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 Question No. 2 to 8.

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 marks]

(i) Given that the strike price is ₹240, the current stock price is ₹225, and risk-free interest rate is 5% p. a., calculate the theoretical minimum price of a put option after 6 months.
(A) 9.07
(B) 10.07
(C) 11.07
(D) 12.07

(ii) An investor holds two equity shares A and B in equal proportion with the following risk and return:
$E(R_A)$ = 26%
σ_A = 20%
$E(R_B)$ = 22%
σ_B = 24%
The returns of these securities have a positive correlation of 0.7. Calculate the portfolio return and risk.
(A) 25% (expected return), 29% risk
(B) 24% (expected return), 30% risk
(C) 24% (expected return), 20.30% risk
(D) 25% (expected return), 20.30% risk

(iii) The foreign exchange market prices for US dollar ($) against Indian rupees (₹) are quoted as under:

	Buying	Selling
Spot	65.30	65.50
Three months' forward	66.35	67.20

Calculate the cost of the forward cover.
(A) 8.33%
(B) 8.22%
(C) 8.11%
(D) 8.00%

(iv) S invested in a mutual fund when the NAV was ₹13.50 per unit. 90 days later, the NAV was ₹12.45 per unit. During the period S got a cash dividend of ₹1.25 per unit and capital gain distribution of ₹ 0.25. Calculate the annualized return.

(A) 16.51%

(B) 15.51%

(C) 14.51%

(D) 13.51%

(v) 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?

(A) ₹ 20

(B) ₹ 16

(C) ₹ 18

(D) ₹10

(vi) Consider the following quotes:

Spot (Euro/Pound) = 1-3904 — 1-3908

Spot (Pound/NZ $) = 0-5020 — 0-5040

What will be the possible % spread on the cross rate between Euro and NZ $?

(A) 0.40

(B) 0.39

(C) 0.41

(D) 0.43

(vii)A project had an equity beta of 1.4 and was going to be financed by a combination of 25% Debt and 75% Equity (Assume Debt Beta as zero).

Hence, the required rate of return of the project is

(A) 16.72%

(B) 18.30%

(C) 17.45%

(D) 12.00%

(Assume R_f = 12% and R_m = 18%).

(viii) 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?

(A) ₹ 2,28,500

(B) ₹ 2,28,400

(C) ₹ 2,28,600

(D) ₹ 2,28,700

(ix) Government securities are free from

(A) Default risk

(B) Purchasing power risk

(C) Interest rate risk

(D) Re-investment risk

(x) Beta of a security measures its

(A) Diversifiable risk

(B) Market risk

(C) Financial risk

(D) None of the above.

Section - B

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

2. (a) VEDAVYAS Ltd. is considering two mutually exclusive projects M and project N. The Finance Director thinks that the project with higher NPV should be chosen, whereas the Managing Director thinks that the one with the higher IRR should be undertaken, especially as both projects have the same initial outlay and length of life. The company anticipates a cot of capital of 10% and the net after-tax cash flow of the projects are as follows:

Year	0	1	2	3	4	5
Cash flows (₹)						
Project M	(4,00,000)	70,000	1,60,000	1,80,000	1,50,000	40,000
Project N	(4,00,000)	4,36,000	20,000	20,000	8,000	6,000

You are required to:

(i) Calculate the NPV and IRR of each project.

(ii) State with reasons, which project you would recommended.

(iii) Explain the inconsistency in the ranking of the two projects.

Present value Table is given:

Year	0	1	2	3	4	5
PVIF at 10%	1.000	0.909	0.826	0.751	0.683	0.621
PVIF at 20%	1.000	0.833	0.694	0.579	0.482	0.402

(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 co-efficient 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

[10+6]

3. (a) A company has a choice of investments between several Equity- oriented Funds. The company has an amount of ₹1 crore to invest. The details of the funds are as follows:

Mutual Funds	M	N	o	P	Q
Beta	1.7	1.0	0.9	2.1	0.7

Required:

(i) If the company invests 20% of its investments in the first two mutual funds, and an equal amount in the mutual funds O, P and Q, what is the beta of the portfolio?

(ii) If the company invests 15% of its investments in O, 15% in M, 10% in Q and the balance in equal amount in the other two mutual funds, what is the beta of the portfolio?

(iii) If the expected return of the market portfolio is 14% at a beta factor of 1.0, what will be the portfolio's expected return in both the situations given above?

(b) You are running a portfolio management business and have assembled the following portfolio for client A.

Scrip	Value	Beta
Infosys	₹5 lakhs	1.21
Hind. Lever	₹8 lakhs	0.97
Hind. Lever	₹5 lakhs	1.09
Reliance	₹5 lakhs	1.09
Tata Motors	₹2 lakhs	1.32

Your client insists that the portfolio should comprise the above 4 scrips alone and that each scrip should be at least 10% of the total portfolio value. You project the Sensex which is currently 4200 to move to 4500 by the end of 3 months and to 4800 by the end of 6 months.

(i) What will be the value of your portfolio at the end of 3 months and 6 months?

(ii) What is the portfolio beta currently?

(iii) What could you do to improve the portfolio performance given your view on the market? **[8+8]**

4. (a) A Ltd., and B Ltd., has the following risk and return estimates

R_A	R_B	σ_A	σ_B	(Correlation coefficient) = r_{AB}
20%	22%	18%	15%	-1.50

Calculate the proportion of investment in A Ltd., and B Ltd., to minimize the risk of Portfolio.

(b) As an investment manager, you are given the following information:

Investment	Initial Price (₹)	Dividend (₹)	Market Price (₹)	Beta
Equity Shares of				
A Ltd.	70	5	140	0.8
B Ltd.	80	5	150	0.7
C Ltd.	90	5	270	0.5
Govt. of India bonds	1,000	160	1,010	0.95

Risk-free return may be taken at 16%.

Required:

(i) Expected rate of return of Portfolio using CAPM.

(ii) Average return of Portfolio [8+8]

5. (a) The current price (in Dec 2018) of sugar is ₹40 per kg. Sugar Mill SM expects to produce 200 MT of sugar in February 2019. February futures contract due on 20th February is trading at ₹ 45 per kg. SM wants to hedge itself against a price decline to below ₹45 kg in February. 100% cover is required and each contract is for 10 MT.

(i) Explain SM's appropriate hedging measure showing cash flows for full value if the price falls to ₹42 per kg in February 2019.

(ii) What is the position of SM in the futures and in the spot market? (1 MT = 1000 kg.)

(b) The equity shares of R Ltd. are being sold at ₹ 210. A 3-month call options is available for a premium of ₹6 per share and a 3 month put option is available for a premium of ₹5 per share. Find out the net pay off of the option holder of the call option and put option given that:

(i) the strike price in both cases is ₹220, and

(ii) the share price on the exercise day is ₹200 or ₹ 210 or ₹230 or ₹240. [8 + 8]

6. (a) Nihar, a foreign exchange dealer, is actively engaged in simultaneously buying and selling same foreign currencies to make guaranteed profit.

The rates prevailing in the market are as follows:

Spot rate	:	₹65.80/$
3 months forward rate	:	₹66.40/$
3 months interest rates	:	₹ : 7% p. a.
		$: 11% p. a.

Discuss the possibility of a net gain in arbitrage if Nihar's borrowing potential is limited to ₹100 million.

(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%? [10+6]

7. (a) Your company is considering to acquire an additional computer to supplement its time-share computer services to its clients. It has two options:

(i) To purchase the computer for ₹ 22 lakhs.
(ii) To lease the computer for three years from a leasing company for ₹ 5 lakhs as annual lease rent plus 10% of gross time-share service revenue. The agreement also requires an additional payment of ₹ 6 lakhs at the end of the third year. Lease rents are payable at the year-end and the computer reverts to the lessor after the contract period.

The company estimates that the computer under review will be worth ₹ 10 lakhs at the end of third year.

Forecast Revenues are:

Year	1	2	3
Amount (₹ in lakhs)	22.5	25	27.5

Annual operating costs excluding depreciation/lease rent of computer are estimated at ₹ 9 lakhs with an additional ₹ 1 lakh for start up and training costs at the beginning of the first year. These costs are to be borne by the lessee. Your company will borrow at 16% interest to finance the acquisition of the computer. Repayments are to be made according to the following schedule:

Year end	1	2	3
Principal (₹'000)	500	850	850
Interest (₹'000)	352	272	136

The company uses straight line method (SLM) to depreciate its assets and pays 50% tax on its income. The management approaches you to advice which alternative would be recommended and why?

Note: The PV factor at 8% and 16% rates of discount are:

Year	1	2	3
8%	0.926	0.857	0.794
16%	0.862	0.743	0.641

(b) Yamuna Ltd. is an un-levered firm and undertakes three projects A, B and C. The risk-free rate of return is 8% and the return from the market is 12%. The projects have a weight of 0.5, 0.3 and 0.2 respectively. Their respective betas are 1.3,1.0 and 0.8.

You are required to compute:

(i) Expected return from each project;

(ii) Expected return for the company; and

(iii) Cost of capital. **[9+7]**

8. Answer any 4 questions out of 5 **(4*4=16)**

(a) Functions of Secondary Market

(b) Futures contract

(c) State the measures of the potential loss amount due to market risk.

(d) Discuss Regulatory role of RBI

(e) Discuss Currency swap.