

# THE PUBLIC ACCOUNTANTS EXAMINATIONS BOARD

*A Committee of the Council of ICPAU*

## CPA(U) EXAMINATIONS

### LEVEL TWO

#### CORPORATE FINANCIAL MANAGEMENT - PAPER 12

**WEDNESDAY, 20 JUNE 2012**

#### INSTRUCTIONS TO CANDIDATES

1. Time allowed: **3 hours 15 minutes**.

The first 15 minutes of this examination have been designated for reading time. You may not start to write your answer during this time.

2. Section **A** has **one** compulsory question carrying 40 marks.
3. Section **B** has **four** questions and only **three** questions are to be attempted. Each question carries 20 marks.
4. Relevant formulae and tables are provided on pages 8 - 10.
5. Write your answer to each question in a separate answer booklet.
6. Please, read further instructions on the answer booklet, before attempting any question.

## SECTION A

*This section has one compulsory question to be attempted.*

### Question 1

Sausages & More Ltd (S & M), located in Mukono industrial area is a distributor of trademark sausages known as 'premium sausages'. Due to the high demand for the premium sausages, S & M wants to buy a new sausage mincing machine (the saucemint) to serve her niche market in Kayunga district which cannot be served by the existing plant in Mukono.

As the finance manager of S & M you have been tasked to evaluate the purchase of the saucemint which is expected to cost Shs 8 million.

With the saucemint, production and sales of premium sausages are forecast to be as follows:

Year	1	2	3	4
Production (sausages/year)	35,000	53,000	75,000	36,000

Additional information:

1. S & M's capital structure as at 31 December 2011 was as follows:

Ordinary share capital (Shs 10 par)      Shs 10 million.

12% Preference shares (Shs 20 par)      Shs 4.8 million.

10% Term loan(Shs 1,000 par)              Shs 3.6 million.

The market price per ordinary share, preference share and debenture at 31 December 2011 was Shs 45, Shs 30 and Shs 1,200 respectively.

The dividend per ordinary share for the year ended 31 December 2011 was Shs 8.

Dividends are expected to grow at an annual rate of 12%

2. The selling price per sausage (in current price terms) is Shs 200.
3. The variable cost per sausage (in current price terms) is Shs 120.
4. Selling price inflation is expected to be 14% per annum.
5. Variable cost inflation is expected to be 15% per annum.
6. No increase in existing fixed costs is expected since S & M has spare capacity for both space and labour.
7. Production and sales of premium sausages will call for increased investment in working capital. Analysis of historical levels of working capital within S & M indicates that at the start of each year, investment in working capital will need to be 7% of sales revenue for that year.
8. S & M pays income tax at 30% per annum in the year in which the taxable profit occurs.
9. Tax liability is reduced by capital allowances on machinery which S & M claims on a straight-line basis over the four-years. However, the Revenue Authority has written to the executive director of S & M, copying to the director finance, informing them that no capital

allowances are to be allowed on machinery. S & M has accepted the Revenue Authority's decision.

10. The saucemint is expected to have no scrap value at the end of the four-year period.

**Required:**

- (a) Calculate the weighted average cost of capital for S & M.  
(8 marks)
- (b) Using net present value method (NPV), evaluate the proposed machine investment.  
(12 marks)
- (c) Discuss other factors to consider in your evaluation in (b) above.  
(6 marks)
- (d) Discuss how the NPV method of investment appraisal contributes towards the objective of maximising the wealth of shareholders.  
(6 marks)
- (e) With reference to the agency theory discuss the possible areas of conflict between managers and shareholders and suggest ways these conflicts can minimised.

(8 marks)

**(Total 40 marks)**

## SECTION B

*Attempt three of the four questions in this section.*

### Question 2

The Uganda Security Exchange (USE) was licenced to operate as an approved stock exchange in June 1997 by the Capital markets Authority (CMA) of Uganda. The USE became operational in January 1998 and in 2003 the USE all share index was launched. Over the years, the USE has spearheaded capital formation in both equity and debt markets. However, being in a developing economy, the USE continues to experience unique circumstances compared to its counterparts in developed economies.

#### Required:

- (a) Distinguish between the following terms used in stock exchange markets:
    - (i) capital and money markets. (2 marks)
    - (ii) primary and secondary markets. (2 marks)
  - (b) Define the term 'stock market index' and describe practical difficulties in constructing a stock market index in an economy like Uganda. (6 marks)
  - (c) Describe the various methods by which an organisation can issue ordinary shares on the Uganda Securities Exchange. (5 marks)
  - (d) Discuss the barriers to the growth of capital markets in Uganda. (5 marks)
- (Total 20 marks)**

### Question 3

Uganda Fish Conservation Centre (UFCC) was established on the shores of Lake Victoria to attract learners from all corners of the world. It is currently 'a must visit' by anyone coming to Entebbe for a leisurely or educational tour including ICPAU members and students who hold their regular annual conferences in Entebbe municipality. The centre sits on 30 hectares of land, with over 200 types of creatures. In this way, UFCC acts as a 'window' to Uganda exhibiting the country's attraction in a manner that encourages both local and international visitors to explore more of what Uganda has to offer. For the financial year 2013/14 UFCC has earmarked enough funds for new conservation projects to include a reptiles' house, birds centre and a monkey house.

Each project will cost Shs 50 million but only Shs 100 million has been budgeted for capital investment. Therefore, a choice has to be made as to which two out of the three investments to be undertaken.

Details of the three projects are given as follows:

Project	Expected return	Standard deviation	Beta value
Reptile house	20%	10 %	1.60
Birds centre	15 %	8 %	0.80
Monkey house	18 %	9 %	0.95

Correlation coefficients:

Reptile and birds	+0.60
Reptile and monkey	+0.70
Birds and monkey	+0.90
Risk free rate	10%
Market rate	17%

#### Required:

- (a) Using portfolio theory analysis and the coefficient of variation, evaluate the investment decisions facing UFCC.

**(8 marks)**

- (b) Using CAPM with alpha values re-analyse UFCC's investment decision.

**(8 marks)**

- (c) Explain any **four** limitations of portfolio theory?

**(4 marks)**

**(Total 20 marks)**

**Question 4**

Luwero Investments Ltd (LIL) is one of the largest companies in central Uganda. It has branches in Uganda's biggest municipalities and headquarters in Kampala. The management of LIL is reviewing a variety of proposals in order to redirect the company's activities to attract new investors while increasing the company's local market share. The most recent financial data for LIL disclosed the following:

Dividend per share	Shs 3
Expected annual dividend growth rate	6 %
Current required rate of return	15%

The management of LIL wants to keep their share price competitive and thus have consulted you about the following alternatives yet to be discussed with the board of directors. The options are:

1. Do nothing in which case the key financial variables will remain unchanged.
2. Invest in a venture that will increase the dividend growth rate to 7% and lower the required rate of return to 14%.
3. Eliminate an unprofitable product line. This action will increase the dividend growth rate to 8% and raise the required rate of return to 17%.
4. Acquire a subsidiary operation from another company. This action will increase the dividend growth rate to 9% and required rate of return to 18%.

**Required:**

- (a) The valuation of ordinary shares is more practically complicated than the valuation of debt and preference shares. Explain the factors that complicate the valuation of ordinary shares.  
(5 marks)
- (b) For each of the proposed options 1 - 4 above, determine the resulting impact on share price and recommend the best option.  
(10 marks)
- (c) Identify **five** factors a company must consider when designing its dividend policy.  
(5 marks)

**(Total 20 marks)**

**Question 5**

The finance director of Benzene Ltd wishes to find the optimal capital structure and has consulted you as an independent consultant to give him professional advice. Information available about Benzene Ltd indicates that the cost of debt varies according to the company's credit rating, which itself depends, among other factors upon the level of gearing of Benzene Ltd.

The chief executive officer (CEO) is, however, convinced that the best capital structure for any organisation like Benzene Ltd should comprise of debt and equity in equal proportions (50% equity and 50% debt) so as to benefit from debt capital without necessarily affecting the company's credit rating. However, one of the board members who happens to be a CPAU student wants Benzene Ltd to be financed largely by debt citing the advantages of debt according to the traditional and Modigliani and Miller (MM) models of capital structures.

The following information is also available in relation to the company:

Debt/debt + equity	Likely credit rating	Pre-tax cost of debt
10%	AAA	6.5%
20%	AA	7.1%
30%	A	7.8%
40%	BBB	8.5%
50%	BB	10%
60%	B	12%
70%	C	15%

The company's ungeared equity beta (beta asset) is 0.85.

The risk free rate is 6% per annum and the market return is 14% per annum.

Income tax is at the rate of 30%.

**Required:**

- (a) Using the above information, estimate and recommend Benzene Ltd's optimal weighted average cost of capital, stating clearly any assumptions you may make.

**(12 marks)**

- (b) Discuss the likely shortcomings for Benzene Ltd adopting the capital structure suggested by the CEO.

**(8 marks)**

**(Total 20 marks)**

## FINANCIAL FORMULAE

### The capital asset pricing model

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

### The asset beta formula

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

### The Gordon model

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

### Gordon's growth approximation

$$g = b r_e$$

### Purchasing power parity and interest rate parity

$$S_1 = S_0 \frac{(1+i_c)}{(1+i_b)} \quad S_1 = S_0 \frac{(1+r_c)}{(1+r_b)}$$

### The Fisher formula

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

### Economic Order Quantity (EOQ)

$$EOQ = \sqrt{\frac{2C_0 D}{C_H}}$$

### Weighted Average Cost of capital (WACC)

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

### Modigliani and Miller Proposition 2 (with tax)

$$k_e = k_e^i + (1-T)(k_e^i - k_d) \frac{V_d}{V_e}$$

### Two-Asset Portfolio

$$S_p = \sqrt{w_a^2 s_a^2 + w_b^2 s_b^2 + 2w_a w_b r_{ab} s_a s_b}$$



Present value interest factor of \$1 per period at i% for n periods, PVIFA (i,n).												
Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183

	13%	14%	15%	16%	17%	18%	19%	20%	21%	22%	23%	24%
1	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833	0.826	0.820	0.813	0.806
2	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694	0.683	0.672	0.661	0.650
3	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579	0.564	0.551	0.537	0.524
4	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482	0.467	0.451	0.437	0.423
5	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402	0.386	0.370	0.355	0.341
6	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335	0.319	0.303	0.289	0.275
7	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279	0.263	0.249	0.235	0.222
8	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233	0.218	0.204	0.191	0.179
9	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194	0.180	0.167	0.155	0.144
10	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162	0.149	0.137	0.126	0.116
11	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135	0.123	0.112	0.103	0.094
12	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112	0.102	0.092	0.083	0.076
13	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093	0.084	0.075	0.068	0.061
14	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078	0.069	0.062	0.055	0.049
15	0.160	0.140	0.123	0.108	0.095	0.084	0.074	0.065	0.057	0.051	0.045	0.040

Present value interest factor of an (ordinary) annuity of \$1 per period at i% for n periods, PVIFA (in).

Period	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
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.368	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514

Period	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
2	1.713	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.547	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.037	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.589
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.231	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.605
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.207	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.421	5.197	4.988	4.793	4.611	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.302	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.462	6.142	5.847	5.575	5.324	5.092	4.876	4.675
16	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	7.702	7.250	6.840	6.467	6.128	5.818	5.534	5.273	5.033	4.812
19	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.843
20	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870