a result of being satisfied by their dividend policies. This is referred to as the 'clienteles effect'. A company with an established dividend policy is therefore likely to have an established dividend clientele. The existence of this dividend clientele implies that the share price may change if there is a change in the dividend policy of the company, as shareholders sell their shares in order to reinvest in another company with a more satisfactory dividend policy. In a perfect capital market, the existence of dividend clienteles is irrelevant, since substituting one company for another will not incur any transaction costs. Since real-world capital markets are not perfect, however, the existence of dividend clienteles suggests that if DD Co changes its dividend policy, its share price could be affected.

**Fundamentals Level – Skills Module, Paper F9
Financial Management**

Specimen Exam Marking Scheme

	<i>Marks</i>	<i>Marks</i>
Section A		
1–20 Two marks per question		40
Section B		
1 (a) Nature of the business	1–2	
Operating cycle	1–2	
Terms of trade	1–2	
Risk appetite	1–2	
Other relevant factors	<u>1–2</u>	
	Maximum	6
(b) Inventory cost under current ordering policy	1	
Revised holding and ordering costs	1	
Inventory cost if discount is taken	1	
Benefit if bulk purchase discount taken	<u>1</u>	
		<u>4</u>
		<u>10</u>
2 (a) Market capitalisation	2	
Calculation of NAV (liquidation basis)	2	
Calculation of price/earnings ratio value	<u>2</u>	
		6
(b) Advantages of using the dividend growth model	2	
Disadvantages of using the dividend growth model	<u>2</u>	
		<u>4</u>
		<u>10</u>
3 (a) Explanation of interest rate parity	2	
Explanation of purchasing power parity	<u>2</u>	
		4
(b) Dollar cost of forward market hedge	1	
Calculation of six-month interest rates	1	
Use of correct spot rate	1	
Dollar cost of money market hedge	2	
Comparison of cost of hedges	<u>1</u>	
		<u>6</u>
		<u>10</u>

	<i>Marks</i>	<i>Marks</i>
4 (a) (i) Inflated income	2	
Inflated operating costs	2	
Net present value	<u>1</u>	
		5
(ii) Internal rate of return		3
(iii) Return on capital employed		3
(b) Discussion of investment appraisal findings	3	
Advice on acceptability of project	<u>1</u>	
		<u>4</u>
		<u>15</u>
5 (a) (i) Dividend growth rate	1	
Share price using dividend growth model	<u>2</u>	
		3
(ii) Capital gearing		2
(iii) Weighted average cost of capital		2
(b) Dividend irrelevance	4	
Dividend relevance	<u>4</u>	
		<u>8</u>
		<u>15</u>