

Paper 14 – Strategic Financial Management



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Full Marks: 100

Time allowed: 3 hours

This paper contains two sections **A** and **B**. **Section A** is compulsory and contains question No.1 for 20 marks. **Section B** contains question Nos. 2 to 8, each carrying 16 marks.

Answer any five questions from **Section B**.

Section – A [20 Marks]

1. Choose the correct option among four alternative answer. (1 mark for correct choice, 1 mark for justification.) [10×2=20]
- (a) A mutual fund has an NAV of ₹12.50 per unit at the beginning of the year. At the end of the year the NAV increases to ₹13.40. In the meanwhile, the Fund distributes ₹0.85 as dividend and ₹0.70 as capital gains. What will be the fund's rate of return during the year?
- A. 18.6%
B. 19.6%
C. 20.6%
D. 21.6%
- (b) Which of the following is not a source of systematic risk?
- A. Market Risk
B. Interest rate risk
C. Purchasing power risk
D. Financial risk
- (c) A project had an equity beta of 1.40 and was going to be financed by a combination of 30% debt and 70% equity. Assuming debt-beta to be zero, the project beta is:
- A. 0.68
B. 0.78
C. 0.88
D. 0.98
- (d) CNX Nifty is currently quoting at 9200. Each lot is 55. An investor purchases a March Futures contract at 9300. He has been asked to pay 7% margin. What amount of initial margin is required to be deposited by him? To what level Nifty futures should be increased to get a gain of 6%?
- A. ₹35805, 9339.05
B. ₹35000, 9939.05
C. ₹36805, 9539
D. ₹40000, 9400
- (e) The stock of ABC Ltd. sells for ₹240. The present value of exercise price and the value of call option are ₹217.40 and ₹39.60 respectively. What is the value of put option?
- A. ₹16.50
B. ₹22.00
C. ₹17.00

D. ₹18.00

- (f) An investor holds two equity shares A and B in equal proportion with the following risk and return:
 $E(R_A) = 26\%$ $\sigma_A = 20\%$ $E(R_B) = 22\%$ $\sigma_B = 24\%$ The returns of these securities have a positive correlation of 0.7. The portfolio risk will be _____.
- A. 20.30%
B. 21.67%
C. 19.49%
D. 17.15%
- (g) From the following quotes of a bank, determine the rate at which Yen can be purchased with Rupees.
₹/£ Sterling: 75.31 – 33; £ Sterling/Dollar (\$): 1.563 – 65;
Dollar (\$)/Yen (¥): 1.048/52 [per 100 Yen]
- A. ₹124.02
B. ₹142.02
C. ₹412.02
D. ₹214.02
- (h) A company has obtained quotes from two different manufacturers for an equipment. The details are as follows:
Make X: Cost ₹4.5 million with estimated life of 10 years
Make Y: Cost ₹6.0 million with estimated life of 15 years
Ignore maintenance and operation cost. Which one would be cheaper? Company's cost of capital is 10%. $PVIFA(10\%, 10) = 6.1446$; $PVIFA(10\%, 15) = 7.6061$
- A. Make X will be cheaper
B. Make Y will be cheaper
C. Cost will be the same
D. None of the above
- (i) Consider the following for Strong Ltd.
Return on Govt. Securities = 12%
Share beta = 1.5
Market return = 16%
Based on CAPM, cost of equity will be _____.
- A. 28%
B. 22%
C. 18%
D. 12%
- (j) The 6-month forward rate for US dollar against rupee is quoted at ₹49.50 as opposed to a spot price of ₹48.85. The forward premium on US dollar is
- A. 1.50%
B. 3.08%
C. 3.05%
D. 3.03%

MTP_Final_Syl2016_June,2019_Paper 14_Set 1

Section – B [80 Marks]
Answer any five questions

- 2. (a)** Eureka Enterprises is interested in assessing the cash flows associated with the replacement of the old machine by a new machine. The old machine has a book value of ₹ 2,70,000 which can be sold for the same amount. It has a remaining life of 5 years, after which the salvage value is expected to be 'nil'. It is being depreciated annually @ 10% using the written down value method. The new machine costs ₹ 12 lakhs and has a resale value of ₹ 7.5 lakhs at the end of 5 years. The new machine is expected to save manufacturing costs of ₹ 3 lakh p.a. Investment in working capital remains same. The tax rate applicable to the firm is 50%.

You, as a Project Analyst, are required to work out the incremental cash flows associated with the replacement of the old machine and to prepare a statement to be presented to the management for consideration.

- (b)** Nomura Projects Ltd. is considering accepting one of two mutually exclusive Projects, Project P & Project Q. The cash flow and probabilities are estimated as under:

Project P		Project Q	
Probability	Cash flow Rs.	Probability	Cash flow Rs.
0.10	6,000	0.10	4,000
0.20	7,000	0.25	6,000
0.40	8,000	0.30	8,000
0.20	9,000	0.25	10,000
0.10	10,000	0.10	12,000

Advise Nomura Projects Ltd. (Use Coefficient of Variation).

[8+8=16]

- 3. (a)** Find out the NAV per unit from the following information:

Particulars	
Size of the scheme	₹ 200 lakh
Face value of the shares	₹ 100
No. of outstanding shares	200000
Market value of the fund's investment	₹ 360 lakh
Receivables	₹ 4,00,000
Liabilities	₹ 2,00,000

- (b)** Mr. P has invested in three mutual fund schemes as per the details below:

	MF 1	MF 2	MF 3
Date of investment	01.12.2017	01.01.2018	01.03.2018
Amount of investment (₹)	1,00,000	2,00,000	1,00,000
NAV at entry date (₹)	21.00	20	20
Dividend received up to 31.03.18 (₹)	1,940	3,040	Nil
NAV as at 31.03.2018 (₹)	20.80	20.20	19.60

What is the effective yield on per annum basis in respect of each of the three schemes up to 31.03.2018?

[6+10=16]

4. (a) On the basis of the following information, compute covariance between the returns on a pair of securities according to the Sharpe single-index model:

(i) Beta for stock A = 1.183

(ii) Beta for stock B = 1.021

(iii) Beta for stock C = 2.322

The variance of the market portfolio = 20.91

(b) Annual return data are presented below for Stock X and the S&P Nifty Index for 12 years. Calculate the following:

- i. The average return on stock X
- ii. The average return on the market
- iii. The variance and standard deviation of the stock X's return
- iv. The variance and standard deviation of the market portfolio's return
- v. The covariance of the returns on stock X and the market portfolio
- vi. The correlation coefficient of the returns on stock X and the market portfolio
- vii. Beta for Stock X
- viii. Alpha for Stock X

YEAR	STOCK-X (%)	S&P Nifty (%)
2006	12.05	12.28
2007	15.27	5.99
2008	- 4.12	2.41
2009	1.57	4.48
2010	3.16	4.41
2011	- 2.79	4.43
2012	-8.97	-6.77
2013	- 1.18	-2.11
2014	-1.07	3.46
2015	12.75	6.16
2016	7.48	2.47
2017	-0.94	- 1.15

[6+10=16]

5. (a) Calculate the theoretical price of 3-month ACC futures, if ACC (FV `10) quotes `520 on NSE, and the 3-month futures price quotes at `532, and the borrowing rate is given as 15% and the expected dividend is 25% payable before expiry. Is there any arbitrage opportunities? If the market price of futures is `542, do arbitrage opportunities still exist?

(b) The following information is available:

Strike price `200;

Current stock price `185

Risk free rate of interest 5% p.a.

You are required to:

- (i) Calculate the theoretical minimum price of a European put option after 6 months.
- (ii) If European put option price is `5, then how can an arbitrageur make profit.

[8+8=16]

6. (a) Given the following:

\$/£	1.3672/1.3710
S.Fr./DEM	1.0032/1.0080

MTP_Final_Syl2016_June,2019_Paper 14_Set 1

\$/S.Fr.	0.8792 / 0.8805
And if DEM / £ in the market are 1.5560 / 1.5576.	

Find out if any arbitrage opportunity exists. If so, show how \$10,000 available with you can be used to generate risk - less profit.

(b) Given the following information:

Spot Rate	`46.88/\$
3 Month Forward Rate	`47.28/\$
3 Month Interest Rate in US	7% p.a.
3 Month Interest Rate in India	9% p.a.

Assuming no transaction cost or taxes exist, what operation would be carried out to take the possible arbitrage gain?

Assume `10 million or \$ 10 million borrowings (as the case may be) to explain your answer.

[8+8=16]

7. (a) LB Ltd. Has decided to acquire machine M costing `63,000. It will have an operational life of 4 years, with nil scrap value.

Tax is payable at 30% on operating cash flows in the same year. Capital allowances are available at 25% a year under reducing balance method.

The company has the opportunity either to purchase the machine or to lease it under a finance lease arrangement, at an annual rent of `20,000 for four years, payable at the end of the year.

The company can borrow to finance the acquisition at 10%.

Should the company lease or buy the machine?

(b) The expected return of Stock M has the following probability distribution:

Demand of company's product	Probability (P)	Rate of Return (R) (%)
Weak	0.2	(12)
Average	0.5	25
Strong	0.3	30

Calculate the stock's expected return, standard deviation and coefficient of variation.

[10+6=16]

8. Write short note on (any four)

[4×4=16]

- (a)** Advantages of Depository System
- (b)** Benefits of Commodity Trading
- (c)** Objectives of Risk Management
- (d)** Money Market Mutual Funds
- (e)** Foreign Currency Convertible Bonds