PAPER-14: ADVANCED FINANCIAL MANAGEMENT

The following table lists the learning objectives and the verbs that appear in the syllabus learning aims and examination questions:

	Learning objectives	Verbs used	Definition
LEVEL C	KNOWLEDGE What you are expected to know	List	Make a list of
		State	Express, fully or clearly, the details/facts
		Define	Give the exact meaning of
	COMPREHENSION What you are expected to understand	Describe	Communicate the key features of
		Distinguish	Highlight the differences between
		Explain	Make clear or intelligible/ state the meaning or purpose of
		Identity	Recognize, establish or select after consideration
		Illustrate	Use an example to describe or explain something
	APPLICATION How you are expected to apply your knowledge	Apply	Put to practical use
		Calculate	Ascertain or reckon mathematically
		Demonstrate	Prove with certainty or exhibit by practical means
		Prepare	Make or get ready for use
		Reconcile	Make or prove consistent/ compatible
		Solve	Find an answer to
		Tabulate	Arrange in a table
	ANALYSIS How you are expected to analyse the detail of what you have learned	Analyse	Examine in detail the structure of
		Categorise	Place into a defined class or division
		Compare and contrast	Show the similarities and/or differences between
		Construct	Build up or compile
		Prioritise	Place in order of priority or sequence for action
		Produce	Create or bring into existence
	SYNTHESIS How you are expected to utilize the information gathered to reach an optimum conclusion by a process of reasoning	Discuss	Examine in detail by argument
		Interpret	Translate into intelligible or familiar terms
		Decide	To solve or conclude
	EVALUATION How you are expected to use your learning to evaluate, make decisions or recommendations	Advise	Counsel, inform or notify
		Evaluate	Appraise or asses the value of
		Recommend	Propose a course of action

PAPER-14: Advanced Financial Management

Time Allowed: 3 hours **Full Marks:** 100

This paper contains 5 questions. All questions are compulsory, subject to instruction provided against each question. All workings must form part of your answer.

Assumptions, if any, must be clearly indicated.

Question No. 1. (Answer **all** questions. Each question carries **2 marks**)

1. (a) Sec D: Describe the two possible situations of capital rationing. **[2]**

(b) RBI issued at 91 – day T – Bill at an yield of 6%. What is the Issue Price per ₹100? **[2]**

(c) You have ₹10,000 to investment in a stock portfolio. Your choices are Stock X with an expected return of 18% and Stock Y with an expected return of 11%. If your goal is to create a portfolio with an expected return of 16.5%, how much money will you invest in Stock X and in Stock Y? **[2]**

(d) You sold Hong Kong Dollar 1,00,00,000 value spot to your customer at ₹5.70 and covered yourself in London market on the same day, when the exchange rates were – US $1 = HK $ 7.5880 – 7.5920
Local Inter- Bank market rates for US $ were – Spot US $ = ₹42.70 – 42.85
Calculate Cover Rate. **[2]**

(e) State the trade credit. **[2]**

(f) The October pepper future traded at 17.50, the October 18.00 call at 0.45 and the October 18.00 put at 0.58. Both are options on the October future. Find out whether any arbitrage opportunity exists. **[2]**

(g) Calculate the NAV of Great Fund from the following data:
Size of the fund ₹200 Crores, Face Value ₹10/ - per unit, Market Value of Investments ₹280 Crores Receivables ₹2 Crores, Accrued Income ₹2 Crores, Liabilities ₹1 Crores, Accrued Expenses ₹1 crore. **[2]**

(h) Explain Basis Risk. **[2]**

(i) State the Accounting or Average rate of Return Method (ARR). **[2]**

(j) Calculate expected return of a stock which returns 14% during worse times, 18% during times and 26% during good times, if the respective chances of worse, bad and good times are 20%, 35% and 45% respectively. **[2]**

Question No. 2. (Answer **any three** questions. Each question carries **8 marks**)

2. (a) Viswamitra Co. plans to issue CP of ₹1,00,000 at a price of ₹98,000. Compute Effective Interest Rate p.a. and Cost of Fund, if - (a) Maturity Period: 4 Months, (b) Expenses for Issue of CP are - (i) Brokerage - 0.10%, (ii) Rating Charges - 0.60% and (iii) Stamp Duty-0.15%. **[2+6]**

2. (b) (i) You purchased 1000 units of the New Fund when the NAV was ₹20 per unit at the beginning of the year. You paid a front end load of 4%. The fund distributes a dividend of 12% during the year. The fund's expense ratio is 1.2%. What is your rate of return on the fund if you sell your shares at the end of the year? **[3]**

(b) (ii) List the features of 14 days Treasury Bills. **[5]**

2. (c) (i) A mutual fund company offers a "safe" money market fund which provides a annualized return of 4.50%. The same company also offers an equity fund with an aggressive growth objective which historically has exhibited an expected return of 20%. and a standard deviation of 25%. What allocation should be placed in the money market fund if an investor desires an expected return of 15%? **[3]**

(c) (ii) State Residuary Non- Banking Company (RNBC). Describe ceiling on raising of deposits by RNBC's. **[2+3]**

2. (d) The following information is given to us:

Fund	σ	Average Return	Sharpe Ratio	Treynor Ratio
Portfolio ABC	18%	10%	0.222	6.67
Nifty Index	13%	12%	0.462	6.00
T-Bills	--	6%		

Compare and contrast the performance of portfolio ABC based on the above data and explain the conflict in result. **[8]**

Question No. 3. (Answer **any two** questions. Each question carries **10 marks**)

3. (a) Rivera furnishes the following information about four stocks in the derivative markets -

I. Shares of Arpit Limited is sold in the spot market for ₹827. A 3-Month Call on the same is being traded at ₹100 with an exercise price of ₹ 930.

II. Kanakadurga Refineries Ltd's shares are traded at ₹ 475. 3-Month call on KRL's shares are available for ₹ 50 with an exercise price of ₹ 490.

III. A 3-Month call on RPL is sold for ₹15 for an exercise price of ₹ 120. The spot price is ₹ 100.

If Risk Free Interest Rate is 8%, ascertain the value of Put in all the above cases.

What will be Rivera's course of action if the actual price of Put is as follows?

- Arpit Limited: ₹180 or ₹ 190
- Kanakadurga Refineries: ₹52 or ₹60
- RPL: ₹ 30 or ₹ 35 **[4+6]**

3. (b) (i) Your Forex Dealer had entered into a Cross Currency deal and had sold US $10,00,000 against Euro at US $ 1 = Euro 1.4400 for spot delivery. However, later during the day, the market became volatile and the dealer in compliance with his management's guidelines had to square up the position when the quotations were -

Spot US $1 1 Month Margin 2 Months Margin	INR 31.4300/4500 25/20 45/35
Spot US $ 1 1 Month Forward 2 Months Forward	Euro 1.4400/4450 1.4425/4490 1.4460/4530

What will be the Gain or Loss in the transaction? **[6]**

(b) (ii) Highlight the role of Financial Intermediaries in Swap Arrangements. **[4]**

3 (c) A German firm buys a call on $ 10,00,000 with a strike of DM 1.60 / $. The interest opportunity cost is 6% p.a. and the maturity is 180 days.

I. What is the break even maturity spot rate beyond which the firm makes a net gain?

II. Suppose the 6 month Forward Rate at the time option was bought was DM 1.62 / $. What is the range of maturity spot rate for which the option would prove to better than the forward cover? For what range of values would the forward cover be better? **[4+6]**

Question No. 4. (Answer **any two** questions. Each question carries **8 marks**)

4. (a)

I. If beta (β) is 1.50; R_f (risk-free returns) is 6.00%; and R_m (market return) is 12.00%, what should be the return on the share (R_j) with the beta as given above?

II. If the alpha value is + 1.5, 1, 0 (zero), or -2.40, what would be the corresponding actual returns from the stock in (i)?

III. What investment action would you suggest for each of the four different situations in (II). **[2+4+2]**

4. (b) (i) Using the CAPM, show that the ratio of the risk premiums on two assets is equal to the ratio of their betas. **[3]**

(b) (ii) Mr. X owns a portfolio with the following characteristics:

	Security A	Security B	Risk free security
Factor 1 sensitivity	0.50	1.50	0
Factor 2 sensitivity	0.80	1.40	0
Expected Return	15%	20%	10%

It is assumed that security returns are generated by a two factor model.

I. In what combination one should invest in A and B, that the overall portfolio is insensitive to changes in factor 2?

II. In what combination one should invest in A, B and risk free asset so that the overall portfolio has a sensitivity of 1 to factor 1, and be insensitive to changes in factor 2? **[2+3]**

4. (c) (i) P Ltd. has Standard Deviation of 20%. Q Ltd. has Standard Deviation of 28%. The correlation coefficient between the return of P Ltd. and Q Ltd. is 0.50. Suggest:

I. Is investing in P Ltd better than investing in Q Ltd. purely in terms of total risk?

II. If you invest 30% in P Ltd. and 70% in Q Ltd. what is portfolio risk?

III. What happens to the portfolio risk if correlation is perfectly positive?

IV. What happens to the portfolio risk if correlation is perfectly negative? **[1+2+1+1]**

(c) (ii) Stock A has a beta of 1.2. The expected return on the market is 12% and the risk-free rate is 3%.

I. What is the expected return on stock A?

II. How much of that return is compensation for risk? **[1+2]**

Question No. 5. (Answer **any two** questions. Each question carries **10 marks**)

5. (a) The MN Company Limited has decided to increase its productive capacity to meet an anticipated Increase in demand for its products. The extent of this increase in capacity is still to be determined and a management meeting has called to decide which of the following two mutually exclusive proposals - I and II should be undertaken.

On the basis of the information given below you are required to:

(i) evaluate the profitability (ignoring taxation) of each of the proposals and

(ii) on the assumption of a cost of capital of 8% advise the management of the matters to be taken into consideration when deciding between Proposal I and Proposal II.

Capital Expenditure	**I (₹)**	**II (₹)**
Building	50,000	1,00,000
Plant	2,00,000	3,00,000

Installation	10,000	15,000
Working Capital	50,000	65,000
Annual pre - depreciation profits (Note a)	70,000	95,000
Other relevant income/expenditure:		
Sales promotion (Note b)	--------	15,000
Plant Scrap Value	10,000	15,000
Building Disposable value (Note c)	30,000	60,000

Note:

- The investment life is 10 years.
- An exceptional amount of expenditure on sales promotion of ₹15, 000 will require to be spent in year 2 on proposal II. This has not been taken into account in calculating pre - depreciation profits.
- It is not the intention to dispose of the building in ten years' time; however, it is company policy to take a notional figure into account for project evaluation purposes.

The present value of ₹1 due	1 year hence at 8%	= 0.926
	2	= 0.857
	3	= 0.794
	4	= 0.735
	5	= 0.681
	6	= 0.630
	7	= 0.583
	8	= 0.540
	9	= 0.500
	10	= 0.463
	11	= 0.429

[10]

5. (b) (i) ABC Ltd. wishes to raise additional finance of ₹20 lakhs for meeting its investment plans. The company has ₹4,00,000 in the form of retained earnings available for investment purposes. The following are the further details:

- Debt Equity Ratio 25 : 75
- Cost of Debt at the rate of 10% (before tax) upto ₹2,00,000 and 13% (before tax) beyond that.
- Earnings per share, ₹12.
- Dividend Payout: 50% of earnings.
- Expected Growth Rate in dividend 10%.
- Current Market Price per share, ₹60.
- Company's Tax Rate is 30% and shareholder's personal tax rate is 20%.

Required:

(I) Calculate the Post Tax Average Cost of Additional Debt.

(II) Calculate the Cost of Retained Earnings and Cost of Equity.

(III) Calculate the Overall Weighted Average (After Tax) Cost of Additional Finance.

[1+1+3]

(b) (ii) 'Fixed Costs are unrelated to output and irrelevant for decision making purpose in all circumstances'.- Justify. **[5]**

5. (c) The director of finance for a farm cooperative is concerned about the yield per acre he can expect this year's corn crop. The probability distribution of the yields for the current weather conditions is:

Yield kg per acre	Probability
120	0.18
140	0.26
160	0.44
180	0.12

He would like to see a simulation of the yields he might expect over the next 10 years for weather conditions similar to those he is now experiencing.

(i) Simulate the average yield he might expect per acre during the next 10 years using the following random numbers: 20, 72, 34, 54, 30, 22, 48, 74, 76, 02.

(ii) He is also interested in the effect of market price fluctuations on the co-operatives farm revenue. He makes this estimate of per kg. prices for corn.

Price per kg (₹)	Probability
2.00	0.05
2.10	0.15
2.20	0.30
2.30	0.25
2.40	0.15
2.50	0.10

Simulate the revenues he might expect to observe over the next 10 years using the following random numbers for SP per kg: 82, 95,18, 96, 20, 84, 56,11, 52, 03. **[10]**