

PAPER 14 - STRATEGIC FINANCIAL MANAGEMENT

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Full Marks: 100

Time allowed: 3 hours

Answer Question No. 1 which is compulsory and carries 20 marks
and any five from Questions No. 2 to 8.

Section – A

1. Choose the correct option among four alternative answer. (1 mark for correct choice, 1 mark for justification.) [10 × 2 = 10]

- (i) You are a forex dealer in India. Rates of rupee and Euro in the international market are US \$ 0.01962905 and US \$ 1.335603 respectively. What will be your direct quote of € (euro) to your customer?
- a. ` 69.5900
 - b. ` 68.0420
 - c. ` 65.1010
 - d. ` 70.905
- (ii) Marison Ltd. is planning to invest in USA. The rates of inflation are 8 % in India and 3 % in USA. If spot rate is currently `46.50/\$, what spot rate can the company expect after 5 years?
- a. `57.93/\$
 - b. `58.94/\$
 - c. `59.00/\$
 - d. `59.13/\$
- (iii) The Beta co-efficient of equity stock of ECOBOARD LTD. Is 1.6. The risk free rate of return is 12% and the required rate of return is 18% on the market portfolio. If dividend expected during coming year is `2.50 and the growth rate of dividend and earnings is 8%, at what price the stock of ECOBOARD Ltd. Can be sold (based on CAPM)?
- a. `18.38
 - b. `15.60
 - c. `12.50
 - d. None of the above

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- (iv) The spot USD/Yen=190 Yen and one year forward rate of USD/Yen =210Yen
The prime rate in US is 15%. What should be Japanese prime rate be?
- 20.11%
 - 25.22%
 - 27.11%
 - 29.55%
- (v) Which of the following investment avenues has the least risk associated with it?
- Corporate fixed deposits
 - Deposits in commercial banks
 - Public Provident Fund
 - Non convertible zero coupon bond.
- (vi) Consider the following data:
Rate of inflation=5.1%
Beta=0.85
Real rate of return=4.2%
Market return=12.6%
The risk premium for the above security will be:
- 2.5%
 - 2.65%
 - 2.805%
 - 2.95%
- (vii) Covariance between a stock and a market index and variance of market index are 33.56 and 19.15 respectively. The Beta of stock is:
- 1.55
 - 1.75
 - 1.85
 - 1.95
- (viii) The face value of a 364 day T-Bill is `100. If purchase price is `86, then the yield on such a bill is
- 12.5%
 - 13.36%
 - 16.32%
 - 16.56%
- (ix) A company has obtained quotes from two different manufacturers for an equipment. The details are as follows:
- | Product | Cost (Million) | Estimated life (years) |
|---------|----------------|------------------------|
| Make X | 4.50 | 10 |
| Make Y | 6.00 | 15 |

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Ignoring operation and maintenance cost, which one would be cheaper? The company's cost of capital is 10%.

[Given: PVIFA (10%, 10 years) = 6.1446 and PVIFA (10%, 15 years) = 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
- (x) The stock of ABC Ltd sells for ` 240. The present value of exercise price and 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

Section - B

Answer any five questions from question nos. 2 to 8. Each question carries 16 marks.

2. (a) X Ltd. an existing profit making company, is planning to introduce a new product with a projected life of 8 years' initial equipment cost will be ` 120 lakhs and additional equipment costing ` 10 lakhs will be needed at the beginning of third year. At the end of the 8 years, the original equipment will have resale value equivalent to the cost of removal, but the additional equipment would be sold for ` 1 lakhs. Working Capital of `15 lakhs will be needed. The 100% capacity of the plant is of 4,00,000 units per annum, but the production and sales volume expected are as under:

Year	Capacity in percentage
1	20
2	30
3-5	75
6-8	50

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A sale price at of ` 100 per unit with a profit volume ratio of 60% is likely to be obtained. Fixed Operating Cash Cost are likely to be `16 lakhs per annum. In addition to this the advertisement expenditure will have to be incurred as under:

Year	1	2	3-5	6-8
Expenditure in ` in Lakhs each year	30	15	10	4

The company is subject to 40% tax. Assuming straight-line method of depreciation is permitted under tax laws and taking 15% as appropriate after tax Cost of Capital, should the project be accepted? [10]

(b) Determine the risk adjusted net present value of the following projects:

	A	B	C
Net cash outlays (₹)	1,00,000	1,20,000	2,10,000
Project life	5 years	5 years	5 years
Annual cash inflow (₹)	30,000	42,000	70,000
Coefficient of variation	0.4	0.8	1.2

The company selects the risk-adjusted rate of discount on the basis of the coefficient of variation:

Coefficient of variation	Risk adjusted rate of discount	Present value factor 1 to 5 years at risk adjusted rate of discount
0.0	10%	3.791
0.4	12%	3.605
0.8	14%	3.433
1.2	16%	3.274
1.6	18%	3.127
2.0	22%	2.864
More than 2.0	25%	2.689

[6]

3. (a) A mutual fund made an issue of 800000 units of ₹10 each on 01.04.2022. No entry load was charged. It made the following investments after meeting its issue expenses.

Particulars	₹
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40,000 Equity Shares of ₹100 @ ₹160	64,00,000
At par:	
8% Government Securities	6,40,000
9% Debentures (unlisted)	4,00,000
10% Debentures (listed)	4,00,000
	78,40,000

During the year, dividend of ₹9,60,000 was received on equity shares. Interest on all types of debt securities was received as and when due. At the end of the year on 31.03.2023, equity shares and 10% debentures were quoted at 175% and 90% of the respective par value. Other investments were at par. The operating expenses during the year amounted to ₹4,00,000.

- (i) Find out the Net Assets Value (NAV) per unit at the end of the year.
- (ii) Find out the NAV if the Mutual Fund had distributed a dividend of ₹0.90 per unit during the year to the unit holders. **[8]**

(b) Following information is available regarding four Mutual Funds:

Mutual Fund	Return (%)	Standard Deviation (σ)	Beta (β)
A	12	15	0.80
B	16	22	0.76
C	21	37	1.15
D	13	24	1.32

Risk free rate of return is 10% and face value is ₹100 each.

Evaluate the performance of these Mutual Funds using Sharpe Ratio and Treynor's Ratio. Comment on the evaluation after ranking the Funds. **[8]**

4. (a) An investor is interested to construct a portfolio of securities ALFA and GAMA. He has collected the following information about the proposed investment:

	ALFA	GAMA
Expected return	20%	25%
σ	12%	16%

Co-efficient of Correlation (r) between ALFA and GAMA is 0.16.

He wants to constitute only 5 portfolios of ALFA and GAMA as follows:

- (1) All funds invested in ALFA.
- (2) 50% of funds in ALFA and 50% in GAMA.
- (3) 75% of funds in ALFA and 25% in GAMA.
- (4) 25% of funds in ALFA and 75% in GAMA.
- (5) All funds invested in GAMA.

You are required to calculate:

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- (A) Expected return under different portfolios.
- (B) Risk factor associated with these portfolios.
- (C) Which portfolio is best from the view-point of risk?
- (D) Which portfolio is best from the view-point of return? [8]

(b) A portfolio manager has the following four stocks in his portfolio:

Security	No. of shares	Market Price per share (₹)	β = Beta
VSL	10,000	50	0.9
CSL	5,000	20	1.0
SML	8,000	25	1.5
APL	2,000	200	1.2

Compute the following:

- (i) Portfolio Beta (β).
- (ii) If the Portfolio Manager seeks to reduce the Beta to 0.8, how much Risk-Free investment should he bring in?
- (iii) If the Portfolio Manager seeks to increase the Beta to 1.2, how much Risk-Free investment should he bring in? [8]

5. (a) The following table shows interest rates and exchange rates for the US Dollar and French Franc. The spot exchange rate is 7.05 Francs per Dollar. Complete the missing entries:

	3 months	6 months	1 year
Euro-dollar interest rate (Annual)	11.5%	12.25%	?
Euro-franc interest rate (Annual)	19.5%	?	20%
Forward Francs per dollar	?	?	7.52
Forward discount on Franc (% per year)	?	(6.3%)	?

[10]

(b) Suppose a dealer Rupam quotes 'All-in-cost' for a generic swap at 8% against six month LIBOR flat. If the notional principal amount of swap is ₹ 5,00,000,

- (i) Calculate Semi-Annual fixed payment.
- (ii) Find the first floating rate payment for (i) above if the six month period from the effective date of swap to the settlement date comprises 183 days and that the corresponding LIBOR was 6% on the effective date of swap.
- (iii) In (ii) above, if settlement is on 'Net' basis, how much the fixed rate payer would pay to the floating rate payer?

Generic swap is based on 30/360 days basis.

[6]

6. (a) The following two-way quotes appear in the Foreign Exchange Market:

	Spot	2 months forward
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` / US \$	` 46.00 / 46.25	` 47.00 / 47.50
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Required:

- (i) How many US Dollars should a firm sell to get ` 25 lakhs after 2 months?
- (ii) How many Rupees is the firm required to pay so as to obtain US \$ 2,00,000 in the spot market?
- (iii) Assume that the firm has US \$ 69,000 in current account earning interest. ROI on Rupee investment is 10% per annum. Should the firm en-cash the US \$ now or 2 months later? [6]

- (b)** Bharat's subsidiary in India, Emami, procures most of its soaps from a Japanese company. Because of the shortage of working capital in India, payment terms for the Indian importers are typically 180 days or more. Emami wishes to hedge an 8.5 million Japanese Yen payable. Although options are not available on the Indian Rupee (`), forward rates are available against the Yen. Additionally, a common practice in India is, for companies' like Emami, to work with a currency agent who will, in this case, lock in the current spot exchange for a 4.85% fee. Using the following data, recommend a hedging strategy.

Spot rate, USD/JPY	yen 120.60/\$	
Spot rate, USD/INR	`47.75/\$	
180-day forward rate, JPY/INR	`0.4166/yen	
Expected spot exchange rate in 180 days	`0.3846/yen	
180-day yen investment rate	1.5%	
180-day rupee investment rate	8.0%	
Cost of capital	12.0%	[10]

- 7. (a)** Nava Ratna Ltd. has just installed MACHINE R at a cost of ` 2,00,000. This machine has 5 years life with no residual value. The annual volume of production is estimated at 1,50,000 units, which can be sold at ` 6 per unit. Annual operating costs are estimated at ` 2,00,000 (excluding depreciation) at this output level. Fixed costs are estimated at ` 3 per unit for the same level of production.

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The company has just come across another model called MACHINE S, capable of giving the same output at an annual operating costs of `1,80,000 (excluding depreciation). There will be no change in fixed costs. Capital cost of this machine is `2,50,000 and the estimated life is 5 years with no residual value.

The company has an offer for sale of MACHINE R at `1,00,000. But the cost of dismantling and removal will amount to `30,000. As the company has not yet commenced operation, it wants to sell MACHINE R and purchase MACHINE S.

Nava Ratna Ltd. will be a zero-tax company for 7 years in view of several incentives and allowances available. The cost of capital may be assumed as 14%.

Required:

- (i) Advise the company whether it should opt for replacement.
- (ii) What would be your advice, if MACHINE R has not been installed but the company is in the process of selecting one or the other machine?

[Given: PVIF for 1-5 years = 0.877, 0.769, 0.675, 0.592, 0.519] [10]

- (b) A stock costing `120 pays no dividends. The possible prices that the Stock might sell for at the end of the year with the respective probabilities are given below. Compute the Expected Return and its standard Deviation.

Price	115	120	125	130	135	140
Probability	0.1	0.1	0.2	0.3	0.2	0.1

[6]

8. Answer any 4 questions out of 5 questions.

[4x4=16]

- (a) The advantages of OCDs (Optionally Convertible Debentures) to investor
- (b) Characteristics of Commodity Exchange in India
- (c) Types of Credit risk.
- (d) Discuss the regulatory role of RBI
- (e) Put-Call Parity Theory.