

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

[7×2=14]

- (i) Mention any three economic functions of Financial markets
(ii) Following information is available regarding a mutual fund:

Return	13
Risk (σ)	16
Beta (β)	0.90
Risk free rate	10

Calculate Sharpe ratio and Treynor's ratio.

- (iii) Write down the objective of Inter Bank Participation Certificate.
(iv) What is Rolling settlement?
(v) Compute the theoretical forward price of the following security for 6 months.

Spot Price (S_x)	₹160
Risk free interest rate	9%

[Given: $e^{0.045} = 1.046028$]

- (vi) It is given that ₹/£ quote is ₹100.68 – 102.95 and ₹/\$ quote is ₹61.86 – 62.87. What would be the \$/£ quote?
(vii) A project had an equity beta of 1.3 and was going to be financed by a combination of 30% debt and 70% equity. Assuming debt-beta to be zero, calculate the project beta and return from the project taking risk free rate of return to be 10% and return on market portfolio of 18%.

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

[6×1=6]

- (i) Inter Bank Participation Certificate (IBPC) can be issued by any Scheduled Commercial Bank and its interest rates are freely determined in the market.
(ii) Arbitrageurs are interested in making purchases and sales in different markets at different times to profit from the price discrepancy between the markets.
(iii) At least 60% of the assets of an Infrastructure Debt Fund should be invested in debt securities or securitized debt instruments of infrastructure companies.
(iv) In a yield based auction, successful bidders are those who have bid at or below the cut off yield, whereas in a price based auction, successful bidders are those who have bid at or above the cut-off price.

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- (v) A straddle is a strategy that is accomplished by holding an equal number of puts and calls with the same strike price and expiration dates.
- (vi) Treasury Bills are not eligible for Repo transactions.

Section-B

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

2. (a) Equi – stable is a portfolio model wherein 20% of Fund value is invested in Fixed Income Bearing Instruments. The balance of 80% is divided among old industry stock (iron and steel), Automotive Industry stock, Information Technology stocks, Infrastructure Company stocks and Financial Services Sector in the ratio of 4:2:6:3:5.

Three mutual funds X, Y and Z offer a fund scheme based on the Equi-stable portfolio model. The actual return on Equi-Stable portfolios of each of the three funds for the past 3 years is as follows:

	1	2	3
Portfolio X	17.35%	18.70%	21.60%
Portfolio Y	17.20%	18.25%	22.15%
Portfolio Z	17.10%	18.60%	22.00%

Beta factor of the Equi-Stable portfolio is measured at 1.35. Return on market portfolio indicates that ₹1,000 invested will fetch ₹153 in a year (including capital appreciation and dividend yield). RBI bonds, guaranteed by the Central Government yields 4.50%.

Rate the fund managers of X, Y and Z.

[8]

- 2.(b) A sugar mill in Maharashtra is expected to produce 100 MT of sugar in the month of February. The current market price today (the month of December) is ₹ 22 per kg. February futures contract in sugar due on 20th February is trading at ₹25 per kg. The sugar mill apprehends that the price lesser than ₹25 per kg will prevail in February due to excessive supply then.
How can the sugar mill hedge its position against the anticipated decline in sugar price in February?

[8]

- 3.(a) 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)	90 days
Standard deviation of return	22%
Risk-free rate of interest	5 %

You are required to compute the value of call option, using Black- Scholes model.

[Given: $N(d_1) = N(0.5033) = 0.7019$;

$N(d_2) = N(0.3933) = 0.6628$;

$\ln(1.0375) = 0.03681$; and

$E = 2.71828$].

[10]

- 3.(b) Write down any six processes for raising equity through ADR.

[6]

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4. (a) From the following data for Government Securities:

Face Value ₹	Interest rate %	Maturity Year	Current Price ₹
1,00,400	0	1	91,900
1,00,400	10	2	98,900
1,00,400	10.5	3	99,400

Calculate the forward rates.

[8]

4.(b) State any eight RBI Guidelines relating to Infrastructure Debt Fund Schemes (IDF Schemes).

[8]

5. (a) You are given the middle rates as under:

₹ 80/£ 1 in London,

₹ 47/US \$ in Delhi, and

US \$ 1.58/£ 1 in New York.

Compute the Arbitrage gain on ₹ 8,00,000.

[8]

5. (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) 90 days

Standard deviation of return 22%

Risk-free rate of interest 5 %

You are required to compute the value of call option, using Black- Scholes model.

[Given: $N(d_1) = N(0.5033) = 0.7019$;

$N(d_2) = N(0.3933) = 0.6628$;

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[8]

6. (a) 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.

[5+3+2=10]

6.(b) The co-efficient of correlation between returns of Spark Ltd and Sensex is 1.10. The expected returns on the stock of Spark and Sensex are 18% and 14.37% respectively. The return on 182 day T- Bill is 6.31%. What would be the standard deviation of the returns of Spark if the standard deviation of Sensex's return is 17%?

[6]

7.(a) Hindus Ltd. has to make US \$ 5 million payment in three months' time. The required amount in dollars is available with Hindus Ltd. The management of the company decides to invest if for three months and the following information is available in this context:

The US \$ deposit rate is 7% per annum.

The Sterling-Pound deposit rate is 9% per annum.

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The spot exchange rate is \$ 1.42 / £.

The three month forward rate is \$ 1.40 / £.

Answer the following questions:

- (i) Where should the company invest for better returns?
- (ii) Assuming that the interest rates and 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 above, where should the company invest if the Sterling-Pound deposit rate were 12% per annum?
- (iv) With the originally stated spot and forward rates and same dollar deposit rate, what is the equilibrium Sterling-Pound deposit rate? **[3+3+2+2=10]**

7. (b) Classify the following participants of the commodity market under the appropriate category—Hedgers, Speculators and Arbitrageurs: **[1×6=6]**

- (i) Warehousing Companies
- (ii) Brokerage Houses
- (iii) Food Processing Companies
- (iv) Farmers
- (v) Commodity Consumers

8. Answer any four questions:

[4×4=16]

- (a)** What do you understand by credit rating? What aspects credit rating do not measure? **[4]**
- (b)** Discuss unique features of National Level Commodity Exchanges. **[4]**
- (c)** Write short note types of credit risks. **[4]**
- (d)** Write short note on NBFC-MFI **[4]**
- (e)** Write short note on FCCBs. **[4]**

Present value factors $\left(\frac{1}{1+x}\right)^n$

End of year (n) \ Rate (x)	1	2	3	4	5	6	7
7%	0.9346	0.8734	0.8163	0.7629	0.7130	0.6663	0.6227
10%	0.9091	0.8264	0.7513	0.6830	0.6209	0.5645	0.5132
12%	0.8929	0.7972	0.7118	0.6355	0.5674	0.5066	0.4523
20%	0.8333	0.6944	0.5787	0.4823	0.4019	0.3349	0.2791