

SL No of QP 9884

Unique Paper Code : 2923100006

Name of the Paper : Investment and Portfolio Optimization

Name of the Course : B.A. (H) Business Economics 2024 (NEP)

Semester : V

Duration : 3 hours

Maximum Marks : 90 Marks

Instructions to the Candidates

- Attempt any five questions, all questions carry equal marks
- Use of simple calculator and Present Value tables is permitted.
- If any assumption is made while solving a problem, the same must be stated clearly and a note must be mentioned after the answer.

Q1. (a) An investor is evaluating two different investment proposals, both offer same potential returns of 13%, 16%, 22%, and 25%, however probabilities associated differ between the two proposals. The probabilities of achieving returns for Proposal I are 0.1, 0.2, 0.3, and 0.4, respectively while for Proposal 2, these are 0.1, 0.4, 0.3, and 0.2, respectively.

Calculate the expected return and risk associated for both proposals. Which one of these projects should the investor undertake if assessment is based upon risk-adjusted returns

(b) ABC Co. recently paid a dividend of Rs 2 per share. Due to the company's rapid expansion, the dividend is projected to grow at a rate of 20% per annum for the next 3 years. However, after this period, the growth rate is expected to slow down to 7% per annum indefinitely. Considering the investment's risk, a required rate of return of 22% is deemed appropriate. Determine the fair price that an investor should be willing to pay for the Co's shares.

(10,8)

Q2. (a) Explain the Dow theory and Elliot wave theory with the help of a diagram. Explain how the former theory can be used to determine the direction of the stock market?

(b) A company has a P/E ratio significantly higher than the industry average. What are some possible reasons for this, and how would you determine whether the stock is overvalued or fairly valued based on the P/E ratio. Are there any pitfalls associated with the P/E ratio analysis?

(10,8)

Q3. (a) An investor is considering the purchase of a Bond with Face Value: Rs. 100, Coupon Rate: 11%, Maturity: 4 Years. Determine:

- (i) The maximum price the investor should be ready to pay, if he wants a yield of 13%.
- (ii) Calculate the YTM of the Bond, if the Bond is currently selling for Rs. 97.60.

(b) A zero-coupon corporate bond having a face value of Rs. 100 matures after one year and is available today for Rs. 96.35. The yield on a similar Government bond is 4%. If the bond defaults the investors can expect only 60%. What is the probability of default of this bond.

(c) A 7 % 20-year Government Bond has a YTM of 8.5 % and Modified Duration of Bond is 12.66. Show what would be the percentage change in Bond Price if the YTM changes from 8.5% to 9.0 %.

(10,4,4)

Q4. (a) For the next one year you are expecting stock market to be either normal or slip into recession with the ratio of probabilities of these scenario being 1:2 . You want to form a portfolio of two stock A&B with equal weightage, the following information is provided

State of the Economy	R _A	R _B
Normal	8%	-3%
Recession	3%	1%

You are required to compute the following:

- Expected return and Variance for stock A and stock B.
- Covariance and Coefficient of Correlation between stock A and stock B.
- Portfolio Return and Portfolio Variance

(b) What is Capital Market Line (CML), Plot the line graphically and write down its equation. What does slope of this line represent. Do you think CML is also the line of capital allocation. Discuss.

(10,8)

Q5. (a) The performance of two portfolios, namely A and

B and Market is given as under:

	Average Return (%)	Std Deviation (%)	Beta
Portfolio A	10	5	0.5
Portfolio B	12	7	0.4
Market Index	20	15	
Risk Free Rate of Return	6%		
Standard Deviation of the Error term	14%		

- Calculate the Treynor Ratio, Sharpe Ratio, Jensen's Alpha and Information ratio measures for both the Portfolios and the Market.
- Which Portfolio should the investor buy if he has to choose any one and why?

(b) Calculate the missing values (?) in the following Table:

Stock /Market	Std. Deviation (%)	Beta	Residual Variance
A	48	?	0.0325
B	?	0.64	0.0722
Market	10	?	-

(10,8)

Q6 (a) 'The value of a bond is a function of Coupon Rate, Market Rate of Return, Maturity Period and Repayment on Maturity.' Do you agree? Illustrate the relationship between each of these factors and value of a bond.

(b) Suppose you hold one stock and want to diversify to reduce portfolio risk by adding second stock, what should be the criteria to be followed if you want to achieve a good diversification. Furthermore, can you achieve risk elimination by using the technique of risk diversification. Comment. (10,8)

Q7. Write short notes (*giving your own examples and illustrations wherever necessary*) on **any three** of the following:

- Random Walk Theory
- Market Segment theory of term structure of interest rates
- Attributes of a good investment
- Free Cash Flow Valuation' approach
- Yield curve

(6,6,6)
