ICMA Pakistan

SPRING 2013 EXAMINATIONS
Wednesday, the 4th September 2013
INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT – (AF-602)
SEMESTER-6

Extra Reading Time:	**15 Minutes**	**Maximum Marks: 90**	**Roll No.:**
Writing Time:	**02 Hours 45 Minutes**		

(i) Attempt all questions.
(ii) Answers must be neat, relevant and brief.
(iii) In marking the question paper, the examiners take into account clarity of exposition, logic of arguments, effective presentation, language and use of clear diagram/ chart, where appropriate.
(iv) Read the instructions printed inside the top cover of answer script CAREFULLY before attempting the paper.
(v) Use of non-programmable scientific calculators of any model is allowed.
(vi) DO NOT write your Name, Reg. No. or Roll No. anywhere inside the answer script.
(vii) Question No.1 – "Multiple Choice Question" printed separately, is an integral part of this question paper.
(viii) **Question Paper must be returned to invigilator before leaving the examination hall.**

Answer Script will be provided after lapse of 15 minutes Extra Reading Time (9:30 a.m. or 2:30 p.m. [PST] as the case may be).

Marks

Q. 2 **(a)** Differentiate between:

(i) Investor and a Speculator; (briefly describe three traits of each). **03**

(ii) Current Yield and Capital Yield. **02**

(b) An investor purchased 100 shares of a stock for Rs. 75 per share. Compute the investor's return if the stock was purchased on a 60% margin and was sold later for Rs. 150 per share. **(Ignore transaction costs and interest paid on borrowed funds)** **05**

(c) A stock earns the following returns over a five year period:

R-1 = 15%, R-2 = –10%, R-3 = 17%, R-4 = 20%, R-5 = –2%, R-6 = 13%

Required:

Calculate the expected return and risk (standard deviation) of the stock. **08**

(d) Given that current interest rate is 12%, which of the following investment options provide better value **(show necessary calculations)**: **04**

(i) Rs. 250,000 now; or

(ii) Rs. 500,000 five years from now.

Q. 3 **(a)** The following table gives the rate of return on Stock-A and on the market portfolio for five years:

Year	Return on Stock-A (%)	Return on Market Portfolio (%)
1	8	10
2	12	13
3	–3	5
4	10	8
5	13	9

Required:

What is the beta of the Stock-A? **05**

Marks

(b)

	Stock-A	Stock-B
Expected return	8%	15%
Standard deviation	8%	13%
Coefficient of correlation	0.54	

Required:

(i) Calculate the covariance between stocks 'A' and 'B'. **01**

(ii) What is the expected return and risk of a portfolio in which Stock-A and Stock-B are equally weighted? **03**

Q. 4 (a) Stock XYZ is expected to give a dividend of Rs. 17.25 next year which will grow by 5% per year for the foreseeable future. XYZ pays out 65% of its earnings and the required rate of return on XYZ is 11.23%.

Required:

(i) Calculate the current price of the stock. **02**

(ii) Calculate the Present Value of Growth Opportunities (PVGO). **03**

(b) The financials of a top tier FMCG company for the last five years are given below:

Income Statement Summary Rs. in million

Year	1	2	3	4	5
Net sales	22,500	27,000	31,250	37,625	47,500
Profit before interest & tax	6,750	7,625	7,813	9,750	14,750
Interest	1,350	1,750	1,875	2,338	3,625
Profit before tax	5,400	5,875	5,938	7,413	11,125
Tax	1,563	1,750	1,775	2,250	3,438
Profit after tax	3,838	4,125	4,163	5,163	7,688
Dividends	1,350	1,450	1,463	2,063	3,075
Retained earnings	2,488	2,675	2,700	3,100	4,613

Balance Sheet Summary Rs. in million

Year	1	2	3	4	5
Equity capital (Rs. 10 par)	1,875	1,875	1,875	1,875	1,875
Reserves and surplus	10,000	12,675	15,375	18,475	23,088
Loan funds	2,500	3,000	3,125	3,438	4,063
Capital employed	14,375	17,550	20,375	23,788	29,025
Net fixed assets	10,000	10,375	11,875	14,625	19,125
Investments	1,250	1,375	1,500	1,688	1,750
Net current assets	3,125	5,800	7,000	7,475	8,150
	14,375	17,550	20,375	23,788	29,025
Market price per share (year ended)	150	220	225	337.5	577.5

At the end of current year, i.e., Year-5, the market price per share is Rs. 577.50. The market price per share at the beginning of Year-1 was Rs. 102.50.

Required:

(i) Calculate the sustainable growth rate based on the average retention ratio and the average return on equity for the past 2 years. **07**

(ii) Forecast the EPS for the next year (Year-6) using the following assumptions: **06**

- Net sales will grow at 10%.
- EBIT/ Net sales ratio will improve by 3% over its year 5 value.
- Interest will increase by 3% over its year 5 value.
- Effective tax rate will be 30%.

Marks

(c) Differentiate between Technical Analysis and Fundamental Analysis. **03**

Q. 5 **(a)** A bond with par value of Rs. 1,000, coupon rate of 13% (payable annually) matures in 5 years. The bond is currently selling for Rs. 965. If the applicable re-investment rate is 15% over the whole period, what is the yield to maturity on this bond? **05**

(Hint: Use the concept of annuity)

(b) Apollo Ventures is issuing a partly convertible debenture for Rs. 1,000. The instrument carries an interest rate of 14%. Out of Rs. 1,000, 50% will be converted into two ordinary shares of Apollo Ventures a year from now. The expected price per share of Apollo's equity a year from now would be Rs. 270. The non-convertible portion will be redeemed in four equal instalments of Rs. 125 each at the end of years 2, 3, 4 and 5 respectively. The corporate tax rate is 35% and the net price per share that the company would realize for the equity after a year would be Rs. 260.

Required:

Calculate the value of the issue. Assume that the investors' required rate of return on the debt component and the equity component are 12% and 16% respectively. **08**

(c) Differentiate between the following:

(i) Call Option and Put Option. **01**

(ii) American Option and European Option. **01**

(d) The following information is available for a call option written on the stock of Efficient Energy Ltd.:

Time to expiration (months)	12
Risk free rate	9.5%
Exercise price	Rs. 180
Stock price	Rs. 200
Call price	Rs. 165

Required:

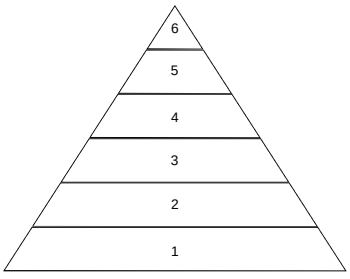
Calculate the value of a comparable put option on the same stock and for the same market using Put-Call parity. **04**

Q. 6 **(a)** Describe any four strategies for overcoming Psychological Biases in investment decision making. **04**

(b) **(i)** What are the three main goals of a real world investor while forming an investment portfolio? **01**

(ii) Label the correct asset allocation order in front of each asset type corresponding to the behavioural portfolio pyramid as given below: **03**

Asset Type	Order of Allocation
Stocks	
Options	
Residential House	
Bonds	
Cash	
Commercial Property	



Marks

(c) Describe any four constraints that influence the Investment Policy of an investor. **04**

(d) Discuss any three salient features of Warren Buffet's investment philosophy. **03**

(e) The return on a mutual fund during the last few years was 40%, when the return on the market portfolio was 31%. The standard deviation of the portfolio return was 12% whereas the standard deviation of the market portfolio returns was 20%. The portfolio beta was 1.3. The risk-free rate was 10%.

Required:

Calculate the Treynor Measure and Jansen Measure of the fund. **04**

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FUTURE VALUE INTEREST FACTOR (FVIF) – $FVIF(r, n) = (1 + r)^n$							
Period (n)	**12%**	**13%**	**14%**	**15%**	**16%**	**17%**	**18%**
1	1.120	1.130	1.140	1.150	1.160	1.170	1.180
2	1.254	1.277	1.300	1.322	1.346	1.369	1.392
3	1.405	1.443	1.482	1.521	1.561	1.602	1.643
4	1.574	1.630	1.689	1.749	1.811	1.874	1.939
5	1.762	1.842	1.925	2.011	2.100	2.192	2.288
6	1.974	2.082	2.195	2.313	2.436	2.565	2.700
7	2.211	2.353	2.502	2.660	2.826	3.001	3.185
8	2.476	2.658	2.853	3.059	3.278	3.511	3.759
9	2.773	3.004	3.252	3.518	3.803	4.108	4.435
10	3.106	3.395	3.707	4.046	4.411	4.807	5.234

FUTURE VALUE INTEREST FACTOR FOR AN ANNUITY (FVIFA) – $FVIFA(r, n) = \frac{(1 + r)^n - 1}{r}$							
Period (n)	**12%**	**13%**	**14%**	**15%**	**16%**	**17%**	**18%**
1	1.000	1.000	1.000	1.000	1.000	1.000	1.000
2	2.120	2.130	2.140	2.150	2.160	2.170	2.180
3	3.374	3.407	3.440	3.473	3.506	3.539	3.572
4	4.779	4.850	4.921	4.993	5.066	5.141	5.215
5	6.353	6.480	6.610	6.742	6.877	7.014	7.154
6	8.115	8.323	8.536	8.754	8.977	9.207	9.442
7	10.089	10.405	10.730	11.067	11.414	11.772	12.142
8	12.300	12.757	13.233	13.727	14.240	14.773	15.327
9	14.776	15.416	16.085	16.786	17.518	18.285	19.086
10	17.549	18.420	19.337	20.304	21.321	22.393	23.521