UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF MANAGEMENT AND FINANCE

Postgraduate & Mid-career Development Unit

Master of Business Administration (Week Day programme 2015/17) Semester III Second-half Examination –June, 2017

MBAFI- 601 – Advanced Corporate Finance

Three (03) Hours

Answer All Questions

Instructions: **1. The use of calculators is permitted.**
2. Present Value Tables are provided.

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1. i. Gameboy Inc. has hired you to perform a feasibility study of a new video game that requires a Rs. 7 million initial investment and the Company expects a total annual operating cash flow of Rs.1.3 million for the next 10 years. The relevant discount rate is 10 percent. Cash flows occur at year-end.

a. What is the NPV of the new video game?

(3.5 Marks)

b. Director Marketing, however finds that after one year, the estimate of remaining annual cash flows will be revised either upward to Rs. 2.2 million or downward to Rs. 285,000 depending on the market acceptability. Each revision has an equal probability of occurring. There won't be a change in expected cash flow in the first year. After one year, it is expected that the video game project can be sold for Rs. 2.6 million. What is the revised NPV given that the firm can abandon the project after one year?

(7.5 Marks)

ii. The Eastern Agri-Machinery Company is considering the purchase of a new paddy harvester. The Company has hired you to determine the break-even purchase price in terms of present value

of the harvester. This break-even purchase price is the price at which the project's NPV is zero. Base your analysis on the following facts:

The new harvester is not expected to affect revenues, but pretax operating expenses will be reduced by Rs. 1,300,000 per year for 10 years.

The old harvester is now 5 years old, with 10 years of its scheduled life remaining. It was originally purchased for Rs.6,500,000 and has been depreciated by the straight-line method. The old harvester can sold for Rs.2,100,000 today.

The new harvester will be depreciated by the straight-line method over its 10-year life.

The corporate tax rate is 34%. The firm's required rate of return is 15%.

The initial investment, the proceeds from selling the old harvester and any resulting tax effects occur immediately. All other cash flows occur at year-end. The market value of each harvester at the end of its economic life is zero.

(09 Marks)

(Total 20 marks)

2. i. Jeewa PLC has issued 400 million Rs. 100 debentures about 4 years ago. Together with debentures, the company gave out equal number of warrants to those who invested in the debenture to make the debenture issue attractive to the investors. The warrants will mature tomorrow and holders have right to purchase one share for one warrant paying Rs. 68 per share. However, today's market price of the company share is Rs.76/= and the number of shares outstanding is 800 million.

a. If you are offered these warrants today, what is the maximum price you are prepared for pay this warrant? Why don't you want pay anything more than that?

(03 Marks)

b. What do you expect the warrant holders to do tomorrow? What would happen to the market price of the share? Show your computation.

(03 Marks)

ii. On January 01, 2015, Mayura PLC issued a 15-year, 12 percent callable, convertible bond of Rs. 1,000 each. Today is January 01, 2018. Coupon payments are made annually. According to the bond indenture, the conversion ratio is 25 shares per bond. The company's stock is currently selling for Rs.29.50 per share. The owner of the bond will be forced to convert, if the bond's conversion value is ever greater than or equal to Rs.1,250. The current required rate of return on an otherwise identical bond is 14 percent.

a. Find the conversion value and straight value of the bond as of today. Compare them with the current price of the bond and comment on the findings.

(06 Marks)

b. The current market value of the bond is about 5% more than the straight bond value. How do you describe this price differential? Why do you think investors are ready to pay more than the straight value of the bond?

(03 Marks)

c. At what price that the stock should be trading, for the bond holders to be compelled for conversion? If the stock price is growing at the rate of 8 percent annually how long will it take this to happen?

(05 Marks)

(Total 20 marks)

3. i. For each of the following scenarios, discuss whether profit opportunities exist from trading in the stock of the firm under the conditions that;

a. i. the market is not weak form efficient,

ii. the market is weak form but not semi-strong form efficient,

iii. the market is semi-strong form but not strong form efficient, and

iv. the market is strong form efficient.

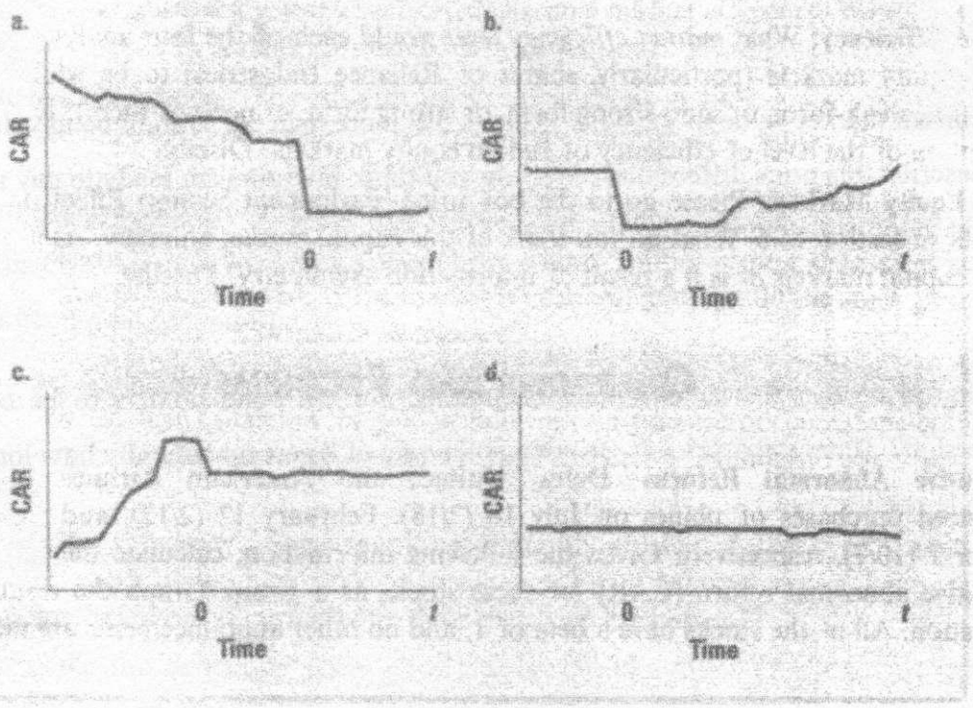
b. The stock price has risen steadily each day for the past 30 days.

c. The financial statements for a company were released three days ago, and you believe you've uncovered some anomalies in the company's inventory and cost control reporting techniques that are causing the firm's true liquidity strength to be understated.

d. You observe that the senior management of a company has been buying a lot of the company's stock on the open market over the past week.

(09 Marks)

ii. The following figures present the results of four cumulative abnormal returns (CAR) studies in relation to four different events.



Indicate whether the results of each study support, reject, or are inconclusive about the semi-strong form of the efficient market hypothesis. In each figure, time 0 is the date of an event.

(09 Marks)

(Total 18 marks)

4. i. How is the APV of a project calculated?

(05 Marks)

ii. Neon PLC's stock returns have a covariance with the market portfolio of .0415. The standard deviation of the returns on the market portfolio is 20 percent, and the expected market risk premium is 7.5 percent. The company has bonds outstanding with a total market value of Rs. 550 million and a yield to maturity of 6.5 percent. The company also has 45 million shares of common stock outstanding, each currently trading for Rs. 25. The company's CEO considers the firm's current debt–equity ratio is optimal. The corporate tax rate is 35 percent, and Treasury bills currently yield 3.4 percent. The company is considering the purchase of additional equipment that would cost Rs. 420 million. The expected unlevered after tax net cash flows from the equipment are Rs. 118 million per year for five years. Purchasing the equipment will not change the risk level of the firm.

a. Use the weighted average cost of capital approach to determine whether Neon should purchase the equipment.

(07 Marks)

b. Suppose the company decides to fund the purchase of the equipment entirely with debt. What is the cost of capital for the project now? Explain.

(06 Marks)

(Total 18 marks)

5. i. The DRK PLC has recently developed a dividend reinvestment plan (DRIP). The plan provides an option to shareholders to reinvest cash dividends automatically in DRK in exchange for new shares of stock. This transaction is not taxable. Over time, investors (shareholders) in DRK will be able to build their holdings by reinvesting dividends to purchase additional shares of the company.

Under this option, the shares of DRK can be purchased at about 8 percent discount from the market price as with DRIPs, there is no charge no brokerage or service fees.

A consultant for DRK estimates that about 75 percent of DRK's shareholders will take part in this plan. This is somewhat higher than the average. Evaluate DRK's dividend reinvestment plan. Will it increase shareholder wealth? Discuss the advantages and disadvantages involved here in the light of various theories and research findings on dividend policy.

(06 Marks)

ii. The Sharpe Co. just paid a dividend of Rs. 1.80 per share of stock. Its target payout ratio is 40 percent. The company expects to have an earnings per share of Rs. 6.00 one year from now.

a. If the adjustment rate is 0.4 as defined in the Lintner model, what is the dividend one year from now?

b. If the adjustment rate is 0.6 instead, what is the dividend one year from now?

c. Which adjustment rate is more conservative? Why?

(08 Marks)

(Total 14 marks)

6. Browns PLC has a market value of Rs. 400 million and 30 million shares outstanding. Harrold Department Store has a market value of Rs. 160 million and 18 million shares outstanding. Browns is contemplating acquiring Harrold. Browns' CFO concludes that the combined firm with synergy will be worth of Rs. 590 million and Harrold can be acquired at a premium of Rs. 15 million.

i. If Browns offers 12 million shares of stock in exchange for 18 million shares of Harrold, what will the stock price of Browns be after the acquisition?

(05 Marks)

ii. What exchange ratio between the two stocks would make the value of the stock offer equivalent to a cash offer of Rs. 175 million?

(05 Marks)

(Total 10 Marks)

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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 (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	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	0705	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 (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	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