Paper 14- Advanced Financial Management

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Full Marks: 100 **Time allowed: 3 Hours**

Sec-A

Answer Question No. 1 which is compulsory Carries 20 Marks.

1. (A) Each Question carries 2 Marks **[7×2=14]**

(i) When are call options and put options said to be 'At the money' in the Options market?

(ii) It is given that Rupee/ £ quote is ₹ 100 – ₹104 and that ₹/$ quote is ₹50 – ₹52. What would be the $/£ quote?

(iii) A safety mutual fund that had a net asset value of ₹ 20 at the beginning of a month, made income and capital gain distribution of ₹0.06 and ₹0.04 respectively per unit during the month and then ended the month with a net asset value of ₹20.25. Calculate the monthly return?

(iv) Mr. Ravi is planning to purchase the shares of X Ltd. which had paid a dividend of ₹2 per share last year. Dividends are growing at a rate of 10%. What price would Mr. Ravi be willing to pay for X Ltd.'s shares if he expects a rate of return of 20%?

(v) Z Ltd's equity beta is 1.5, Market gives a return of 18% for the year. Risk-free Rate of Interest is 10%. Z Ltd gives a return of 24% for the year, compute the Alpha of Z Ltd?

(vi) Compute the Profitability Index of a Project which has the following NPV Distribution.

NPV Amount ₹	Probability
1,25,000	0.3
2,00,000	0.4
2,45,000	0.3

The Project involves Cash-outflow of ₹ 5,00,000.

(vii) What do you mean by Repo Rate?

1. (B) State if each of the following sentences is T (= true) or F (= false), Each Question carries 1 Mark: **[6×1=6]**

(i) Beta indicates the unsystematic risk of a security.
(ii) Cap and floor are Interest Rate Options.
(iii) Forward is Standardized future contract.
(iv) The difference between the Bid Rate and Ask rate is known as Spread.
(v) American options can be exercised only on expiry date.
(vi) In Capital Budgeting the NPV and IRR techniques always give the same results under all the circumstances.

Sec-B

Answer any 5 Questions from the following. 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

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]**

2. (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

[6]

3. (a) The returns on Stock A and Market Portfolio for a period of 6 years are as follows:

Year	Return on Security A in %	Return on Market Portfolio (%)
1	10	8
2	17	10
3	13	13
4	2	-4
5	10	11
6	-10	-2

You are required to determine the a) Characteristic line for stock A b) Systematic and Unsystematic risk of Stock A. **[8]**

3. (b) Investor's weekly, a News Magazine on the happenings at Cloudy Street, publishes the following information in its November 2015 Edition for Security PQR: Equilibrium return=20%, Market portfolio return=20%, The market price of the 6%Treasury Bills (₹100) at 120. Covariance of Security with market portfolio = 225% and correlation = 0.85. Determine the risk of the market portfolio and Security Risk. **[8]**

4. (a)

BSE Index	25000
Value of portfolio	₹50,50,000
Risk free interest rate	9% p.a.
Dividend yield on Index	6% p.a.
Beta of portfolio	2

We assume that a future contract on the BSE index @ 50 Units per contract with four months maturity is used to hedge the value of portfolio over next three months. One future contract is for delivery of 50 times the index.
Based on the above information calculate:

i) Price of future contract. (ii) The gain on short futures position if index turns out to be 22500 in three months **[8]**

4. (b) The current price (in Dec 2015) of sugar is ₹40 per kg. Sugar Mill SM expects to produce 200 MT of sugar in February 2016. February futures contract due on 20thFebruary 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 2016.
(ii) What is the position of SM in the futures and in the spot market? **[8]**

5. **(a)** PS Fund invests exclusively in Public sector undertakings, yielded ₹4.85 per unit for the year. The opening NAV was ₹26.85. The Fund has a risk factor of 3.50%. Ascertain the Sharpe Ratio and compare the fund performance with market performance if

(i) Risk Free Return is 6%, if return on Sensex is 16% with a standard deviation of 3.75%.
(ii) Risk Free Return is 5%, return on Sensex is 18% with a standard deviation of 4%. **[8]**

5. (b) Mr. G, on 01.07.2013, during the initial offer of some mutual fund invested in 20,000 units having face value of ₹20 per unit. On 31.03.2014, the dividend operated by the Mutual Fund was 10% and Mr. G found that his annualized yield was 153.33%. On 31.03.2015, 20% dividend was given. On 31.03.2016, Mr. G redeemed all his balance of 22,600 units when his annualized yield was 73.52%. What is the Net Asset Value (NAV) as on 31.03.2016? **[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/$. The interest rates in India is 7% Per Annum and Interest rate in USA is 11% Per Annum. Discuss the possibility of a net gain in arbitrage if Nihar's borrowing potential is limited to 100 Million Rupees. **[8]**

6. (b) The following information is available for Call option on the stock of MACON LTD. Current market price ₹415, Strike price ₹400, Time to expiration (1 year = 360 days). Standard deviation of return 22%, and Risk-free rate of interest is 5%.

You are required to compute the value of Call option, using Black- Scholes model. [Given: N(d1) = N (0.5033) = 0.7019; N(d2) = N (0.3933) = 0.6628; Ln (1.0375) = 0.03681; and e = 2.71828]. **[8]**

7. (a)K Ltd. has the following capital structure as per its Balance Sheet as at 31st March, 2016.

Particulars	Amount Lakh ₹
Equity Capital (₹10 Shares)	4
18% Preference Capital (₹ 100 Per Share)	3
Retained Earnings	1
12.5% Debentures	8
12% Term Loan	4

Additional Information:

(i) The current market price of the company's equity share is ₹64.25. The dividend expected on the equity share at the end of year is at 80% which is expected to grow @ 5 % p.a. forever.

(ii) The preference shares of the company which are redeemable after 10 years are currently selling at ₹ 90 per share.

(iii) The debentures are redeemable after 5 years and are currently quited at ₹95 Per debenture

(iv) The Tax Rate is 30%

Calculate the weighted average cost of capital using market value weights. **[8]**

7. (b) Discuss the factors that Credit Rating' does not measure? **[8]**

8. Write a short note on any four of the following: [4×4=16]

(a) Book Building system
(b) Money Market VS Capital Market
(c) Depository system in India
(d) Hedge Funds
(e) Forward Market Commission