JARAMOGI OGINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS AND ECONOMICS

MASTERS OF BUSINESS ADMINISTRATION

TIME: 3.00 HOURS

UNIVERSITY EXAMINATION

CITY CAMPUS

COURSE CODE: MBA 822

ACADEMIC YEAR OF STUDY: 2018/2019

COURSE TITLE: SECURITY ANALYSIS AND VALUATION

DATE:

INSTRUCTIONS:

1. **Answer ANY FOUR Questions**
2. **Candidates are advised not to write on the Question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (15 MARKS)

a) Discuss the characteristics of Random Walk Theory. How is it different from Chartism?

(3 marks)

b) A company currently has Shs 20 000 000, 12% debenture issue outstanding which has 20 years remaining to maturity. The company can now sell a Shs 20 million 20 year bond or debenture with a normal or coupon rate of 20% that will net Shs 19.6 million, after the underwriting expenses of the old bond. The core premium and the unamortized discount of the old bond are deductible as expenses in the year of refunding. The old issue has Shs 200 000 unamortized discounts outstanding and unamortized legal fee of Shs 100 000. The core right of old bond is Shs 109 and the issuing expenses on the new bond are Shs 150, 000 and there is a 30 day period of interest overlap. Assume that the effective income tax is 50%.

Required:
Advice the company on whether to replace the old issue with the new bonds. (5 marks)

c) Assume that the finance manager of ABC Ltd expects to generate sales of £50 000 in the current financial year. Analysis of the firms operating cost structure reveals that variable operating cost is 40% of sales and fixed operating cost at £250 000.

The manager wishes to explore the effect of changes in sales and has developed 2 scenarios.

Sales revenue is 10% less than expected

Sales revenue is 10% greater than expected

Required:

i) Compute EBIT for each of the scenarios and the degree of operating gearing

(4 marks)

ii) compute the degree of total gearing (3 marks)

QUESTION TWO (15 MARKS)

a) With the help of a diagram discuss the factors that affect the value of a Call Option

(4 marks)

b) Explain the assumptions and limitations of capital asset pricing model (CAPM). Why is Arbitrary pricing model (APT) more robust than CAPM (5 marks)

c) ABC Company is being formed to make a 1 year investment in producing and marketing presidential campaign badges. The firm requires an investment of Sh 10,000,000 of which Sh 7,500,000 will be obtained by selling debt with a 10% interest rate and the other Sh 2,500,000 will be raised by selling common shares. All cash distribution to debt holders and shareholders will be made at the end of the one year. After this year is over the value of the firm will depend primarily on which candidates make it through the primary elections. The estimated probability of distribution of the firm is:

Probability	Value `000'
0.7	20,000
0.2	5,000
0.1	0

Consider the shareholders' value under the three states of nature and under the expected value.   (6 marks)

QUESTION THREE (15 MARKS)

a) Assume that the risk free rate of return is 8%, the market expected rate of return is 12%. The standard deviation of the market return is 2% while the covariance of return for security A and the market is 2%.

Required:

What is the required rate of return on Security A? (3 marks)

b) Four assets have the following distribution of returns.

Probability Occurrence	Rate of return (%)			
	A	B	C	D
0.1	10.0%	6.0%	14.0%	2.0%
0.2	10.0	8.0	12.0	6.0
0.4	10.0	10.0	10.0	9.0
0.2	10.0	12.0	8.0	15.0
0.1	10.0	14.0	6.0	20.0

Required:

a) Compute the expected return and standard deviation of each asset. (3 marks)

b) Compute the covariance of asset   (6 marks)

   i.   A and B

   ii.   B and C

   iii.   B and D

c) Compute the correlation coefficient of the combination of assets in b above. (3 marks)

QUESTION FOUR (15 MARKS)

a) Enumerate in details the Features of Debentures (3 marks)

b) Discuss the assumptions of the Black and Scholes Option Pricing Model (OPM) (4marks)

a) XYZ Ltd has 900,000 shares outstanding at current market price of Sh 130 per share. The company needs Sh 22,500,000 to finance its proposed expansion. The board of directors has decided to issue rights for raising the required funds. The subscription price has been fixed at Sh 75 per share.

Required:

(a) How many rights are required to purchase one new share?   (2 marks)

(b) What is the price of one share after the rights issue (Ex-right price)? (1 marks)

(c) Compute the theoretical value of each right   (1marks)

(d) Consider the effect of the rights issue on the shareholders' wealth under the three options available to the shareholders (Assume he owns 3 shares and has Sh 75 cash on hand).   (4 marks)

QUESTION FIVE (15 MARKS)

a) Discuss the distinguishing features of : Market segmentation theory, Liquidity preference theory and the Expectation theory   (5 marks)

b) Using the attached Annuity table and assuming an Interest Rate of 10%

Determine:

i)   The future value of Kshs: 500,000 invested now for a period of 10 years
       (2 marks)

ii) The future value at the end of eight years of an investment of Kshs: 100,000 now and Kshs: 50,000 two years from now. (3 marks)

iii) The future value at the end of fifteen years of an investment of Kshs: 2, 000,000 at the end of each of the first five years and withdrawal of Kshs: 800,000 per year at the end of years six through fourteen. (5 marks)

QUESTION SIX (15 MARKS)

a) Discuss the factors that influence the Cost of Capital (3 marks)

b) Maria Ltd is expected to grow 10% per year. Maria's ordinary shares pay a dividend of kshs: 2.00 and sell for kshs: 25.00. What is Maria's cost of equity capital (2 marks)

c) Enumerate the distinguishing features between:

    (i) Capital and money markets   (3 marks)
    (ii) Future and forward markets   (4 marks)

d) Explain why the Capital Markets are more developed than Money Markets in Kenya

                                                              (3 marks)

TABLE C.3
APPENDIX C

Future Value of $1 at the End of *n* Periods:

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%	16%	18%	20%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1200	1.1400	1.1500	1.1600	1.1800	1.2000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100	1.2544	1.2996	1.3225	1.3456	1.3924	1.4400
3	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.4049	1.4815	1.5209	1.5609	1.6430	1.7280
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5735	1.6890	1.7490	1.8106	1.9388	2.0736
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.7623	1.9254	2.0114	2.1003	2.2878	2.4883
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.9738	2.1950	2.3131	2.4364	2.6996	2.9860
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.2107	2.5023	2.6600	2.8262	3.1855	3.5832
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.4760	2.8526	3.0590	3.2784	3.7589	4.2998
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.7731	3.2519	3.5179	3.8030	4.4355	5.1598
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	3.1058	3.7072	4.0456	4.4114	5.2338	6.1917
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.4785	4.2262	4.6524	5.1173	6.1759	7.4301
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.8960	4.8179	5.3502	5.9360	7.2876	8.9161
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4098	2.7196	3.0658	3.4523	4.3635	5.4924	6.1528	6.8858	8.5994	10.699
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.8871	6.2613	7.0757	7.9875	10.147	12.839
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	5.4736	7.1379	8.1371	9.2655	11.973	15.407
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9522	3.4259	3.9703	4.5950	6.1304	8.1372	9.3576	10.748	14.129	18.488
17	1.1843	1.4002	1.6528	1.9479	2.2920	2.6928	3.1588	3.7000	4.3276	5.0545	6.8660	9.2765	10.761	12.467	16.672	22.186
18	1.1961	1.4282	1.7024	2.0258	2.4066	2.8543	3.3799	3.9960	4.7171	5.5599	7.6900	10.575	12.375	14.462	19.673	26.623
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6165	4.3157	5.1417	6.1159	8.6128	12.055	14.231	16.776	23.214	31.948
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	9.6463	13.743	16.366	19.460	27.393	38.337
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0338	6.1088	7.4002	10.803	15.667	18.821	22.574	32.323	46.005
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6586	8.1403	12.100	17.861	21.644	26.186	38.142	55.206
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8197	4.7405	5.8715	7.2579	8.9543	13.552	20.361	24.891	30.376	45.007	66.247
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	15.178	23.212	28.625	35.236	53.108	79.496
25	1.2824	1.6406	2.0938	2.6658	3.3864	4.2919	5.4274	6.8485	8.6231	10.834	17.000	26.461	32.918	40.874	62.668	95.396
26	1.2953	1.6734	2.1566	2.7725	3.5557	4.5494	5.8074	7.3964	9.3992	11.918	19.040	30.166	37.856	47.414	73.948	114.47
27	1.3082	1.7069	2.2213	2.8834	3.7335	4.8223	6.2139	7.9881	10.245	13.110	21.324	34.389	43.535	55.000	87.259	137.37
28	1.3213	1.7410	2.2879	2.9987	3.9201	5.1117	6.6488	8.6271	11.167	14.421	23.883	39.204	50.065	63.800	102.96	164.84
29	1.3345	1.7758	2.3566	3.1187	4.1161	5.4184	7.1143	9.3173	12.172	15.863	26.749	44.693	57.575	74.008	121.50	197.81
30	1.3478	1.8114	2.4273	3.2434	4.3219	5.7435	7.6123	10.062	13.267	17.449	29.959	50.950	66.211	85.849	143.37	237.37