

**SOME PRACTICAL QUESTIONS ON SAPM
RISK & RETURN (SET- 1)**

- On 1 January 2009, Mr Y.P. Sinha purchased 100 shares of L&T at Rs 212 each. During the year, he received total dividends of Rs 700. Mr Sinha sold all his shares at Rs 215 each on 31 December 2009. Calculate Mr Sinha's (i) capital gain amount, and (ii) total return in (a) rupee amount and (b) percentage.
- The closing price of share last year was Rs 50. The dividend per share was Rs 5 during the year. The current year closing price is Rs 57. Calculate the percentage return on the share, showing the dividend yield and the capital gain rate.
- You acquired Telco's 200 shares at Rs 87 each last year. The par value of a share is Rs 10. Telco paid a dividend of 15 per cent during the year. You sold 200 shares at a total value of Rs 18,500 after one year. What is your (i) dividend yield, (ii) rate of capital gain, and (iii) total rupee and percentage returns.
- You bought Infosys share for Rs 4,250 two years ago. You held the stock for two years, and received dividend per share of Rs 90 and Rs 125 respectively at the end of the first and the second years. You sold the share for Rs 4,535 after two years. What was your two-year holding period return on Infosys share?
- You expect to earn a return of 17 per cent on a share. If the inflation rate is 5.5 per cent, what is your real rate of return?
- Suppose shares of Hind Ltd and Nirmala Ltd were selling at Rs 100 two years ago. Hind's price fell in the first year by 12 per cent and rose by 12 per cent in the second year. The reverse was the case for Nirmala's share price — it increased by 12 per cent and then decreased by 12 per cent. Would they have the same price after two years? Why or why not? Show computations.
- An asset is expected to earn the following rates of return for the period 2004-10:

<i>Year</i>	2004	2005	2006	2007	2008	2009	2010
<i>Return (%)</i>	15.3	-5.6	17.3	25.0	16.8	9.5	28.8

What is the seven-year holding period return from the asset? How much is the annual compound rate of return?

- The following are the returns on the share of Reliable Company for past five years:

<i>Year</i>	1	2	3	4	5
<i>Return (%)</i>	5.3	15.6	-7.3	15.0	19.8

Calculate the average return for the five years. Also calculate the standard deviation and variance of the returns for the period.

- The economy of a country may experience rapid growth or moderate growth or recession. There is 0.15 probability of rapid growth and the stock market return is expected to be 19.5 per cent. The probability of moderate growth is 55 per cent with a 14 per cent expectation of the stock market return. There is 0.30 probability of recession and the stock market return is expected to be 7 per cent. Calculate the expected stock market return and the standard deviation of the return.
- An asset has the following possible returns with associated probabilities:

<i>Possible returns</i>	20%	18%	8%	0	-6%
<i>Probability</i>	0.10	0.45	0.30	0.05	0.10

Calculate the expected rate of return and the standard deviation of that rate of return.

- Securities *X* and *Y* have the following characteristics:

<i>Security X</i>		<i>Security Y</i>	
<i>Return</i>	<i>Probability</i>	<i>Return</i>	<i>Probability</i>
30%	0.10	-20%	0.05
20%	0.20	10%	0.25
10%	0.40	20%	0.30
5%	0.20	30%	0.30
-10%	0.10	40%	0.10

You are required to calculate the expected return and standard deviation of return for each security. Which security would you select for investment and why?

- The distribution of returns for share *P* and the market portfolio is given below:

<i>Returns (%)</i>		
<i>Probability</i>	<i>Share P</i>	<i>Market</i>
0.30	30	-10
0.40	20	20
0.30	0	30

You are required to calculate the expected returns, standard deviation and variance of the returns of share *P* and the market.

13. The following are the returns during seven years on a market portfolio of shares and 91-day Treasury Bills: You are required to calculate (i) the realised risk premium of shares over treasury bills in each year and (ii) the average risk premium of shares over treasury bills during the period. Can the realised premium be negative? Why?

<i>Portfolio of</i>	<i>Treasury</i>	<i>YearShares (%)</i>	<i>Bills (%)</i>
1	.5	11.4	
2	6.8	9.8	
3	26.8	10.5	
4	24.6	9.9	
5	3.2	9.2	
6	15.7	9.2	
7	12.3	11.2	

14. The stock market and treasury bills returns are expected to be as follows:

<i>Economic Conditions</i>	<i>Probability</i>	<i>Market Return (%)</i>	<i>Treasury Bills (%)</i>
Growth	0.20	28.5	9.7
Decline	0.30	-5.0	9.5
Stagnation	0.50	17.9	9.2

You are required to calculate (i) the expected market and treasury bills returns and (ii) the expected risk premium.

15. Suppose that returns of Sunshine Company Limited's share are normally distributed. The mean return is 20 per cent and the standard deviation of returns is 10 per cent. Determine the range of returns in which about 2/3rd of the company's returns fall.
16. Suppose the rates of return on Maneklal Engineering Ltd's share have a normal distribution with a mean of 22 per cent and a standard deviation of 25 per cent. What is the probability of the return being 30 per cent?