Scanner Appendix

CMA Final Group - III
(Solutions of June 2024)

Paper - 14 : Strategic Financial Management

Chapter - 1 : Investment Decisions, Project Planning and Control
2024 - June [2] (a)
1. Calculation of Annual Cash Inflow

Particulars	Y_1	Y_2	Y_3	Y_4	Y_5
Saving in Salary	7,50,000	7,50,000	7,50,000	7,50,000	7,50,000
Reduction in Project Delay	1,50,000	1,50,000	1,50,000	1,50,000	1,50,000
Reduction in Cost Sales	1,25,000	1,25,000	1,25,000	1,25,000	1,25,000
Gain Due to Timely Billing	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
Salary to Company Specialist	(5,00,000)	(5,00,000)	(5,00,000)	(5,00,000)	(5,00,000)
Maintenance and Operating Cost	(1,00,000)	(90,000)	(80,000)	(70,000)	(60,000)
Depreciation	(2,10,000)	(2,10,000)	(2,10,000)	(2,10,000)	(2,10,000)
Gain before Tax	3,15,000	3,25,000	3,35,000	3,45,000	3,55,000
Tax @ 30%	(94,500)	(97,500)	(1,00,500)	(1,03,500)	(1,06,500)
Gain after Tax	2,20,500	2,27,500	2,34,500	2,41,500	2,48,500
+ Depreciation	2,10,000	2,10,000	2,10,000	2,10,000	2,10,000
+ Maintenance and Operating Cost	1,00,000	90,000	80,000	70,000	60,000
- Maintenance Cost (advance)	(90,000)	(80,000)	(70,000)	(60,000)	—

| Net Cash Inflow | 4,40,500 | 4,47,500 | 4,54,500 | 4,61,500 | 5,18,500 |

At Y_0, Maintenance Cost Advance = (1,00,000)

- **Calculation of Present Value**

Particulars	Y_0	Y_1	Y_2	Y_3	Y_4	Y_5
Net C/F	(1,00,000)	4,40,500	4,47,500	4,54,500	4,61,500	5,18,500
PV Factors @ 15%	1	0.870	0.756	0.658	0.572	0.497
PV	(1,00,000)	3,83,235	3,38,310	2,99,061	2,63,978	2,57,695

Total = ` 14,42,279

- **Calculation of PV of Cash Outflow**

Particulars	`
Initial Investment (10 L × 80%)	8,00,000
Installation Expenses	50,000
Installment of Purchase Price (2,00,000 × 0.870)	1,74,000
Net Cash Outflow	10,24,000

NPV = 14,42,279 - 10,24,000

= ` 4,18,279

Advice: Since NPV is positive (` 4,18,279) BATECH Ltd. is advised to introduce artificial intelligence while making computers.

Chapter - 2 : Evaluation of Risky Proposals for Investment Decisions
2024 - June [3] (a)
As per Question Summary of Different Scenarios are as follows:

Particulars	Base Case	Best Case	Worst Case
WACC	9%	7.5%	10%
Cash Inflow	21,000 lakh at the end of Y_3	22,000 lakh at the end of Y_2	12,600 lakh at the end of Y_4

Cash Outflow	3,100 lakh/year for 1ˢᵗ 3 years	4,200 lakh at the end of 1ˢᵗ year & 5,200 lakh at end of 2ⁿᵈ year	2,100 lakh at the end of each year for 4 years

- **NPV of Base Case:** ` 8,365.90 Lakh
- **NPV under Best Case:**

Year	Cash Flow	PV Factor	PV
1	(4,200)	0.930	(3,906)
2	(22,000 - 5,200)	0.865	14,532
			` 10,626 lakh

- **NPV under Worst Case:**

Year	Cash Flow	PV Factor	PV
1-4	(2,100)	3.170	6,657.0
4	12,600	0.683	8,605.8
			1,948.8

- NPV is likely to vary within the range of ` 1,948.8 lakh to ` 1,0626 lakh.

Chapter - 3 : Leasing Decisions

2024 - June [2] (b)

1. **In order to find out the annual rent the cash flow from the assets must be evaluated as follows:**

Year	Depreciation	Insurance	Total	Tax @ 35%	Net Outflow
1	10,00,000	5,00,000	15,00,000	5,25,000	(25,000)
2	6,00,000	5,30,000	11,30,000	3,95,500	1,34,500
3	3,60,000	5,61,800	9,21,800	3,22,630	2,39,170
4	2,16,000	5,84,272	8,00,272	2,80,095	3,04,177
5	1,29,600	6,07,643	7,37,243	2,58,035	3,49,608
6	77,760	6,31,949	7,09,709	2,48,398	3,83,551

2. **Calculation of NPV**

Year	Cash Flow	PV Factor @ 8%	PV
0	(25,00,000)	1	(25,00,000)
1	(25,000)	0.926	(23,150)
2	1,34,500	0.857	1,15,267
3	2,39,170	0.794	1,89,901
4	3,04,177	0.735	2,23,570
5	3,49,608	0.681	2,38,083
6	3,83,551	0.630	2,41,637
NPV	6,90,824 (WN)	0.630	(4,35,219)
		NPV	30,50,089

Working Note:

•   **Calculation of Terminal Cash Inflow:**
    WDV of Asset = 1,16,640
    Sale Value = 10,00,000
    Profit on Sale = (10,00,000 - 1,16,640) = 8,83,360
    Tax = 8,83,360 × 35% = 3,09,176
    Cash-in-flow = 10,00,000 - 3,09,176
                  = 6,90,824

•   The firm should have a total recovery of ` 3,05,089 through lease rental. The annual lease rental after tax may be calculated as follows:

Lease Rental (After Tax) = $\dfrac{\text{Total Recovery Amount}}{\text{PVIFA @ 8\%}}$

$$= \dfrac{30,50,089}{4.623}$$

$$= \text{`} 6,59,764$$

Chapter - 4 : Securitization
2024 - June [8] (c)
Different type of securities issued by the special purpose vehicle (SPV) in securitization transactions are discussed below:
1. **Pass Through Certificates:**

In case of a pass-through certificate, payments to investors depend upon the cash flow from the assets backing such certificates. That is to say, as and when cash (principal and interest) is received from the original borrower by the SPV, it is passed on to the holders of certificates at regular intervals and the entire principal is returned with the retirement of the assets packed in the pool.

2. **Pay Through Certificates:**
   Pay through certificates has a multiple maturity structure depending upon the maturity pattern of underlying assets. Thus, the SPV can issue two or three different types of securities with different maturity patterns like short term, medium term and long term.
3. **Preferred Stock Certificates:**
   These are issued by a subsidiary company against the trade debts and consumer receivables of its parent company. In other words, subsidiary companies buy the trade debts and receivables of parent companies to enjoy liquidity.
4. **Asset Backed Commercial Papers:**
   This type of structure is mostly prevalent in mortgage-backed securities. Under this the SPV purchases portfolio of mortgages from different sources (various lending institution) and they are combined into a single group on the basis of interest rate, maturity dates and underlying collaterals.
5. **Interest Only Certificates:**
   In case of these certificates, payments are made to investors only from the interest incomes earned from the assets securitized.
6. **Principal Only Certificates:**
   As the very name suggest payment are made to the investors only from the repayment of principal by the original borrower. These certificates enable speculative dealings since the speculators know well that the interest rate movements would affect the bond value immediately.

Chapter - 6 : Equity and Bond Valuation and Evaluation of Performance
2024 - June [3] (b)

The present value per share of Raxon Ltd's equity will be ` 40.13

2024 - June [4] (a)
(i) **Conversion Value of Debenture:**
  = Market Price × Conversion Ratio Equity Share
  = 40 × 25
  = ` 1,000

(ii) **Market Conversion Price:**
  = $\dfrac{\text{Market Price of Debenture}}{\text{Conversion Ratio}} = \dfrac{1,200}{25} = 48$

(iii) **Conversion Premium per Share:**
  = Market Conversion Price - Market Price of Equity Share
  = 48 - 40
  = ` 8

(iv) **Ratio of Conversion Premium:**
  = $\dfrac{\text{Conversion Premium Per Share}}{\text{Market Price of Equity Share}} = \dfrac{8}{40} \times 100 = 20\%$

(v) **Premium Over Straight Value of Debentures:**
  = $\dfrac{\text{Market Price of Convertible Bond}}{\text{Straight Value of Bond}} - 1$
  = $\dfrac{1,200}{1,000} - 1 = 20\%$

(vi) **Favourable Income Difference Per Share:**
  = $\dfrac{\text{Coupon Interest from Debenture} - \text{Conversion Ratio} \times \text{Dividend Per Share}}{\text{Conversion Ratio}}$
  = $\dfrac{(80 - 25) \times 1}{25} = 2.2$

Chapter - 8 : Portfolio Theory and Practice
2024 - June [5] (a)
(i) **Calculation of Beta Sensitivity of Each Stock:**
  Beta $(\hat{a}) = \dfrac{\sigma s}{\sigma m} r\,(sm)$

AB Ltd. $= \frac{25}{15} \times 0.60 = 1$

BM Ltd. $= \frac{20}{15} \times 0.95 = 1.26/1.27$

CX Ltd. $= \frac{15}{15} \times 0.75 = 0.75$

(ii) **Calculation of Covariance Between Stocks:**
Co-variance $= â_A \times â_B \times óm^2$
A & B $= 1 \times 1.27 \times (15)^2 = 285.75$
B & C $= 1.27 \times 0.75 \times (15)^2 = 214.3125$
A & C $= 1 \times 0.75 \times (15)^2 = 168.75$

Chapter - 9 : Asset Pricing Theories
2024 - June [5] (b)
(i) **Sale of Security KN & Investment in Security MB:**

Security	Portfolio	Sensitivity Factor - 1	Product (F-1)	Sensitivity Factor - 1	Product (F-2)
MB	2,70,000	0.8	2,16,000	0.6	1,62,000
KN	(90,000)	1.50	(1,35,000)	1.1	99,000
Total	1,80,000		81,000		63,000

Portfolio Sensitivity (Product ÷ Weight)

(a) Factor - 1 $= \frac{81,000}{1,80,000} = 0.45$

(b) Factor - 2 $= \frac{63,000}{1,80,000} = 0.35$

(ii) **Borrowing at Risk Free Return Investment in Security MB & Security KN:**

Security	Portfolio	Sensitivity (F1)	Product (F1)	Sensitivity (F2)	Product (F2)
MB	5,40,000	0.80	4,32,000	0.6	3,24,000
KN	(1,80,000)	1.50	2,70,000	1.1	(1,98,000)
Risk Free	1,80,000	0	0	0	0
Total	1,80,000		1,62,000		1,26,000

Portfolio Sensitivity:

(a) Factor - 1: $= \dfrac{1,62,000}{1,80,000} = 0.9$

(b) Factor - 2: $= \dfrac{1,26,000}{1,80,000} = 0.7$

(iii) **Return Premium of Factor-2:**

Since security means return one generated by two factors, model if assumed that the model is line equation In two the:

$RS = PF + â_1x + â_2y$

$R_{MB} = 15\% = 10\% + 0.8x + 0.6y$

$5 = 0.8x + 0.6y$ _____ (i)

$R_{KN} = 20\% = 10\% + 1.5x + 1.1y$

$10 = 1.5x + 1.1y$ _____ (ii)

Multiply eq. (i) by 1.5 & e q. (ii) by 0.8 & subtract

$1.20x + 0.9y = 7.50$

$\underline{1.20x + 0.88y = \quad 8 \quad}$

$0.02y = -0.50$

$y = 25\%.$

Expects return of F - 2 = 25%.

Chapter - 10 : Portfolio Performance Evaluation and Portfolio Revision

2024 - June [4] (b)

(i)

Reward to Variability (Sharpe Ratio)

Mutual Fund	R_j	R_f	$(R_j - R_f)$	$ó_i$	Reward to Variability	Ranking
RE Fund	16	7	9	14.663	0.614	4
HE Fund	21	7	14	17.436	0.803	2
AE Fund	16	7	9	10.198	0.883	1
TE Fund	24	7	7	11.225	0.624	3

(ii)

Reward to Volatility (Treynor Ratio)

Mutual Fund	R_j	R_f	$(R_j - R_f)$	$\hat{a}_i$	Reward to Volatility	Ranking
RE Fund	16	7	9	0.734	12.262	4
HE Fund	21	7	14	0.891	15.713	2
AE Fund	16	7	9	0.494	18.219	1
TE Fund	24	7	7	0.550	12.727	3

Chapter - 13 : Financial Derivatives-Instruments for Risk Management
2024 - June [6] (a)
 (i) **Calculation of Portfolio Beta:**

Shares	No. of Shares	Market Price/Share	Market Value	Weight	$\hat{a}$	Value
D Ltd.	6	250	1,500	0.30	1.42	0.42
Q Ltd.	8	375	3,000	0.60	1.2	0.72
R Ltd.	4	125	500	0.10	1.6	0.16
			5,000			1.30

Portfolio Beta = 1.30
 (ii) **Calculation of Value of Risk Free Securities to be Acquired:**
Required Beta = 0.91
Let, the proportion of risk free securities for target Beta 0.91 lakh
0.91 = (0 × x) + (1.3x (1 − x))
0.91 = 1.30 − 1.30x
x   = 0.3
Shares to be disposed off to reduced beta (5,000 × 30%) = ` 1,500 lakh & risk free securities to be acquired.
 (iii) **Calculation of No. of Shares of Each Company to be Disposed Off:**

Total Value Disposed Off:
P Ltd: = 1,500 × 0.3 = 450 L
Q Ltd: = 1,500 × 0.6 = 900 L
R Ltd: = 1,500 × 0.1 = 150 L

Shares	Proportional Amount	MPS	No. of Shares Disposed (off)
P Ltd.	450 L	250	1.8
Q Ltd.	900 L	375	2.4
R Ltd.	150 L	125	1.2
	1,500 L		

2024 - June [6] (b)
Calculation of 3 month call option by using Binomial Method & Risk-Neutral Method:
(a) **Risk-Neutral Method:**
  • Calculation of Probability of High Price & Low Price

$$\text{Prob.} = \frac{S \times e^{rt} - \text{Low Price}}{\text{High Price} - \text{Low Price}}$$

$$= \frac{(432 \times 1.0228) - 390}{537 - 390}$$

High Price = 0.353
Low Price = 1 − 0.353 = 0.647

Calculation of Expected Value of Option at Expiry Date:

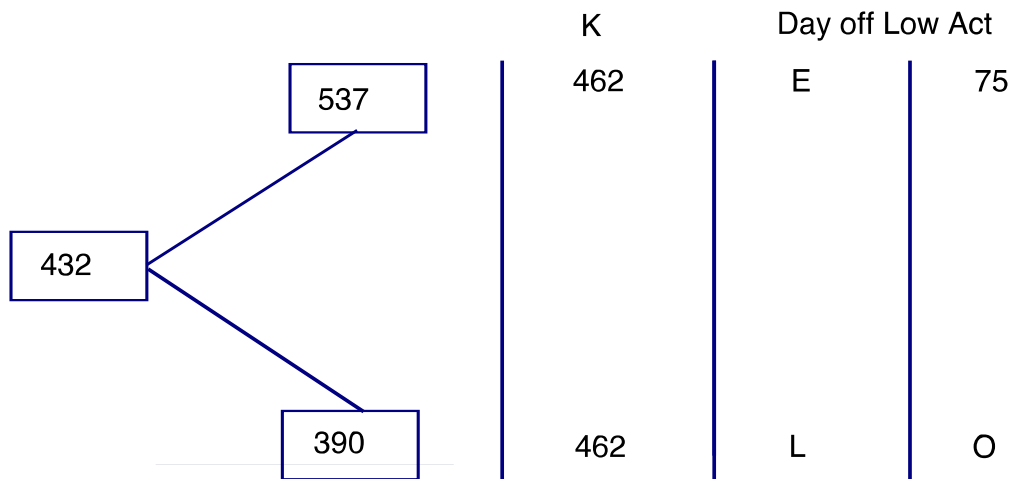| Spot Price	Strike	Action	Payoff	Probability	Expected Payoff
537	462	E	75	0.353	26.475
390	462	L	0	0.647	0
					26.475

  • Option Price at T = 0

$$\text{Value} = 26.475 \times \frac{1}{1.0228}$$

$$= 25.8848$$

(b) **Binomial Method:**

Probability of High Price = 0.353
Probability of Low Price = 0.647

Binomial Tree:

		K	Day off Low Act

| | | 462 | E | 75 |

537

432

390 | 462 | L | O

Calculation of value of option call:

$$C_0 = \frac{(75 \times 0.353) + (0 \times 0.647)}{1.0228}$$

= 25.8848

So, here is calculated value of call option under both more issue.

Chapter - 14 : The International Financial Environment
2024 - June [8] (b)

The features of Global Depository Receipt (GDR) are given below:

1. **Underlying Shares:**

   Each GDR may represent one or more underlying share, which are physically held by the Custodian appointed by the Depository Bank.

2. **Entry in Company's Books:**

   In the Company's books, the Depository Bank's name appears as the holder of the shares.

3. **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 exchange.

4. **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.

5. **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.

6. **Settlement:**

   GDRs are settled through CEDEL, & Euro Clear International Book Entry Systems.

Chapter - 15 : Foreign Exchange Market
2024 - June [7] (b)

(i)	Proceeds of Exports in INR = ` 10 Million. Position of Inflows under three Currencies will be as follows:			
	Currency	Invoice at Spot Rate	Expected Rate after three Months	Conversion in INR after three Months
	$	$ 121802.680	` 83.537	` 1,01,75,030.48
	€	€ 129617.628	` 78.307	` 1,01,49,967.60

	£	£ 99354.198	` 101.908	` 1,01,24,987.61

(ii)	Payment of Import in INR = ` 5 Million. Position of Outflows under three Currencies will be as follows:			
	Currency	Invoice at Spot Rate	Expected Rate after three Months	Conversion in INR after three Months
	$	$ 60827.251	` 85.077	` 51,75,000.03
	€	€ 64766.839	` 79.516	` 51,49,999.97
	£	£ 49627.792	` 103.269	` 51,25,012.45

Recommendation:

Since cash inflow is highest (` 1,01,75,030.48) in case of $, the invoicing for proceeds of export should be in $ (Dollars Currency). Further, Since cash outflow is least (` 51,25,012.45) in case of £, the invoicing for payment of import should in £ (Pound Sterling Currency).

Chapter - 16 : Foreign Exchange Risk Management
2024 - June [7] (a)
 (i) Forward Cover:
   3 Month Forward Rate = ` 0.6359 / JY
   Accordingly INR required for JY 1,00,00,000 = ` 63.59 Lakh
 (ii) Option Cover:
   To purchase JY 1,00,00,000, SONTEX LTD. shall enter into a Put option @ JY 1.5855 / INR.
   Accordingly Outflow in INR = ` 63,07,159
   Add Premium = ` 4,05,978
   Total Cash Outflow = ` 67,13,137

Decision:

Since the Outflow of Cash (` 63,59,000) is the lowest in case of FORWARD COVER, the same would be most advantageous to SONTEX Ltd.

Chapter - 17 : Digital Finance

2024 - June [8] (a)
The advantages of Digital Financial Services are discussed below:

1. **Improved Customer experience:**
    Digital technologies have changed the way how financial services were provided. Now, Customers enjoy a whole lot of information before the services can be availed. Also, there is the possibility of comparing products and services of different producers and providers before placing an order.

2. **Ease of access:**
    Because of intervention of digital technology, services can be accessed very easily. The customers need not to visit the branches of the service providers anymore. Everything is possible with click of a mouse.

3. **Streamlined operations:**
    Financial services in this digital era is much streamlined. Everything is so well planned. For example, in case of insurance services, from enquiry to customer on boarding, claim management to settlement, everything is now being done online and with minimum requirement of submission of physical documents. Even KYC is also being done electronically.

4. **Reduction in cost of delivery:**
    Due to enhanced use of digital technology, companies are operating with minimum physical facilities and manpower. This has contributed heavily towards the profitability of the organizations. This saving is being shared with the Customers in the form of reduction in fees.

Chapter - 18 : Objective Questions
2024 - June [1] {C}

(i)   (b)
(ii)   (b)
(iii)   (b)
(iv)   (c)
(v)   (b)
(vi)   (c)
(vii)   (a)
(viii) (c)

(ix)   (b)
(x)   (b)
(xi)   (c)
(xii) (a)
(xiii) (c)
(xiv) (d)
(xv)   (b)

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