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) A mutual Fund had a Net Asset Value (NAV) of ₹72 at the beginning of the year. During the year, a sum of ₹6 was distributed as Dividend besides ₹ 4 as Capital Gain distributions. At the end of the year, NAV was ₹ 84.

Calculate total return for the year.

(ii) What is meant by "Hard" and "Soft" infrastructure?

(iii) List down any two uses for SWAPS.

(iv) List two direct instruments used by RBI in the implementation of its monetary policy.

(v) 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 return of these securities have a positive correlation of 0.7. Calculate the portfolio return and risk.

(iv) The following information is provided:

	Investment	
	X	Y
Principal ₹	20 lacs	20 lacs
Rate of yield p.a.	12%	12%
Tenor (years)	3	3
Compounding	monthly	continuous
Compounding charges payable at the end of the period	Nil	₹ m per lac

For what minimum value of 'm' will an investor prefer X to Y?

(vii) Securities A and B have a standard deviation of 10% and 15% respectively. The respective average returns are 12% and 20%.

Investor X has limited funds. He wants to compare A and B and choose the safer security. Advise X.

(b) State if each of the following sentences is T (= True) or F (= False), Each Question carries1mark. [6×1=6]

(i) The delta of a stock option is the number of units of stock one should hold per 100 options sold to create a risk-free hedge.

(ii) Forward contracts have more potential for default risks than futures.

(iii) Bridge Finance refers to loans taken by a company from its promoters until loans are disbursed by Financial Institutions.

(iv) Operating lease can be cancelled by the lessee before the expiry date.

(v) No prior approval of RBI is required for issue of Commercial Paper.

(vi) In India, the credit rating symbol for moderate safety is BB.

Answer: 1 (a)

(i) Capital Appreciation = Closing NAV- Opening NAV = 84- 72 = ₹12.

Return = [Cash Dividend + Capital Appreciation + Capital gain]/Opening NAV.

=[6+4+12]/72 = 22/72 = 0.3056 = 30.56%

(ii) **"Hard"** infrastructure refers to the large physical networks necessary for the functioning of modern industrial nations.

"Soft" infrastructure refers to all the institutions which are required to maintain the economic, health and cultural and social standards of a country, such as the financial system, the education system, the health care system, the system of government and law enforcement as well as emergency services.

(iii) (1) Portfolio management: These swaps allow portfolio managers to add or subtract duration, adjust interest rate exposure and offset the risk posed by interest rate volatility

(2) Speculation: Because swaps require little capital up-front, they give fixed income traders a way to speculate on movements in interest rates while potentially avoiding the cost of long and short positions in Treasuries.

(iv)

Cash Reserve Ratio (CRR)
Statutory Liquidity Ratio (SLR)

(v) **Computation of Expected Return:**

$E(R_P)$ = Proportion of A × $E(R_A)$ + Proportion of B × $E(R_B)$

= 26(.5) + 22(.5) = 13 + 11 = 24%

Computation of Portfolio Risk

$$\sigma_p = \sqrt{\left(\sigma_A^2 \times W_A^2\right) + \left(\sigma_B^2 \times W_B^2\right)} + 2\left(\sigma_A \times W_A \times \sigma_B \times WB \times PAB\right)$$

$$= \sqrt{\left(20^2 \times 0.50^2\right) + \left(24^2 \times 0.50^2\right) + \left(2 \times 20 \times 0.50 \times 24 \times 0.50 \times 0.70\right)}$$

$$= \sqrt{100 + 144 + 168} = \sqrt{412} = 20.30\%$$

(vi) $20,00,000 \left(1+\frac{.12}{12}\right)^{36} > 20,00,000 \times c^{.36} - 20m$

20,00,000 [1.43076878 – 1.4333294] > – 20m

20,00,000 [– .00256062] > – 20m

or m > 56.06 ₹ per lac

If the continuous compounding facility exceeds ₹ 56.00 per lac, the investor will prefer monthly compounding.

(vii) Coefficient of variation :

A	**B**
$\frac{10}{12} = 0.83$	$\frac{15}{20} = 0.75$

X should close B since if has lower risk per unit of return.

Answer: 1 (b)

(i) False
(ii) True
(iii) False
(iv) True
(v) True

Section-B

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

2 (a) A mutual fund made an issue of 8,00000 units of ₹10 each on 01.04.2014. No entry load was charged. It made the following investments after meeting its issue expenses.

	₹
40,000 Equity Shares of ₹100 @ ₹160	**64,00,000**
At par:	
8% Government Securities	**6,40,000**
9% Debentures (unlisted)	**4,00,000**
10% Debentures (listed)	**4,00,000**
	78,40,000

During the year, dividend of ₹9,60,000 was received on equity shares. Interest on all types of debt securities was received as and when due. At the end of the year on 31.03.2015, equity shares and 10% debentures were quoted at 175% and 90% of the respective par value. Other investments were at par. The operating expenses during the year amounted to ₹4,00,000.

(i) Find out the Net Assets Value (NAV) per unit at the end of the year.
(ii) Find out the NAV if the Mutual Fund had distributed a dividend of ₹0.90 per unit during the year to the unit holders. [8]

2 (b) The current price (in Dec 2017) of sugar is ₹40 per kg. Sugar Mill SM expects to produce 200 MT of sugar in February 2016. 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 2016.
(ii) What is the position of SM in the futures and in the spot market? [6+2=8]
(1 MT = 1,000 kg.)

Answer: 2 (a)

Computation of closing net asset value

Given the total initial investment ₹78,40,000 out of issue proceeds of ₹ 80,00,000 therefore balance of ₹ 1,60,000 is considered as issue expenses.

Particulars	Opening value of investment	Capital Appreciation	Closing value of investment	Income
40000 Equity of ₹100 each at ₹ 160	64,00,000	6,00,000	70,00,000	9,60,000
8% Government securities	6,40,000	Nil	6,40,000	51,200
9% Debentures (Unlisted)	4,00,000	Nil	4,00,000	36,000
10% Debentures (Listed)	4,00,000	- 40,000	3,60,000	40,000
Total	78,40,000	5,60,000	8,40,000	10,87,200

Total Income = ₹ 10,87,000

Less: Opening Expenses during the period	=	₹ 40,00,000
Net Income		₹6,87,200
Net Fund Balance 84,00,000 + 6,87,200	=	₹ 90,87,200
Less: Dividend = 7,20,000 (8,00,000 × 0.90)	=	₹7,20,000
Net Fund balance (after dividend)	=	₹ 83,67,200
Net Asset Value (before considering dividend)	=	₹ 90,87,200
Net Asset Value	=	11.36
(After dividend)	$\frac{83,67,200}{8,00,000} = 10.46$	

Note: Closing market price of the investment have been quoted at a percentage of the face value (Assumption)

Answer: 2 (b)

Quantity to be hedged = $\frac{200\ MT}{10}$ = 20 futures

Hedging Strategy:

Sell 20 futures in Dec @

20×10×45×1000 =	9,00,000

Buy futures in Feb.

20×10×42×1000 =	8,40,000
Gain in Futures Market =	60,000

Price in spot market

42×10×20×1000 =	8,40,000
Effective price realized =	9,00,000

SM's position in futures market is short and since SM holds the underlying asset, it is long in the spot market.

3 (a) Explain four measures taken by the Central Government in the field of infrastructure financing. [8]

(b) (I) The data pertaining to 5 mutual funds is given below:

Fund	Return	Standard deviation (σ)	Beta (β)
J	13	6	1.50
K	9	2	0.90
L	11	3	1.20
M	15	5	0.80
N	12	4	1.10

Compute the reward- to- variability/volatility ratios and rank the funds, if the risk-free rate is 6%.

(II) What is the principal business of the following entities?

(i) Asset Financial Company (AFC)
(ii) Investment Company (IC)
(iii) Infrastructure Debt Fund – NBFC (IDF – NBFC) [5+3=8]

Answer: 3 (a)

Measures taken by the central govt. in the field of infrastructure financing:

(i) Public-Private partnership projects (PPP projects). Private sector is allowed to invest in infrastructure projects. PPP mechanism provides for built-in credit enhancement, buy back guarantee, escrow arrangements, substitution rights for lenders.

Documents and process for award of PPP projects have been standardized resulting in greater transparency.

(ii) Setting up of committees to simplify procedures. Many committees have been set up to facilitate private funding.

Committee on Infrastructure, Cabinet Committee on Infrastructure, PPP Appraisal Committee and Empowered Committee are some of them.

(iii) Viability gap funding.

Upto 20% of capital costs is funded by the Govt. for commercially unviable projects. The level of grant is the NPV of the gap between project cost and estimated revenue based on the pre-determined fee over the concession period.

Foreign Direct Investment (FDI):

100% financing through automatic route is allowed in certain sectors. (eg. construction projects, civil aviation).

Government approval route with limits in certain sectors (eg. airports, telecom, etc) is also permitted.

Setting up of India Infrastructure Finance Company Ltd (IIFCL):

Long term loans are provided directly to projects or refinanced to banks and other financial institutions.

Upto 20% of project cost is funded of cheaper rates. Relaxation of the take-out timings have also been made.

Setting up of Infrastructure Debt Funds (IDF):

Long term funding through Mutual Funds or NBFCs is being provided.

Overseas inflow of funds through these is being promoted by a lower withholding fax rate tapping retail investor base through Infrastructure Bonds. IFCI, IDFC, LIC, etc have been permitted to issue infrastructure bonds with benefits of tax exemption upto ₹ 20,000 NHAI, Railway Finance

Answer: 3 (b)

(I) For computing reward to variability/volatility ratio is

- Treynor's Ratio = $\left[\left(R_P - R_F\right) \div \beta_P\right]$
- Sharpe's Ratio = $\left[\left(R_P - R_F\right) \div \sigma_P\right]$

Ranking based on Sharpe's Ratio and Treynor Ratio method.

Fund	Under sharpe's mothod $\left[\left(R_P - R_F\right) \div \sigma_P\right]$	Ranking	Under Treynor method $\left[\left(R_P - R_F\right) \div \beta_P\right]$	
J	[(13 – 6) ÷ 6] = 1.17	5	[(13 – 6) ÷ 150] = 4.67	3
K	[(9 – 6) ÷ 2] = 1.50	3.5	[(9 – 6) ÷ 0.90] = 3.33	5
L	[(11 – 6) ÷ 3] = 1.67	2	[(11 – 6) ÷ 1.20] = 4.17	4
M	[(15 – 6) ÷ 5] = 1.80	1	[(15 – 6) ÷ 0.80] = 11.25	1
N	[(12 – 6) ÷ 4] = 1.50	3.5	[(12 – 6) ÷ 1.10] = 5.45	2

(II)

Company	Principal Business
(i) AFC	Financing of physical assets supporting productive/economic activity.
(ii) AFC	Acquisition of securities
(iii) IDF-NBFC	Raising of long term debt to finance infrastructure projects

4 (a) A Ltd has an expected return of 22% and standard deviation of 40%. B Ltd. has an expected return of 24% and standard deviation of 38%. A Ltd. has a beta of 0.86 and B Ltd. has a beta of 1.24. The correlation coefficient between the return of A Ltd. and B Ltd. is 0.72. The standard deviation of the market return is 20%. Suggest:

(i) Is investing in B Ltd. better than investing in A Ltd.?

(ii) If you invest 30% in B Ltd. and 70% in A Ltd., what is your expected rate of return and portfolio standard deviation?

(iii) What is the market portfolios expected rate of return and how much is the risk-free rate?

(iv) What is the beta of portfolio if A Ltd.'s weight is 70% and B Ltd.'s weight is 30%? [8]

(b) Compute Return under CAPM and the Average Return of the Portfolio from the following information:

Investment	Initial Price	Dividends	Market Price at the end of the year	Beta Risk Factor
A. Cement Ltd	25	2	50	0.80
Steel Ltd	35	2	60	0.70
Liquor Ltd	45	2	135	0.50
B. Govt. of India Bonds	1,000	140	1005	0.99

Risk Free Return = 14% [8]

Answer: 4 (a)

(i) Expected return of B Ltd. is 24% as compared to 22% of A Ltd.

Standard deviation of B Ltd. is 38% as compared to 40% of A Ltd.

In view of the above, A Ltd. has lower return and carried higher risk as compared to B Ltd. Hence, investing in B Ltd. is better than investing in A Ltd. but investing in both A Ltd. and B Ltd. will cause to yield the advantage due to diversification of portfolio.

(ii) R_{AB} = (0.22 × 0.7) + (0.24 × 0.3) = 22.6%

σ_{AB} = $(0.40^2 \times 0.7^2) + (0.38^2 + 0.3^2) + (2 \times 0.7 \times 0.3 \times 0.72 \times 0.40 \times 0.38)$

= (0.16 × 0.49) + (0.1444 × 0.09) + 0.0459648 = 0.078 + 0.0112996 + 0.0459648

= 0.1374

σ_{AB} = $\sqrt{\sigma^2_{AB}} = \sqrt{0.1374}$ = 0.37 or 37%

(iii) The risk-free rate will be the same for A and B Ltd. Their rates of return are given as follows:

R_A	= 22	= $R_f + (R_m - R_f)$ 0.86	
R_B	= 24	= $R_f + (R_m - R_f)$ 1.24	
$R_A - R_B$	= -2	= $(R_m - R_f)$ (-0.38)	$\Rightarrow R_m - R_f$ = -2/-0.38 = 5.26%
R_A	= 22	= R_f + (5.6) 0.86	$\Rightarrow R_f$ = 17.5%
R_B	= 24	= R_f + (5.26) 1.24	$\Rightarrow R_f$ = 17.5%
R_m – 17.5	= 5.26	$\Rightarrow R_m$ = 22.76%	

(iv) $\beta_{AB} = (\beta_A \times W_A) + (\beta_B \times W_B) = (0.86 \times 0.7) + (1.24 \times 0.3) = 0.974$

Answer: 4 (b)

Computation of Expected Return and Average Return

Securities	Cost	Dividend	Capital Gain	Expected Return=$R_f+\beta(R_m - R_f)$
Cement Limited	25	2	(50-25)= 25	[14+0.80 ×(26.33-14)]= 23.86%
Steel Limited	35	2	(60-35)= 25	[14+0.70 ×(26.33-14)]= 22.63%
Liquor Limited	45	2	(135-45)= 90	[14+0.50 ×(26.33-14)]= 20.17%
GOI Bonds	1,000	140	(1,005-1,000)= 5	[14+0.90 ×(26.33-14)]= 26.21%
Total	1,105	146	145	

Notes:

Return on Market Portfolio: Expected Return on Market Portfolio (Rm)

$$= \frac{\text{Dividends} + \text{Capital Gains}}{\text{Cost of the total Investment}} = \frac{146+145}{1{,}105 \times 100} = 26.33\%$$

Note: in the absence of return of a market Portfolio, it is assumed that portfolio containing one unit of the four securities listed above would result in a completely diversified portfolio, and therefore represent the Market Portfolio.

Portfolio's Expected Return based on CAPM:

(i) If the portfolio contains the above securities in equal proportion in terms of value-

Expected Return = (23.86% + 22.63% + 20.17% + 26.21%) ÷ 4 = 23.22%

(ii) If the Portfolio contains one unit of the above securities, then-

Securities	Cost	Expected Return	Product
Cement Limited	25	23.86%	25 × 23.86 = 596.25
Steel Limited	35	22.63%	35 × 22.63 = 792.05
Liquor Limited	45	20.17%	45 × 20.17 = 907.65
GOI Bonds	1,000	26.21%	1,000 × 26.21 = 26,210
Total	1,105		28,505.95
		Weighted Return	$\frac{28{,}505.95}{1{,}105}$ = 25.79%

Therefore, Expected Return from Portfolio (based on CAPM) = 25.79%

5. (a) Compute the theoretical price of the following securities for 6 months:

Securities of	A Ltd	B Ltd.	C Ltd.
Spot Price	**₹5,450**	**₹450**	**₹1,050**
Dividend Expected	**₹60**	**₹25**	**₹60**
Dividend Receivable in	**2 months**	**3 months**	**4 months**
6 month's futures contract rate	**₹5,510**	**₹490**	**₹1,070**

You may assume a risk-free interest rate of 9% p. a.

(i) What action do you recommend to benefit from futures contract?

(ii) What will be the impact on the theoretical forward prices if the risk-free interest rate is taken lower than 9%? [8+2=10]

5. (b) The equity share of VCC Ltd. Is quoted at ₹210. A 3-month call option is available at a premium of ₹6 per share and a 3-month put option is available at a premium of ₹5 per share. Ascertain the net pay offs to the option holder of a call option and a put option.

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

(ii) The share price on the exercise day is ₹ 200, 210, 220, 230, and 240.

Also indicate the price range at which the call and the put options may be gainfully exercised. **[6]**

Answer: 5 (a)

(i)

Securities of	**A Ltd.**	**BLtd.**	**CLtd.**
Spot Price (S_x)	₹ 5450	₹ 450	₹ 1050
Dividend Expected (D_F)	₹60	₹ 25	₹ 60
Dividend Receivable in (t)	2 months or 0.1667	3 months or 0.25	4 months or 0.333
Risk free interest rate (r)	9% or 0.09	9% or 0.09	9% or 0.09
Present value of Dividend (D_P)	DF × e^{rt} or DF ÷ e^{rt} ₹ 60 ÷ $e^{0.09\times0.1667}$ = ₹ 60 + $e^{0.015}$ = 60 ÷ 1.01511 = ₹ 59.107	DF × e^{rt} or DF ÷ e^{rt} ₹ 25 ÷ $e^{0.09\times0.25}$ = ₹ 25 + $e^{0.0225}$ = 25 ÷ 1.022755 = ₹ 24.444	DF × e^{rt} or DF ÷ e^{rt} ₹60 ÷ $e^{0.09\times0.333}$ = ₹ 60 + $e^{0.03}$ = 60 ÷ 1.030455 = ₹ 58.227
Adjusted Spot price = S_x - D_P	5450 – 59.107 = ₹ 5390.893	₹ 450 – ₹ 24.444 = ₹ 425.556	₹ 1050 – ₹ 58.227 = ₹ 991.773
Theoretical Forward Price (TFP_X)	5390.893 × $e^{0.09\times0.50}$ 5390.893 × $e^{0.045}$ 5390.893 × 1.04603 = ₹ 5639.0.36	425.556 × $e^{0.09\times0.50}$ 425.556 × $e^{0.045}$ 425.556 × 1.04603 =₹445.144	991.773×$e^{0.09\times0.50}$ 991.773×$e^{0.045}$ 991.773×1.04603 = ₹ 1037.424
6 months futures contract Rate (AFP_X)	₹ 5510	₹ 490	₹ 1070
TFP_x Vs. AFP_x	AFP_x is lower	AFP_x is higher	AFP_x is higher
Valuation in futures market	Under valued	Overvalued	Overvalued
Recommended Action	Sale Spot, buy future	Buy spot, sell future	Buy spot, sell future

(ii) A lower risk-free rate would mean a lower theoretical forward price and a lower adjusted spot price.

Answer: 5 (b)

Net pay-off for the holder of the call option					(₹)
Strike price on exercise day	200	210	220	230	240
Option exercise	No	No	No	Yes	Yes
Outflow (Strike price)	Nil	Nil	Nil	220	220
Outflow (premium)	6	6	6	6	6
Total outflow	6	6	6	226	226
Less: Inflow (sales proceeds)	--	--	--	230	240
Net pay off	- 6	- 6	- 6	4	14

Net pay-off for the holder of the put option					(₹)
Strike price on exercise day	200	210	220	230	240
Option exercise	Yes	Yes	No	No	No
Inflow (Strike price)	220	220	Nil	Nil	Nil
Less: Outflow (purchase price)	200	210	--	--	--
Less: Outflow (premium)	5	5	5	5	5
Net pay off	15	5	- 5	- 5	- 5

Analysis – The loss of the option holder is restricted to the amount of premium paid. The profit (positive pay off) depends on the difference between the strike price and the share price on the exercise day.

6. (a) The following market data is available:

Spot USD/JPY 116

Deposit rates p.a.	USD	JPY
3 months	4.50%	0.25%
6 months	5.00%	0.25%

Forward Rate Agreement (FRA) FOR Yen is Nil.

1. The 6&12 months LIBORS are 5% & 6.5% respectively. A bank is quoting 6/12 USD FRA at 6.50-6.75%. Is any arbitrage opportunity available?

Calculate profit in such case. [8]

6. (b) Explain the major sources for raising foreign currency finances. [8]

Answer: 6 (a)

6 Months Interest rate is 5% p.a. & 12 Months interest rate is 6.5% p.a.

Future value 12 month from now is a product of Future value 6 months from now and 6 Months Future value from after 6 Months.

$(1+0.065) = (1+0.05*6/12) \times (1+i_{6.6} *6/12)$

$i_{6.6} = [(1+0.065/1.025) – 1] *12/6$

6 Months forward 6 month rate is 7.80% p.a.

The Bank is quoting 6/12 USD FRA at 6.50 – 6.75%

Therefore there is an arbitrage Opportunity of earning interest @ 7.80% p.a. & Paying @ 6.75%

Borrow for 6 months, buy an FRA & invest for 12 months

To get $ 1.065 at the end of 12 months for $ 1 invested today

To pay $ 1.060# at the end of 12 months for every $ 1 Borrowed today

Net gain $ 0.005 i.e. risk less profit for every $ borrowed

(1+0.05/2) (1+.0675/2) = (1.05959) say 1.060

Answer: 6 (b)

Major sources for raising foreign currency finances are as follows:

(i) Foreign Currency Term Loan: Financial Institutions provide Foreign Currency Term Loan for meeting the foreign currency expenditures towards —

a. Import of Plant, Machinery and Equipment, and

b. Payment of Foreign Technical Know How Fees.

(ii) Export Credit Schemes: Export Credit Agencies finance exports of capital goods and related technical services.

Types of Export Credit:

- **Buyer's Credit**: Credit is provided directly to the Indian buyer, for purchase of capital goods and / or technical service from the overseas exporter.
- **Supplier's Credit**: Credit is provided to the overseas exporters, so that they can make available medium-term finance to Indian importers.

Regulatory: These agencies are formed by the Governments of the respective countries and follow certain consensus guidelines for supporting exports, under a convention known as the Berne Union.

(iii) External Commercial Borrowings (ECB): These include raising finance from international markets for plant and machinery imports. Funds can be raised subject to the terms and conditions stipulated by the Government of India, which imposes restrictions on the amount raised under automatic route. Funds raised above the stipulated limit would require the prior approval of the Ministry of Finance.

Types of ECB: External Commercial Borrowings include Bank Loans, Supplier's and Buyer's credit, fixed and floating rate bonds and Borrowing from private sector windows of Multilateral Financial Institutions such as International Finance Corporation.

(iv) Euro Issues: Subscription can come from any part of the world except India. This takes the following forms —

a. **Depository Receipts Mechanism:** An indirect equity investment, these are issued through Overseas Depository Banks, on behalf of the issuing Company.

b. **Foreign Currency/ Euro Convertible Issues:** Euro Convertible Issues is a debt with 'an option to convert it into equity.

c. **Debt Route:** Funds can also be raised by way of pure Debt Bonds.

(v) Issues in Foreign Domestic Markets: Capital can also be raised by issuing Exchange Traded instruments in Foreign Markets. These include ADRs, GDRs, etc.

7.(a) A company wish to acquire an asset costing ₹1,00,000. The company has an offer from a bank to lend @ 18%. The principal amount is repayable in 5 years end installments. A leasing Company has also submitted a proposal to the Company to acquire the asset on lease at yearly rentals of ₹ 280 per ₹ 1,000 of the assets value for 5 years payable at year end. The rate of depreciation of the asset allowable for tax purposes is 20% on W.D.V with no extra shift allowance. The salvage value of the asset at the end of 5 years period is estimated to be ₹1,000. Whether the Company should accept the proposal of Bank or leasing company, if the effective tax rate of the company is 50%? The Company discounts all its cash flows at 18%.

P.V factor at 18%

Year-end	1	2	3	4	5
PV factor @ 18%	0.847	0.718	0.609	0.516	0.437

[12]

7. (b) An investor is seeking the price to pay for a security, whose standard deviation is 4.00 per cent. The correlation coefficient for the security with the market is 0.8 and the market standard deviation is 2.2 per cent. The return from government securities is 5.2 per cent and from the market portfolio is 9.8 percent. The investor knows that, by calculating the required return, he can then determine the price to pay for the security. What is the required return on the security? [4]

Answer: 7 (a)

Borrowing Option:

(Amount in ₹)

Year	Principal	Interest @ 18% p.a.	Depreciation @ 20% on W.D.V.	Tax shield (3)+(4)×50%	Net cash flow (2)+(3)–(5)	P. V. Factor @18%	Discounted Cash Flows (6) × (7)
1 (₹)	2 (₹)	3 (₹)	4 (₹)	5 (₹)	6 (₹)	7 (₹)	8 (₹)
1	20,000	18,000	20,000	19,000	19,000	0.847	16,093
2	20,000	14,400	16,000	15,200	19,200	0.718	13,786
3	20,000	10,800	12,800	11,800	19,000	0.609	11,571
4	20,000	7,200	10,240	8,720	18,480	0.516	9,536
5	20,000	3,600	8,192	5,896	17,704	0.437	7,736

5	(1,000)	---	31,768*	15,884	(16,884)	0.437	(7,378)
Present value of Total Cash out flow							**51,350**

*WDV at the end of 5 years shall be ₹ 32,768. Deducting there from the salvage value of ₹ 1,000 the capital loss claim will be ₹ 31,768.

(II) Leasing Option:

(Amount in ₹)

Year	Lease Rentals (₹)	Tax shield (₹)	Net Cash Flows (₹)	P.V. Factor @ 18%	Discounted Cash Flows (₹)
1	28,000	14,000	14,000	0.847	11,858
2	28,000	14,000	14,000	0.718	10,052
3	28,000	14,000	14,000	0.609	8,526
4	28,000	14,000	14,000	0.516	7,224
5	28,000	14,000	14,000	0.437	6,118
Discounted after tax cost					**43,778**

Advise: By making analysis of both the alternatives, it is observed that the Present value of the Cash Outflow is lower in alternative II by ₹ 7,572 (i.e. 51,350 – 43,778). Hence it is suggested to acquire the asset on lease basis.

Answer: 7 (b) Beta Coefficient

$$= \frac{\text{Correlation coefficient between the security and the market} \times \text{Std.deviation of the security return}}{\text{Std.deviation of the market return}}$$

$$= \frac{(0.8)\times(0.04)}{(0.022)} = 1.454$$

Now, required return on the security : Rate of return on risk free security + beta coefficient (required return on market portfolio- rate of return on risk free security)

R = Rf + β (Rm - Rf) = 5.2+ 1.454 (9.8-5.2) =11.89%

8) Answer any four questions: [4×4=16]

(a) Write short note on constituents of Capital Market. [4]

(b) What Makes Commodity Trading attractive? [4]

(c) Write short notes on Green Shoe Option. [4]

(d) Describe the role of RBI as Governments' Debt Manager. [4]

(e) Features of Global Depository Receipt (GDR). [4]

Answer: 8 (a)

The following are the constituents of capital market:

- Investment Trust- Financial Institutions which collects savings from public and invest that amount in industrial securities. Example- Tata Investment Trust Pvt Ltd.
- Specialised Financial Institutions- These type of financial institutions provides long term finance to industries. example- Industrial Financial Corporation Of India (IFCI) Ltd.
- Insurance Company- Insurance Companies collect premium from policy holders and invest the amount in different industrial securities. example- Life Insurance Corporation Of India (LICI).
- Securities Market- Securities is a broader term which encompasses shares, debentures, bonds etc. the market where securities transactions are held is known as securities market. Securities market can be further classified into primary or new issue market and secondary or share market.

Answer: 8 (b)

The following points make commodity training attractive.

- ❖ A good low-risk portfolio diversifier
- ❖ A highly liquid asset class, acting as a counterweight to stocks, bonds and real estate.
- ❖ Less volatile, compared with, equities and bonds.
- ❖ Investors can leverage their investments and multiply potential earnings.
- ❖ Better risk-adjusted returns.
- ❖ A good hedge against any downturn in equities or bonds as there is little correlation with equity and bond markets.
- ❖ High co-relation with changes in inflation.
- ❖ No securities transaction tax levied.

Answer: 8 (c)

Green Shoe Option:

It is an option that allows the under writing of an IPO to sell additional shares if the demand is high. It can be understood as an option that allows the underwriter for a new issue to buy and resell additional shares up to certain pre-determined quantity.

Looking to the exceptional interest of investors in terms of over subscription of the issue certain provisions are made to issues additional shares or bonds to underwriters for distribution. The issuer authorizes for additional shares or bonds. In common Parlance, it is retention of oversubscription to a certain extent, it is a Special feature of EURO-issues.

In the Indian context, green shoe option has a limited connotation. SEBI guidelines governing public issues certain appropriate provisions for accepting over-subscriptions subject to a ceiling say, 15% of the offer made to public.

Answer: 8 (d)

In this role, RBI set policies, in consultation with the government and determine the operational aspects of rising money to help the government finance its requirements:

- Determine the size, tenure and nature (fixed or floating rate) of the loan
- Define the issuing process including holding of auctions
- Inform the public and potential investors about upcoming government loan auctions

The Reserve Bank also undertakes market development efforts, including enhanced secondary market trading and settlement mechanisms, authorization of primary dealers and improved transparency of issuing process to increase investor confidence, with the objective of broadening and deepening the government securities market.

Answer: 8 (e)

Features of GDRs are:

- ❖ Underlying shares: Each GDR may represent one or more underlying shares, which are physically held by the custodians appointed by the Depository Bank.
- ❖ Entry in Company's books: In the company's books, the Depository Bank's name appears as the holders of the shares.
- ❖ Returns: Depository gets the dividends from the company (in local currency) and distributes them to the holders of the Depository Receipts after converting into dollars at the going rate of the exchange.
- ❖ Negotiable: GDRs are exchangeable with the underlying share either at any time, or after the lapse of a particular period of time, generally 45 days.
- ❖ Globally marketed: GDRs are marketed globally without being confined to borders of any market or country as it can be traded in more than one country.
- ❖ Settlement: GDRs are settled through CEDEL & Euro-Clear International Book Entry Systems.