Paper 14 - Advanced 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 Question No. 2 to 8.

Section A [20 marks]

1. (a) Answer all questions each question carries 2 marks [Marks7*2=14]

(i) Given for a project:
Annual Cash inflow ₹80,000
Useful life 4 years
Pay-Back period 2.855 years
What is the cost of the project?

(ii) Presently, the company's share price is ₹120. After 6 months, the price will be either ₹150 with a probability of 0.8 or ₹ 110 with a probability of 0.2. A European call option exists with an exercise price of ₹ 130. What will be the expected value of call option at maturity date?

(iii) A mutual Fund had a Net Asset Value (NAV) of ₹72 at the beginning of the year. During the year, a sum of ₹6 was distributed as Dividend besides ₹ 4 as Capital Gain distributions. At the end of the year, NAV was ₹ 84. Calculate total return for the year .

(iv) The Sterling is trading at ₹1.6100 today. Inflation in UK is 4%and that in USA is 3%. What could be spot rate($/£) after 2 years?

(v) Historically, when the market return changed 10%, the return on stock of Arihant Ltd changed by 16%. If variance of market is 257.81, what would be the systematic risk for Arihant Ltd?

(vi) The beta co-efficient of equity stock of ARISTO LTD is 1.6. The risk free rate of return is 12% and the required rate of return is 15% on the market portfolio. If dividend expected during the coming year ₹2.50 and the growth rate of dividend and earnings is 8%, at what price the stock of ARISTO LTD. Can be sold (based on CAPM)?

(vii) The ratio of current assets (₹3,00,000) to current liabilities (₹2,00,000) is 1.5 : 1. The accountant of this firm is interested in maintaining a current ratio of 2 : 1 by paying some part of current liabilities. Calculate the amount of current liabilities which must be paid for this purpose .

(b) State if each of the following sentences is T (= True) or F (= False), Each Question carries 1 mark. [Mark: 6*1=6]

(i) A firm adopts financial contingency planning in situations of prosperity.

(ii) Cost of Retained Earnings
= (Cost of Equity) × (1-Rate of Tax) × (1-Cost of purchasing new securities or brokerage cost)

(iii) Securitisation is the conversion of non-tradable assets into marketable securities.

(iv) Under favourable conditions, Financial Leverage decreases EPS.

(v) Sensitivity analysis refers to studying the relationship between risks and return.

(vi) Preferred stock, a hybrid corporate security, pays a variable dividend depending on the corporation's earnings.

Section-B

Answer any 5 Questions from the following. Each Question carries 16 Marks.

2 (a) **Das Ltd. a manufacturing company produces 25,000 litres of special lubricants in its plant. The existing plant is not fully depreciated for tax purposes and has a book value of ₹ 3 lakhs (it was bought for ₹ 6 lakh six years ago). The cost of the product is as under:**

Particulars	Cost/Litre (₹)
Variable costs	60.00
Fixed Overheads	15.00
	75.00

It is expected that the old machine can be used for further period of 10 Years by carrying out suitable repairs at a cost of ₹2 lakh annually.
A manufacturer of machinery is offering a new machine with the latest technology at ₹10 lakhs after trading off the old plant (machine) for ₹1 lakh. The projected cost of the product will then be:

Particulars	Cost/Litre (₹)
Variable costs	45.00
Fixed Overheads	20.00
	65.00

The fixed overheads are allocations from other department plus the depreciation of plant and machinery. The old machine can be sold for ₹ 2 lakh in the open market. The new machine is expected to last for 10 years at the end of which, its salvage value will be ₹1 lakhs. Rate of corporate taxation is 50%. For tax purposes, the cost of the new machine and that of the old one may be depreciated in 10 years. The minimum rate of return expected is 10%

It is also anticipated that in future the demand for the demand for the product will remain at 25,000 litres.

Advise whether the new machine can be purchased Ignore capital gain taxes.
[Given: PVIFA (10%, 10 years) = 6.145, PVIF (10%, 10 years) = 0.386] [6 marks]

2 (b) **Following are the estimates of the net cash flows and probability of a new project of M/s X Ltd.:**

Particulars	Year	P = 0.3	P = 0.5	P = 0.2
Initial investment	0	4,00,000	4,00,000	4,00,000
Estimated net after tax cash inflows per year	1 to 5	1,00,000	1,10,000	1,20,000
Estimated salvage value (after tax)	5	20,000	50,000	60,000

Required rate of return from the project is 10%. Find:

i) **The expected NPV of the project.**
ii) **The best case and the worst case NPVs.**
iii) **The probability of occurrence of the worst case if the cash flows are: (a) perfectly dependent overtime, (b) independent overtime.**
iv) **Standard deviation and coefficient of variation assuming that there are only three streams of cash flows, which are represented by each column of the table with the given probabilities.**

v) Coefficient of variation of X Ltd. on its average project which is in the range of 0.95 to 1.0. If the coefficient of variation of the project is found to be less riskier than average, 100 basis points are deducted from the Company's cost of capital. Should the project be accepted by X Ltd.? [10 marks]

3 (a) Write down the relationship between correlation and diversification. [6 marks]

3 (b) The following are the data on six portfolios.

Portfolio	Average annual return	Standard Deviation	Correlation with market
P	18.6	27.0	0.81
Q	14.8	18.0	0.65
R	15.1	8.0	0.98
S	22.0	21.2	0.75
T	-9.0	4.0	0.45
U	26.5	19.3	0.63
Market Risk	12.0	12.0	
Risk Free Rate	9.0		

(i) Rank these Portfolios using —
- Sharpe's Method, and
- Treynor's Method.

(ii) Compare the ranking in part (i) and explain the reasons behind the differences. [10 marks]

4. (a) A portfolio Manager has the following four stocks in his portfolio:

Security	No. of shares	Market price per share (₹)	β
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

(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? [12 marks]

4. (b) List the aspects that should be borne in mind by a depositor while making deposits with an NBFC. [4 marks]

5. (a) Theoretical Forward Price — no Dividends, no carrying cost compute the theoretical forward price of the following securities for 1 month, 3 months and 6 months —

Securities of	DD Ltd	EE Ltd	FF Ltd
Spot price[S_0]	₹160	₹2600	₹600

You may assume a risk free interest rate of 9% p.a and 12% p.a. [8 marks]

5. (b) Stock of Kamla Woodwork is currently quoted at ₹110. In three months time it could either be ₹90 or ₹135. Ascertain the value of Call Option with an exercise price of ₹120 if the risk free rate of return is 8%. [8 marks]

6 (a) Your Company has to make a US $ 1 Million payment in three month's time. The dollars are available now. You decide to invest them for three months and you are given the following information.

- **The US deposit rate is 8% p.a.**
- **The sterling deposit rate is 10% p.a.**
- **The spot exchange rate is $ 1.80 / pound.**
- **The three month forward rate is $ 1.78/ pound.**

(i) Where should your company invest for better results?

(ii) Assuming that the interest rates and the spot exchange rate remain as above, what forward rate would yield an equilibrium situation?

(iii) Assuming that the US interest rate and the spot and forward rates remain as in the original question, where would you invest if the sterling deposit rate were 14% per annum?

(iv) With the originally stated spot and forward rates and the same dollar deposit rate, what is the equilibrium sterling deposit rate? [10 marks]

6 (b) An Indian customer who has imported equipment from Germany has approached a bank for booking a forward Euro contract. The delivery is expected six months from now. The following rates are quoted:

($/Euro) spot 0.8453/0.8457
6m-Swap points 15/20
₹/$ spot 46.47/46.57
6m-Swap points 20/30
What rate the bank will quote, if it needs a margin of 0.5%? [6 marks]

7 (a) Describe the key reasons to invest in infrastructure in India. [6 marks]

(b) Lotus Finance Ltd. is engaged in leasing business. The company wants your advice to structure the lease of a machine costing ₹30 lacs. The machine will have no salvage value. The life of the machine and the lease period will be 5 years and it has to be fully depreciated in 5 years on straight line basis. The average post-tax cost of funds to Lotus Finance is 10%, but to cover the effects of inflation, they prefer to hike this rate by 2%. Assume tax rate is 50% and that taxes are paid on the last day of the year.
Calculate the minimum annual lease rent to be charged if

(i) the lease rents are payable on the first day of each year.
(ii) the lease rents are payable on the last day of each year;

What is the type of the above lease? *Give reasons for your classification.* [Marks 5+3+2]

8 (a) A manager is trying to decide which of three mutually exclusive projects to undertake. Each of the projects could lead to varying net profits which are classified as outcomes I, II and III. The manager has constructed the following pay-off table or matrix (a conditional profit table).

Outcome-wise Net profits for projects A, B and C are as follows:

Project	I	II	III
A	50,000	65,000	80,000
B	70,000	60,000	75,000
C	90,000	80,000	55,000
Probability	0.2	0.6	0.2

Which project should be undertaken? [6 Marks]

(b) What do you understand by credit rating? What aspects credit rating do not measure?

[4 marks]

(c) Assume that you are the calling bank. The following rates per $ is quoted against S.Fr.

Day	Quotes
	1.6962/1.6978
	1.6990/1.7005
	1.7027/1.7042

(i) On which day, is it cheaper to buy US $ with respect to S.Fr.?

(ii) How many US $ do you need to buy 1000 S.Fr. on Day 1?

(iii) What is the Spread on Day 2?

(iv) If you exchanged $ 2,500 for S.Fr. 4256.75, on which day did you exchange?

[6 marks]