

FINAL EXAMINATION

December 2014

P-14(AFM)
Syllabus 2012

Advanced Financial Management

Time Allowed: 3 Hours

Full Marks: 100

The figures in the margin on the right side indicate full marks.

This paper contains 5 questions. All questions are compulsory, subject to instruction provided against each question.

All workings must form part of your answer.

Assumptions, if any, must be clearly stated.

1. All questions are compulsory: 2×10=20
 - (a) Mention any three economic functions of Financial markets. 2
 - (b) 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. 2
 - (c) Write down the objective of Inter Bank Participation Certificate. 2
 - (d) What is Rolling settlement? 2
 - (e) Compute the theoretical forward price of the following security for 6 months.

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

[Given: $e^{0.045} = 1.046028$] 2
 - (f) It is given that ₹/£ quote is ₹ 100.68 – 102.95 and ₹/\$ quote is ₹ 61.86 – 62.87. What would be the \$/£ quote? 2
 - (g) 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%. 2
 - (h) Mr. Varun holds portfolio consisting of two stocks, Stock A and Stock B. Stock A has a standard deviation of returns of 0.60 and Stock B has a standard deviation of 0.80. The correlation co-efficient of the two stocks' return is 0.50. If Varun holds equal amount of each stock, what will be risk of the portfolio consisting of two stocks? 2
 - (i) State any two applications of the Behavioural Finance Theory. 2

Please Turn Over

- (j) Arvind Leasing Company is considering a proposal to lease out a school bus. The bus can be purchased for ₹ 8,00,000 and in turn, be leased out at ₹ 2,00,000 per year for 8 years with payments occurring at the end of each year. What should be the yearly lease payment charged by the company in order to earn 20% annual compounded rate of return before expenses and taxes?

[Given: PVIFA @ 20%, 8 years = 3.837]

2

2. Answer any three questions:

8×3=24

- (a) (i) Mention any three key objectives of Commodity Futures.

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- (ii) An investor purchased 300 units of a mutual fund at ₹ 12.25 per unit on 31st December, 2012. As on 31st December, 2013 he has received ₹ 1.25 as dividend and ₹ 1.00 as capital gains distribution per unit,

Required:

1. The return on investment if the NAV as on 31st December, 2013 is ₹ 13.00.
2. The return on investment as on 31st December, 2013, if all dividends and capital gains distributions are reinvested into additional units of the fund at ₹ 12.50 per unit.

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- (b) (i) 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:

Year	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.

6

- (ii) Describe any one risk management procedure of clearing house.

2

- (c) (i) 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?

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- (ii) Explain any one distinguishing feature of project finance compared to corporate finance.

2

- (d) (i) Moonlight mutual fund is an open-end fund with 50 Lakh units outstanding. You buy 2,100 units today. The dividend paid and the closing NAV for 2 years are as follows:

Year	Dividend ₹	NAV ₹
Today	—	19
1	0.20	21
2	0.25	23

Calculate Money Weighted Rate of Return (MWROR), if you reinvest dividends.

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- (ii) What you are expected to know about issues in Infrastructure Financing?

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3. Answer any two questions:

10 × 2 = 20

- (a) (i) 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.

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- (ii) Explain any two processes of Credit Rating.

2

- (b) (i) Write down any four processes for raising equity through ADRs.

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- (ii) Determine the value of option, both call and put, on expiry for the stock of Nirmal Spice Foods (NSF) Ltd. from the following information:

Exercise price ₹ 510

Spot price on exercise date ranges between ₹ 495 and ₹ 525 with interval of ₹ 5.

Also state what will be the action on the above range of prices for both the options.

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- (c) 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

4. Answer any two questions:

8×2=16

(a) 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:

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

(2) Average return of Portfolio.

6+2=8

(b) 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 mutual funds are as follows:

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

Required:

(1) 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?

(2) 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?

(3) 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?

3+3+2=8

(c) (i) 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:

(1) Expected return from each project;

(2) Expected return for the company; and

(3) Cost of capital.

2×3=6

(ii) The risk-free rate of interest is 4.25% and market return is 12%. Beta value of Security B is 2.10. Assume that you had purchased Security B a year ago for ₹ 312. Current market price is ₹ 380. Since the price is going up, your friend advises to buy more units of Security B, before it touches ₹ 400 mark.

What is your decision?

2

5. Answer any two questions:

10×2=20

(a) A company requires ₹ 27 lakhs for the installation of a new unit, which would yield an annual EBIT of ₹ 4,50,000. The company's objective is to maximise EPS. It is considering the possibility of issuing Equity

shares plus raising a debt of ₹ 5,40,000, ₹ 10,80,000 and ₹ 16,20,000. The current market price per share is ₹ 90 which is expected to fall to ₹ 72 per share if the market borrowings were to exceed ₹ 12,60,000.

The costs of borrowing are indicated as follows:

Level of borrowing	Upto ₹ 3,60,000	₹ 3,60,000 to ₹ 10,80,000	₹ 10,80,000 to ₹ 16,20,000
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 recommend to the company. 8+2=10

- (b) (i) Write down the basic differences between Factoring and Forfeiting. 4
(ii) Determine the risk-adjusted net present value of the following projects: 6

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
Co-efficient of variation	0.4	0.8	1.2
Risk-adjusted discount rate	12%	14%	16%
PV factor 1 to 5 years at risk-adjusted discount rate	3.605	3.433	3.274

- (c) Indira amusement park charges ₹ 200 each for all rides in the park. Variable costs amount to ₹ 50 per ride and fixed costs are ₹ 120 Lakhs. Last year's net income was ₹ 90 Lakhs on sale of ₹ 280 Lakhs. This year, management expects a cost increase of 20% in variable costs and 10% in fixed costs. To help offset these increases, the management is considering raising the price of a ride to ₹ 250.

Required:

- (i) How many rides did this park sell last year?
(ii) If the price increase is not implemented, what is the expected net income for this year assuming the same volume of activity?
(iii) Compute the price indifference point for the new ride price.
(iv) Compute the Break-even point for this year using the old price and the new price. 2+3+3+2=10