PAPER-14: Advanced Financial Management

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

The figures in the margin on the right side indicate full marks.
Answer Question No. 1 which is compulsory.
From Section A: Answer any two questions.
From Section B: Answer any one question.
From Section C: Answer any one question.
From Section D: Answer any one question.

Working Notes should form part of the answer.
"Whenever necessary, suitable assumptions should be made and indicated in answer by the candidates."

1. **(a)** Write down the objectives of inter bank participation certificate? **[2]**

(b) An investor has a cash of $10,000,000 at disposal. He wants to invest in a bond with $1,000 nominal value and whose dirty price is equal to 107.457%.
(i) What is the number of bonds he will buy?
(ii) Same question if the nominal value and the dirty price of the bond are respectively $100 and 98.453%.
[Note: Dirty Price = Clean Price + Accrued Interest] **[2+2]**

(c) 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. **[5]**

(d) MR.ADHIRAJ is planning to construct a minimum risk portfolio by investing in the shares of ARIHANT LTD. and SUZLON LTD. The risks associated with the returns of Arihant Ltd. and Suzlon Ltd. are 23% and 25% respectively. If the co-efficient of correlation between the returns of shares of both companies is "O", what proportion of funds to be invested in the shares of ARIHANT LTD? **[2]**

(e) What types of risk is involved in Investment in Government Securities? **[2]**

(f) What do you mean by risk adjusted discount rate method? **[2]**

(g) Write down the advantages of securitisation to the Originator. **[3]**

SECTION A
(Answer any two of the following.)

2. **(a)** Explain the Objective and Functions of State Cooperative Banks.

(b) Two funds are available for investment. Fund X is being launched i.e. 31.12.2012 and available for investment at ₹ 10 per unit. A similar Fund Y (same risk profile like Fund X) is also available for investment at ₹ 19.45 per unit. The information of quarterly NAV for the next

three quarters are available as given below. Investor Mr. A prefers Fund X and Investor Mr. B prefers Fund Y for investment through SIP (Systematic Investment Plan) each installment entailing ₹ 2,000 for four quarters including initial investment:

Closing NAV	Fund X ₹	Fund Y ₹
31.12.2012	10.00	19.45
31.03.2013	11.1567	21.50
30.06.2013	14.7680	27.15
30.09.2013	12.8554	23.69

Which investor (Mr. A or B) would clock a higher return on investment as on 30.09.2013? (Ignore Time Value of Money). **[6+6]**

3. (a) State the limitations of taking the mutual fund route for investment?

(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. **[4+(6+2)]**

(ii) Compare the ranking in part (i) and explain the reasons behind the differences.

4. (a) Write down the other risks to which the derivatives clearing houses may be exposed.

(b) Today is 24th March. A refinery needs 1,050 barrels of crude oil in the month of September. The current price of crude oil is ₹ 3,000 per barrel. September futures contract at Multi Commodity Exchange (MCX) is trading at ₹ 3,200. The firm expects the price to go up further and beyond ₹ 3,200 in September. It has the option of buying the stock now. Alternatively it can hedge through futures contract.

(i) If the cost of capital, insurance, and storage is 15% per annum, examine if it is beneficial for the firm to buy now?

(ii) Instead, if the upper limit to buying price is ₹ 3,200 what strategy can the firm adopt?

(iii) If the firm decides to hedge through futures, find out the effective price it would pay for crude oil if at the time of lifting the hedge (a) the spot and futures price are ₹ 2,900 and ₹ 2,910 respectively, (b) the spot and futures price are ₹ 3,300 and ₹ 3,315 respectively. **[4+(2+2+4)]**

SECTION B

(Answer any one of the following.)

5. (a) Who can invest in P-Notes?

(b) 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?

(c) Prabir has ₹60 Lakhs in hand. He is contemplating investment in the shares of Super Star Accessories Ltd (VAL) which is being traded at ₹ 200 per share.

Prabir expects a dividend declaration of ₹37 per share 3 months hence and a market price of ₹185 per share at the end of the year, at which Prabir plans to sell of all his holdings.

If the discount rate is 12% p.a., what will be the course of action if Prabir discounts his cash flows under continuous compounding approach and monthly discounting approach? **[6+(3+1+2+2)+6]**

6. (a) What are the major sources for raising foreign currency finances-Explain.

(b) Given the following information—

BSE Index	50,000
Value of Portfolio	₹1,01,00,000
Risk Free Interest Rate	9% p.a.
Dividend Yield on Index	6% p.a.
Beta of Portfolio	2.0

We assume that a futures contract on the BSE index with 4 months maturity is used to hedge the value of portfolio over next 3 months. One future contract is for delivery of times the index. Based on the information, Calculate — (i) Price of future contract, (ii) The gain on short futures position if index turns out to be 45,000 in 3 months.

(c) State the measures of the potential loss amount due to market risk? **[6+(3+6)+5]**

SECTION C

(Answer any one of the following.)

7. **(a)** State the objectives of portfolio Management.

(b) A Study by a Mutual Fund has revealed the following data in respect of the three securities:

Security	σ (%)	Correlation with Index, ρ_{sm}
P	20	0.66
Q	18	0.95
R	12	0.75

The Standard Deviation of the Market Portfolio (BSE Sensex) is observed to be 18%.

(i) What is the sensitivity of returns of each stock with respect to the market?

(ii) What are the Co-variances among the various stocks?

(iii) What would be the risk of portfolio consisting of all the three stocks equally?

(iv) What is the beta of the portfolio consisting of equal investment in each stock?

(v) What is the total systematic and unsystematic risk of the portfolio? **[6+(1+2+4+1+2)]**

8. **(a)** (i) Calculate the market sensitivity index and the expected return on the Portfolio from the following data;

Standard deviation of an asset	4.5%
Market standard deviation	4.0%
Risk – free rate of return	15.0%
Expected return on market Portfolio	17.0%
Correlation coefficient of Portfolio with market	0.89

(ii) What will be the expected return on the Portfolio, if Portfolio beta is 0.5 and the risk free return is 10%.

(b) Write down the relationship between correlation and diversification.

(c) Securities X and Y have standard deviations of 3% and 9%. Nitin is having a surplus of ₹20 Lakhs for investment in these two securities. How much should he invest in each of these securities to minimize risk, if the correlation co-efficient for X and Y is — (i) -1; (ii) -0.30; (iii) 0; (iv) 0.60 **[(3+2)+5+6]**

SECTION D

(Answer any one of the following.)

9. (a) A company is considering two mutually exclusive projects X and Y. Project X costs ₹ 3,00,000 and Project Y ₹ 3,60,000. You have been given below the net present value, probability distribution for each project:

Project X		Project Y	
NPV Estimate	Probability	NPV Estimate	Probability
₹		₹	
30,000	0.1	30,000	0.2
60,000	0.4	60,000	0.3
1,20,000	0.4	1,20,000	0.3
1,50,000	0.1	1,50,000	0.2

(i) Compute the expected net present value of Projects X and Y.

(ii) Compute the risk attached to each project i.e., Standard Deviation of each probability distribution.

(iii) Which project do you consider more risky and why?

(iv) Compute the profitability index of each project.

(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

(c) Explain the influences of corporate taxation on corporate financing?

(d) Cyber Company is considering two mutually exclusive projects. Investment outlay of both the projects is ₹ 5,00,000 and each is expected to have a life of 5 years. Under three possible situations their annual cash flows and probabilities are as under:

		Cash Flow ₹	
Situation	Probabilities	Project A	Project B
Good	0.3	6,00,000	5,00,000
Normal	0.4	4,00,000	4,00,000
Worse	0.3	2,00,000	3,00,000

The cost of capital is 9 per cent, which project should be accepted? Explain with workings. **[(1+2+2+2)+3+5+5]**

10. (a) A company is considering Projects X and Y with following information:

Project	Expected NPV (₹)	Standard deviation
X	1,06,000	75,000
Y	2,40,000	1,35,000

(i) Which project will you recommend based on the above data?

(ii) Explain whether your opinion will change, if you use coefficient of variation as a measure of risk.

(iii) Which measure is more appropriate in this situation and why?

(b) A Company requires ₹15 Lakhs for the installation of a new unit, which would yield an annual EBIT of ₹ 2,50,000. The Company's objective is to maximise EPS. It is considering the possibility of Issuing Equity Shares plus raising a debt of ₹3,00,000, ₹6,00,000 and ₹9,00,000. The current Market Price per Share is ₹50 which is expected to ₹40 per share if the market borrowings were to exceed ₹7,00,000. The cost of borrowing are indicated as follows:

Level of Borrowing	Upto ₹2,00,000	₹2,00,000 to ₹6,00,000	₹6,00,000 to ₹9,00,000
Cost of Borrowing	12% p.a.	15% p.a.	17% p.a.

Assuming a tax rate of 50%, work out the EPS and the scheme, which you would recommended to the Company.

(c) Distinguish between NPV and IRR? **[(1+3+1)+8+7]**