Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/MBA(NEW)/SEM-3(FT)/FM-303/2009-10

2009

SECURITY ANALYSIS & PORTFOLIO MANAGEMENT

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

   i) Interest rate risk occurs when

      a) the market price of bond moves inversely to the prevailing market interest rate

      b) the variability in yield is due to the market interest rate fluctuations

      c) there is variability in the coupon interest rates

      d) all of these.

ii) Mr. *A* purchases a stock in the stock market. His holding period return depends on the

a) purchase price of the stock

b) selling price of the stock

c) dividend paid to the stock

d) all of these.

iii) The value of the bond depends on

a) the coupon rate

b) years to maturity

c) expected yield to maturity

d) all of these.

iv) Risk in the purchase of Infosis and Satyam stock will be eliminated when

a) $r = +0{\cdot}2$ b) $r = -1$

c) $r = 0$ d) $r = 0{\cdot}1$

v) The *X* company has the beta of 1·5. The expected return is 15%. The risk free rate of interest is 5%. What is the market return ?

a) 6·67% b) 10·33%

c) 15·66% d) 12·33%.

vi) The relation between beta of a security and its correlation co-efficient with the market returns can be expressed as

a) $r\,\sigma_1 = \beta\,\sigma_m$ b) $r\,\sigma_m = \beta\,\sigma_1$

c) $r\,\sigma_m = \beta^2\,\sigma_1$ d) $r^2\,\sigma_1 = \beta\,\sigma_m$.

vii) What is the value of a share of *XYZ* Ltd. under constant growth dividend capitalization approach if dividend (Do) = 3, required rate of return by shareholders® = 24% and dividend growth rate (g) = 10% ?

a) Rs. 13·75 b) Rs. 21·43

c) Rs. 23·57 d) Rs. 23·93.

viii) If interest rates rise, the price of preferred stock

a) is not affected b) rises

c) falls d) may rise or fall.

ix) Which of the following helps to determine the relationship between the expected return and risk for individual securities ?

a) Security market line b) Capital market line

c) Markowitz model d) Both (a) and (b).

x) Which of the following is on the horizontal axis of the Security Market Line ?

a) Standard deviation b) Beta

c) Expected return d) Required return.

xi) Tracking error is defined as

a) the difference between the returns on the overall risky portfolio versus the benchmark return

b) the variance of the return of the benchmark portfolio

c) the variance of the return difference between the portfolio and the benchmark

d) the variance of the return of the actively-managed portfolio.

xii) The beta of an active portfolio is 1·54. The standard deviation of the returns on the market index is 22%. The nonsystematic variance of the active portfolio is 3%. The standard deviation of the returns on the active portfolio is

a) 36·30% b) 5·84%

c) 19·60% d) 24·17%.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What is immunization ? Discuss in detail how immunization is effected. What are the problems of immunization ? Discuss.

3. YTM on a 7 year bond is 9% and YTM on 10 year Bond is 10·5%. What is the implied average forward rate for a 3 year bond, starting in 8th year ?

4. The alpha of an active portfolio is 3%. The expected return on the market index is 18%. The standard deviation of the return on the market portfolio is 25%. The nonsystematic standard deviation of the active portfolio is 15%. The risk-free rate of return is 6%. Comment on the risk horizon of the portfolio.

5. Find expected return on the market portfolio.

Share	Dividend (Rs.)	Market Price at the beginning (Rs.)	Market Price at the end (Rs.)	Capital Gain (loss) (Rs.)
A	5	100	110	10
B	5	100	80	(–) 20
C	5	10	40	30
D	10	100	115	15
	25	310	345	35

6. Discuss in brief the theory of Arbitrage Pricing.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) For the four years *XYZ* Company Limited assumed to grow at a rate of 10%. After four years the growth rate of dividend is assumed to declined linearly to 6%. After 7 years, the firm is assumed to grow at a rate of 8% infinitely. The next year dividend is Rs. 3 and the required rate of return is 14%. Find out the intrinsic value of the stock.

Discount factor	*Year 1*	*Year 2*	*Year 3*	*Year 4*	*Year 5*
At 14%	0·909	0·826	0·751	0·683	0·621

b) The current price of a company's share is Rs. 200. The company is expected to pay dividend of Rs. 5 per share next year with an annual growth rate of 10%. If an investor's required rate of return is 12%, should he buy the share ?

c) Calculate the price of an equity share from the following data :

Earning Per Share (EPS) is Rs. 20; Internal rate of return (r) is 20%.

Equity Capitalization Rate $\left(K_e \right)$ is 20%. 9 + 3 + 3

8. a) The beta coefficient of Target Ltd. is 1·4. The company has been maintaining an 8 per cent rate of growth in dividends and earnings. The last dividend paid was Rs. 4 per share. The return on government securities is 10 per cent.

The return on market portfolio is 15 per cent. The current market price of one share of Target Ltd. is Rs. 36.

i) What will be the equilibrium price per share of Target Ltd. ?

ii) Would you advise purchasing the share ?

b) A bond has the following characteristics :

i) Face value — Rs. 1,000/-

ii) Tenure — 5 years

iii) Coupon rate — 10% p.a., payable annually

iv) Redemption — At par on maturity.

Compute the intrinsic value of the bond. 8 + 7

9. The equity shares of S Ltd. are presently trading at Rs. 96 per share. The company has recently paid a dividend of Rs. 3·00 per share. A security analyst has projected the following information for the next year :

Scenario	***Optimistic***	***Normal***	***Pessimistic***
Probability	30%	40%	30%
Projected share price	Rs. 110	Rs. 105	Rs. 99
Projected dividend	Rs. 4	Rs. 3	Rs. 3
Projected market return	15%	12%	8%

You are required to

i) find out the expected return and risk for the equity shares of the company.

ii) find out the expected return and risk for the market.

iii) estimate the beta coefficient for the equity shares of the company and state its implication. 15

10. *ABC* Co. is considering an investment project which has an estimated life of four years. The cost of project is 10,000 and the possible cash flows are given below :

Year 1		***Year 2***		***Year 3***		***Year 4***	
Cash flow	***Prob.***	***Cash flow***	***Prob.***	***Cash flow***	***Prob.***	***Cash flow***	***Prob.***
2,000	0·2	3,000	0·4	4,000	0·3	2,000	0·2
3,000	0·5	4,000	0·3	5,000	0·5	3,000	0·4
4,000	0·3	5,000	0·3	6,000	0·2	4,000	0·2

The cash flows of various years are independent and the risk-free discount rate (post-tax) is 6 per cent.

a) What is the expected NPV and Standard Deviation of NPV ?

b) If the NPV is approximately normally distributed then how will the probability that the NPV be zero or less could be estimated ? (Show the method of calculation only). 15

11. "The basic proposal of CAPM may be stated as Investors do not bother about unsystematic risk because they can eliminate the same through diversification. Their main concern is systematic risk. Thus the excess return they demand must be proportional to systematic risk the asset carries." Explain this by elaborating on the Capital Asset Pricing Model of Sharpe, Linter and Mossin. 15

12. Write short notes on any *three* of the following : $3 \times 5 = 15$

a) Leveraged portfolio

b) Stock Exchanges

c) Efficient Frontier

d) Sharpe's Single Index Model

e) Economic Value Added (EVA)

f) Internal Rate of Return (IRR) and its applicability.