

[4]

The present price of the share on NSE is Rs 450. There is rumour in the market that the XYZ company may issue bonus for the shares shortly. The investor wants the answer for following:

- (a) Is there any ground for such rumour?
- (b) Is the capital structure sound?
- (c) Is it proper to purchase the shares?

Analyse the data and advise him.

OR iii. Explain the industry analysis. Also classify the industries and explain Industry Life Cycle. **6**

Q.5 i. "All efficient portfolios are feasible but all feasible portfolios are not efficient". Do you agree? Explain in the context of Markowitz Model. **3**

ii. You are given the following information about two securities P and Q. **7**

Security	P	Q
Actual Return (%)	12	23
Beta	0.6	1.6

Risk free rate is 7% and expected return on market portfolio is 17%. Do you think that securities A and B are efficiently priced in the market? Do they lie on SML? Evaluate on basis of Sharpe Index Model.

OR iii. Following information is available about two securities X and Y. **7**

Security	X	Y
Expected return	15%	20%
Standard deviation	3%	5%

Coefficient of correlation is 0.80.

Find out the expected return and risk of the following portfolios consisting of these securities:

- (a) 50% of each security X and Y
- (b) 30% of X and 70% of Y
- (c) 70% of X and 30% of Y

Total No. of Questions: 6

Total No. of Printed Pages:5

Enrollment No.....



Faculty of Management Studies

End Sem (Odd) Examination Dec-2022

MS5EF02 Security Analysis & Portfolio Management

Programme: MBA

Branch/Specialisation: Management

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following is not a non-diversifiable risk? **1**
- (a) Lock-out in a company due to workers demanding a wage hike
 - (b) Slump in the industry
 - (c) A change in the tax structure for corporate in the Union Budget
 - (d) Both (b) and (c).
- ii. Which of the following is diversifiable risk? **1**
- (a) Inflation risk
 - (b) Interest rate risk
 - (c) Market risk
 - (d) Business risk
- iii. Amit Shah purchases a bond today and sells 6 months before its maturity. The yield realized is known as- **1**
- (a) Holding period return
 - (b) Current yield if interest is received
 - (c) Yield to maturity
 - (d) Both (a) and (b)
- iv. Which of the following is correct regarding cash dividends on equity stocks? **1**
- (a) Dividend payments are guaranteed
 - (b) Low dividend yields indicate out of favour stocks
 - (c) Dividends yields are based on current stock price
 - (d) None of these
- v. The two primary tools of a technical analyst are **1**
- (a) Level of the market index and volume
 - (b) Economic indicators and level of the market index
 - (c) Price and volume
 - (d) Price and technical indicators.

P.T.O.

[2]

- vi. _____ is one of the most crucial factors to be considered while investing in a company? **1**
 (a) Management (b) Managing director
 (c) Location of a company (d) Auditors
- vii. If a security's return plots above the Security Market Line, it means- **1**
 (a) Security is overpriced
 (b) Security is under-priced
 (c) Security's beta is more than one
 (d) Security's beta is less than one
- viii. Which of the following is not an assumption of CAPM? **1**
 (a) Capital markets are perfect
 (b) Lending rate is more than borrowing rate
 (c) No individual is capable of affecting market
 (d) Homogeneous expectations
- ix. An average return of portfolio divided by its standard deviation is classified as **1**
 (a) Jensen's alpha
 (b) Treynor's variance to volatility ratio
 (c) Sharpe's reward to variability ratio
 (d) Treynor's reward to volatility ratio
- x. Suppose two portfolios have the same average return, the same standard deviation of returns, but portfolio A has a higher beta than portfolio B. According to the Treynor measure, the performance of portfolio A _____. **1**
 (a) Is better than the performance of portfolio B
 (b) Is the same as the performance of portfolio B
 (c) Is poorer than the performance of portfolio B
 (d) Cannot be measured as there is no data on the alpha of the portfolio

- Q.2 i. Explain briefly the various types of investment. **2**
 ii. Differentiate between investment and speculation. **3**
 iii. Following information is available in respect of the rate of return on a security: **5**

Condition	Probability	Return on Security
Bad	0.10	8%
Average	0.50	15%
Good	0.40	20%

[3]

Find out the expected return of a security. What will be the inflation adjusted return if inflation rate is expected to be 5%.

- OR iv. The following two securities have been shortlisted by an investor: **5**

Probability	Return on X	Return on Y
0.40	10%	5%
0.40	5%	8%
0.20	-5%	2%

Calculate the risk of two securities and suggest which security should be selected and why?

- Q.3 i. How valuation of equity shares is different from valuation of bonds? **2**
 ii. A Rs.1000 par value bond having a coupon rate 10 % p.a. and 5 years to maturity is currently selling at Rs. 860. Its yield to maturity is 14 %. Calculate the Duration of the Bond. Calculate modified duration. What will be effect of 1% increase in yield on bond price? **8**
- OR iii. Mr. Ram Singh wants to invest in the shares of Wipro Ltd. having current market price of Rs. 340. However Mr. Somani, a good friend of Mr. Singh is suggesting him not to buy the shares now as he thinks that the shares are overvalued. You are given that the recently paid dividends of Wipro Ltd. are Rs 10 per share. The expected growth rate in dividends is 7 % p.a. forever. The required rate of return from a similar type of share is 10 %. Do you think Mr. Somani is correct? Should Mr. Singh buy this share? **8**

- Q.4 i. Explain any four differences between fundamental analysis and technical analysis. **4**
 ii. A new investor wants to analyse the capital structure of a company. He has the following information of XYZ company: **6**

(Rs in Millions)

	2009	2013	2017
11% Long term debt	12.27	9.46	11.19
10% Preference share capital	0.13	0.13	0.12
Equity shares (Rs.10 per share)	0.01	0.14	12.6
Capital Reserve	5.67	6.35	6.19
Retained earnings	33.93	60.31	125.20
Dividend paid	3.005	3.684	10.08

P.T.O.

[5]

- Q.6 i. Explain in brief two types of portfolio management. **2**
 ii. The following information is available about three portfolios P1, P2 and P3. The market index provided a return of 20% over the same period while returns on Treasury bills were 6%. **8**

Portfolio	Actual Return (%)	Beta
P1	13	0.60
P2	25	1.80
P3	18	1.5

Calculate Jensen's alpha for each portfolio and state whether they have outperformed or underperformed the market index.

- OR iii. The following information is available about two portfolios S and W, market index and risk-free asset. **8**

Portfolio	Actual return (%)	Beta	S.D. of Return (%)
S	21	1.1	20
W	26	1.8	35
Risk free asset	7	0	0
Market index	20	1.0	18

Rank the Portfolios S and W on the basis of Sharpe ratio and Treynor's ratio. State whether they have outperformed or underperformed the market index.

[5]

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Marking Scheme
MS5EF02 Security Analysis & Portfolio Management

Q.1	i.	Which of the following is not a non-diversifiable risk? (a) Lock-out in a company due to workers demanding a wage hike	1
	ii.	Which of the following is diversifiable risk? (d) Business risk	1
	iii.	Amit Shah purchases a bond today and sells 6 months before its maturity. The yield realized is known as- (a) Holding period return	1
	iv.	Which of the following is correct regarding cash dividends on equity stocks? (b) Low dividend yields indicate out of favour stocks	1
	v.	The two primary tools of a technical analyst are (c) Price and volume	1
	vi.	_____ is one of the most crucial factors to be considered while investing in a company? (a) Management	1
	vii.	If a security's return plots above the Security Market Line, it means- (b) Security is under-priced	1
	viii.	Which of the following is not an assumption of CAPM? (b) Lending rate is more than borrowing rate	1
	ix.	An average return of portfolio divided by its standard deviation is classified as (c) Sharpe's reward to variability ratio	1
	x.	Suppose two portfolios have the same average return, the same standard deviation of returns, but portfolio A has a higher beta than portfolio B. According to the Treynor measure, the performance of portfolio A _____. (c) Is poorer than the performance of portfolio B	1
Q.2	i.	Various types of investment. 1 mark for each	2
	ii.	Differentiate between investment and speculation. 1 mark for each	3
	iii.	Find out the expected return of a security. What will be the inflation adjusted return if inflation rate is expected to be 5%. Stepwise marking	5
OR	iv.	Calculate the risk of two securities and suggest which security should be selected and why? Stepwise marking	5

Q.3	i.	How valuation of equity shares is different from valuation of bonds 1 mark for each	2
	ii.	Calculate the Duration of the Bond. Calculate modified duration. What will be effect of 1% increase in yield on bond price Stepwise marking	8
OR	iii.	Do you think Mr. Somani is correct? Should Mr. Singh buy this share? Stepwise marking	8
Q.4	i.	Any four differences between fundamental analysis and technical analysis. 1 mark for each	4
	ii.	(a) Is there any ground for such rumour? 2 marks (b) Is the capital structure sound? 2 marks (c) Is it proper to purchase the shares? 2 marks Analyse the data and advise him.	6
OR	iii.	Industry analysis 2 marks Classification of industries and Industry Life Cycle. 4 marks	6
Q.5	i.	"All efficient portfolios are feasible but all feasible portfolios are not efficient". Do you agree? Explain in the context of Markowitz Model. As per the explanation	3
	ii.	Do you think that securities A and B are efficiently priced in the market? Do they lie on SML? Evaluate on basis of Sharpe Index Model. Stepwise marking	7
OR	iii.	Find out the expected return and risk of the following portfolios consisting of these securities: (a) 50% of each security X and Y (b) 30% of X and 70% of Y (c) 70% of X and 30% of Y Stepwise marking	7
Q.6	i.	Two types of portfolio management 1 mark for each	2
	ii.	Calculate Jenson's alpha for each portfolio and state whether they have outperformed or underperformed the market index. Stepwise marking	8
OR	iii.	Rank the Portfolios S and W on the basis of Sharpe ratio and Treynor's ratio. State whether they have outperformed or underperformed the market index. Stepwise marking	8

Q.2
(iii)

Conditions	Probability P_i	Return K_i	$P_i K_i$
Bad	0.10	8%	0.8%
Average	0.50	15%	7.5%
Good	0.40	20%	8.0%

Expected Ret 16.3%

Inflation Adjusted Return

$$= \frac{1 + \text{Stock return}}{1 + \text{inflation}} - 1$$

$$= \left(\frac{1 + 0.163}{1 + 0.05} \right) - 1$$

$$= 1.1076 - 1$$

$$= 0.1076$$

$$= 10.76\%$$

Q.2
(iv)X Security

Probability P_i	Return R_i	$P_i R_i$	$R_i - E(R)$	$[R_i - E(R)]^2$	$P_i \times [R_i - E(R)]^2$
0.4	10%	4	5	25	10
0.4	5%	2	0	0	0
0.2	-5%	-1	-10	100	20
					$\Sigma = 30$

$$\text{Variance} = 30$$

$$\text{Standard Deviation} = \sqrt{30} = 5.5$$

Y Security

Probability P_i	Return R_i	$P_i R_i$	$R_i - E(R)$	$[R_i - E(R)]^2$	$P_i \times [R_i - E(R)]^2$
0.4	5	2	(0.6)	0.36	0.144
0.4	8	3.2	2.4	5.76	2.304
0.2	2	0.4	(3.6)	12.96	25.92
					$\underline{28.368}$

$$\text{Variance} = 28.368$$

$$\text{Standard Deviation} = 5.326$$

(iv)

Prob.	x	Px^2	Ex	$x - Ex$
0.4	10	4	5	5
0.4	5	2	5	0
0.2	(5)	(1)	5	(10)
		$\Sigma R = 5$		

Prob	y	Pxy	Ex	$y - Ex$
0.4	5	2	5.6	(0.6)
0.4	8	3.2	5.6	2.4
0.2	2	0.4	5.6	(3.6)
		$\Sigma 5.6$		

Q. 3(ii) ~~Maximum Difference~~

$$Y_{TM} = C + \frac{FV - PV}{N}$$

$$\frac{FV + PV}{2}$$

$$14\% = 100 + \frac{(1000 - 860)}{\frac{1000 + 860}{2}}$$

$$N = \frac{140}{30.2} = 4.63 \quad (4.1)$$

Modified duration = $\frac{\text{Duration}}{\left(1 + \frac{YTM}{N}\right)}$

(3.59)

Q. 3 (iii)

$$V = \frac{D}{K - g}$$

$$340 = \frac{10}{K - 0.07}$$

$$K - 0.07 = \frac{10}{340} = 0.0294$$

$$= 2.94\%$$

$$\begin{array}{r}
 (x - \bar{x})^2 \\
 25 \\
 0 \\
 100 \\
 \hline
 125
 \end{array}$$

$$\begin{aligned}
 \cancel{AV} &= \cancel{\sum (x - \bar{x})^2} \\
 &= 125 \\
 \cancel{\sigma} &= \cancel{\sqrt{125}} = 11.18
 \end{aligned}$$

$$\begin{array}{r}
 (y - \bar{y})^2 \\
 0.36 \\
 5.76 \\
 12.96 \\
 \hline
 19.8
 \end{array}$$

$$\begin{aligned}
 V &= (\sum (y - \bar{y})^2) \\
 &= 19.8 \\
 \sigma &= \sqrt{19.8} = 4.45
 \end{aligned}$$

$$14\% = \frac{100}{1} + \frac{140}{N}$$

$$\hline
 930$$

$$14 \times 930 = 100 + \frac{140}{N}$$

$$130.2 - 100 = \frac{140}{N}$$

$$30.2 = \frac{140}{N}$$

Q610

Given,

Market index = 20%.

Return

Risk free rate = 6%.

QM

Jensen's Alpha

$$\text{Portfolio} = R_p - [R_f + \beta (R_M - R_f)]$$

$$\text{QM } P_1 = 13 - [6 + 0.6 (20 - 6)] = 11.4$$

$$\text{QM } P_2 = 25 - [6 + 1.8 (20 - 6)] = 16.2$$

$$\text{QM } P_3 = 18 - [6 + 1.5 (20 - 6)] = 9$$

Im - Statement

(iii)

$$\underline{\text{Sharpe Ratio}} = \frac{R_p - R_f}{\beta_D}$$

$$\text{Fund 'S'} = \frac{21 - 7}{20} = 0.7$$

$$\text{Portfolio 'W'} = \frac{26 - 7}{35} = 0.55$$

$$\text{Market Index} = \frac{20 - 7}{18} = 1.722$$

$$\text{Treynor's} = \frac{R_p - R_f}{\beta_p}$$

$$S = \frac{21 - 7}{1.1} = 12.73$$

$$W = \frac{26 - 7}{1.8} = 10.55$$