ICMAB
THE INSTITUTE OF COST AND MANAGEMENT ACCOUNTANTS OF BANGLADESH

CMA DECEMBER, 2018 EXAMINATION
STRATEGIC LEVEL
SUBJECT: F3. FINANCIAL STRATEGY

Time Allocated: Three hours | Total Marks: 100

Instructions to Candidates

There are three sections (that is A, B & C) in this paper. You are required to answer ALL questions.
Answers should be properly structured, relevant and computations need to be shown wherever necessary.
Math tables and formulae are provided on pages 8 to 9.
You are strongly advised to carefully read ALL the question requirements before attempting the question concerned (that is all parts and/or sub-questions).
ALL answers must be written in the answer book. Answers written on the question paper will not be submitted for marking.
Start answering each question from a fresh sheet. Your answers should be clearly numbered with the sub-question number then ruled off, so that the markers know which sub-question you are answering.

Section	No of questions in the Section	No of sub-questions in the Section	Marks allocation
A	01	08	20%
B	01	05	40%
C	02	02	40%

TURN OVER

SECTION A – 20 MARKS

This section consists of 1 question and 8 sub-questions.
You are advised to spend no longer than 36 minutes on this section. Section will carry 20 marks and one sub-question will carry 2.5 marks each.

QUESTION 01

(a) Comment briefly on the following statement "Financial managers need only concentrate on meeting the needs of shareholders by maximizing earnings per share – no other group matters."

[Marks: 2½]

(b) The MMH has a WACC of 16 percent. Its cost of debt is 13 percent. If MMH's debt equity ratio is 2, what is its cost of equity capital? Ignore taxes in your answer.[Use the M&M Proposition II (no taxes)]

[Marks: 2½]

(c) Suppose the risk-free rate is 8 percent. The expected return on the market is 16 percent. If a particular stock has a beta of 0.7, what is its expected return based on the CAPM? If another stock has an expected return of 24 percent, what must its beta be?

[Marks: 2½]

(d) Golden Harvest Company, whose shares currently sell at Tk. 75 each, plans to make a rights issue of one share at Tk. 60 for every four existing shares. What is the theoretical ex-rights price of the shares after the issue?

[Marks: 2½]

(e) An all-equity financed company distributes 80% of its earnings each year and reinvests the balance. The return on its projects is a constant 15% per annum. If the company's current market capitalization is Tk. 1.5 million and its earnings are Tk. 125,000, what is the required rate of return for the ordinary shareholder?

[Marks: 2½]

(f) Acquiring firm stockholders seem to benefit little from takeovers. Why is this finding a puzzle? What are some of the reasons offered for it?

[Marks: 2½]

(g) The US dollar and British pound are currently trading $1.72/£1. Inflation in the US is expected to grow at 3% annually, but at 4% annually in the UK. Predict the future spot rate in a year's time.

[Marks: 2½]

(h) Consider the following financial statement information for the ABC Company:

Item	Beginning	Ending
Inventory	1,273	1,401
Accounts receivable	3,782	3,368
Accounts payable	1,795	2,025
Net sales	14,750	
Cost of goods sold	11,375	

Required: Calculate the operating and cash cycles.

[Marks: 2½]

END OF SECTION A

SECTION B Starts on page 3

SECTION B– 40 MARKS

This section consists of 1 question and 5 sub-questions.

You are advised to spend no longer than 14.4 minutes on each sub-question in this section. Section will carry 40 marks and one sub-question will carry 8 marks each.

QUESTION 02

(a) Minicorp is a mining company. Its mission is to 'maximize profits for shareholders whilst recognizing its responsibilities to society'. It is considering a mining opportunity abroad in a remote country area where there is widespread poverty. The mining work will destroy local vegetation and may pollute the immediate water supply for some years to come. The company directors believe that permission for the mining work is likely to be granted by the government as there are few people or animals living in the area and the company will be providing much needed jobs.

Required:

(i) Identify the likely stakeholders in the company's decision.

(ii) Consider their possible objectives and describe three likely conflicts in those objectives.

[Marks: (4+4) = 8]

(b) (i) Suppose the BDJ Corporation has decided in favor of a capital restructuring that involves increasing its existing 80 million in debt to125 million. The interest rate on the debt is 9 percent and is not expected to change. The firm currently has 10 million shares outstanding, and the price per share is 45. If the restructuring is expected to increase the ROE, what is the minimum level for EBIT that BDJ's management must be expecting? Ignore taxes in your answer.

(ii) G Company expects an EBIT of 10,000 every year forever. G can borrow at 7 percent. Suppose G currently has no debt, and its cost of equity is 17 percent. If the corporate tax rate is 35 percent, what is the value of the firm? What will the value be if G borrows 15,000 and uses the proceeds to repurchase stock? [Use the M&M Proposition I (with corporate taxes)]

[Marks: (4+4) = 8]

(c) (i) Calculate the target cash balance using the BAT model: Annual interest rate 12%; Fixed order cost 100; Total cash needed 240,000. What are the opportunity cost of holding cash, the trading cost, and the total cost? What would these be if 15,000 were held instead? If 25,000 were held?

(ii) A flower shop is trying to determine the optimal order quantity of the wicker baskets that it places many of its arrangements in. The store thinks it will sell 2000 of these baskets over the next year. The baskets cost the shop Taka 2.00 each. The carrying costs of the baskets is Taka 0.15 each per year. It costs the shop Taka 8.00 to order.

(a) What is the economic order quantity?

(b) What is the total cost for ordering the baskets once a year? Four times a year?

[Marks: (4+4) = 8]

(d) A firm has identified four possible projects, all of which are divisible:

Project	Initial investment	NPV
A	50,000	100,000
B	10,000	(50,000)
C	10,000	40,000
D	15,000	45,000

All must be started immediately but the firm has only Tk. 50,000 available for investment and project C and D are mutually exclusive.

Required: Determine the optimal project selection.

[Marks: 8]

SECTION B Continues on page 4

(e) Suppose stock in W Corporation has a beta of 0.80. The market risk premium is 6 percent, and the risk-free rate is 6 percent. W's last dividend was 1.20 per share, and the dividend is expected to grow at 8 percent indefinitely. The stock currently sells for 45 per share.

Required:

(i) What is W's cost of equity capital?

(ii) In addition to the information given in the above problem, suppose W has a target debt–equity ratio of 50 percent. Its cost of debt is 9 percent before taxes. If the tax rate is 35 percent, what is the WACC?

(iii) Suppose in the above problem W is seeking 30 million for a new project. The necessary funds will have to be raised externally. W's flotation costs for selling debt and equity are 2 percent and 16 percent, respectively. If flotation costs are considered, what is the true cost of the new project?

[Marks: (4+2+2) = 8]

END OF SECTION B

SECTION C Starts on the page 5

Section C- 40 Marks

This section consists of 2 questions.

You are advised to spend no longer than 36 minutes on each question in this section. Section will carry 40 marks and allocation of marks for each sub-question is indicated next to the sub-question.

QUESTION 03

GM Inc., a producer of turbine generators, is in this situation: EBIT =Taka 4 million; tax rate = T = 35%; debt outstanding = D =Taka 2 million; r_d= 10%; r_s= 15%; shares of stock outstanding = N0 = 600,000; and book value per share = Taka 10. Because GM's product market is stable and the company expects no growth, all earnings are paid out as dividends. The debt consists of perpetual bonds.

Required:

(i) What are GM's earnings per share (EPS) and its price per share (P0)?

(ii) What is GM's weighted average cost of capital (WACC)?

(iii) GM can increase its debt by Taka8 million, to a total of Taka10 million, using the new debt to buy back and retire some of its shares at the current price. Its interest rate on debt will be 12 percent (it will have to call and refund the old debt), and its cost of equity will rise from 15 to 17 percent. EBIT will remain constant. Should GM change its capital structure?

(iv) If GM did not have to refund the Taka2 million of old debt, how would this affect things? Assume that the new and the still outstanding debt are equally risky, with r_d = 12%, but that the coupon rate on the old debt is 10 percent.

(v) What is GM's TIE coverage ratio under the original situation and under the conditions in part (iii) of this question?

[Marks: (3+2+5+5+5) = 20]

QUESTION 04

Country T and Country V are separated by sea but linked by a rail tunnel. They have different currencies (T$ and V$ respectively) but are part of the same Trade Group which promotes free trade between its members and has authority over membership countries in matters relating to competition.

TNL is a public listed company, based in Country T, which owns and operates the rail link between Country T and Country V. Trains that travel through the tunnel carry passengers, cars and other vehicles such as trucks.

TNL was first listed on 1 June 2009 by offer for sale of 100 million ordinary shares to the public at a price of T$ 3.70. Today, 21 November 2018, the share price is just T$ 2.95. The fall in the share price since 2009 is largely the result of disappointing growth and market concerns about TNL's ability to renegotiate bank borrowings that are shortly due for repayment. The ordinary shares are held by a large number of individual shareholders as well as by large institutions and pension funds. The number of shares in issue remains unchanged since 2009.

Debt funding is in the form of bank borrowings from a consortium of 10 banks to a total principal value of T$ 190 million. The borrowings were taken out on 1 June 2009 and have a 10 year term. New borrowings are currently being negotiated to finance the repayment of the original borrowings on 1 June 2019.

There is strong price competition between TNL and two independent ferry companies, TT and VV which are based in Countries T and V respectively. Prices are generally low for travel by ferry since ferries are less convenient as they operate less frequently and have longer journey times than the rail tunnel link. TT has incurred losses in the past two years.

SECTION C Continues on page 6

The board of TNL has approached ferry company TT with a view to acquiring it. The directors of TT are opposed to the bid and have referred the bid to the regional competition authorities of both Country T and the Trade Group.

Required:

(i) Discuss the possible reasons why TNL may wish to acquire TT.

(ii) Explain why the competition authorities in Country T and in the Trade Group might be concerned about the proposed acquisition.

(iii) Advise TNL on the factors that the banks are likely to consider when deciding whether or not to renew the loans made to TNL.

(iv) Recommend TNL other appropriate sources of finance that should be considered.

[Marks: (5+3+6+6) = 20]

END OF THE EXAM PAPER

MATHS TABLES AND FORMULAE

Present value table

Present value of $1, that is $(1 + r)^{-n}$ where r = interest rate; n = number of periods until payment or receipt.

Periods	Interest rates (r)									
(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
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149

Periods	Interest rates (r)									
(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
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.079	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026

Cumulative present value of $1 per annum,

Receivable or Payable at the end of each year for n years $\frac{1-(1+r)^{-n}}{r}$

Periods (n)	Interest rates (r) 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	15.679	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.878	13.590	12.462	11.470	10.594	9.818	9.129	8.514

Periods (n)	Interest rates (r) 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	7.793	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

FORMULAE

Annuity

Present value of an annuity of $1 per annum, receivable or payable for n years, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}\left[1 - \frac{1}{[1+r]^n}\right]$$

Perpetuity

Present value of $1 per annum, payable or receivable in perpetuity, commencing in one year, discounted at r% per annum:

$$PV = \frac{1}{r}$$