The WAY CA test series – SEPT 2025

CA FINAL | **P2 : ADVANCED FINANCIAL MANGEMENT** | **21.07.2025**

[SYLLABUS : FOREX, RISK MANAGEMENT]

TIME : 2 HRS | **TOTAL : 70 MARKS**

PART I : MCQ ANSWERS — 14 MARKS

Case Study – 1

1. Option (a) 63.6175
2. Option (c) 1,56,500
3. Option (c) 30,000
4. Option (b) 96
5. Option (d) ₹ 64.3150
6. Option (b) ₹ 28.8912
7. Option (c) Rs. 2,28,250

PART II : DESCRIPTIVE SOLUTIONS 56 MARKS

Question : 1(a) **6 Marks**

Working Notes:

(1) Security X

Return (1)	Prob.(2)	(1)x(2)	Dev	Dev.^{2}	Dev.^{2}x Prob
6	0.10	0.60	-2	4	0.40
7	0.25	1.75	1	1	0.25
8	0.30	2.40	0	0	0
9	0.25	2.25	1	1	0.25
10	0.10	1.00	2	4	0.40
		8.00			1.30

Expected Return (R_x) = 8.00%

Variance (σ_x^2) = 1.30

Standard Deviation (σ_x) = $\sqrt{1.30}$ = **1.14**

(2) Security Y

Return(1)	Prob. (2)	(1) x (2)	Dev.	Dev.^{2}	Dev.^{2} x Prob
4	0.10	0.40	-4	16	1.60
6	0.20	1.20	-2	4	0.80
8	0.40	3.20	0	0	0
10	0.20	2.00	2	4	0.80
12	0.10	1.20	4	16	1.60
		8.00			4.80

Expected Return (R_Y) = 8.00%

Variance (σ_Y^2) = 4.80

Standard Deviation (σ_Y) = $\sqrt{4.80}$ = 2.19

	No. of Days	X	Y
Amount Transferred		₹ 110000000	₹ 110000000
Maturity Proceeds of Fixed Deposit		₹ 6342560	₹ 6342560
Amount available in bank account		₹ 116342560	₹ 116342560
Minimum balance to be kept		₹ 1000	₹ 1000
Available amount which can be used		₹ 116341560	₹ 116341560
for potential investment for 4 days			
Maximum loss for 4 days at 99% level	4	₹ 116341560	₹ 116341560
Maximum loss for 1 day at 99% level = Maximum loss for 4 days $\sqrt{\text{No. of days}}$ = 116341560/ $\sqrt{4}$	1	₹ 58170780	₹ 58170780
Z Score at 99% level		2.33	2.33
Volatility in terms of ₹ (Maximum Loss/Z Score at 99% Level)		₹ 24966000	₹ 24966000
Standard Deviation		0.0114	0.0219
Maximum Investment (Volatility in terms of ₹ / SD)		₹ 2190000000	₹1140000000

Recommendation: Position should be taken in X.

Question : 1(b) **4 Marks**

The financial risk can be evaluated from different point of views as follows:

(a) From stakeholder's point of view:

Major stakeholders of a business are equity shareholders and they view financial gearing i.e. ratio of debt in capital structure of company as risk since in event of winding up of a company they will be least prioritized. Even for a lender, existing gearing is also a risk since company having high gearing faces more risk in default of payment of interest and principal repayment.

(b) From Company's point of view:

if a company borrows excessively or lend to someone who defaults, then it can be forced to go into liquidation.

(c) From Government's point of view:

The financial risk can be viewed as failure of any bank or (like Lehman Brothers) down grading of any financial institution leading to spread of distrust among society at large. Even this risk also includes wilful defaulters. This can also be extended to sovereign debt crisis.

Question : 1(c) **4 Marks**

VAR is a measure of risk of investment. Given the normal market condition in a set of period, say, one day it estimates how much an investment might lose. This investment can be a portfolio, capital investment or foreign exchange etc., VAR answers two basic questions -

i. What is worst case scenario?

ii. What will be loss?

It was first applied in 1922 in New York Stock Exchange, entered the financial world in 1990s and become world's most widely used measure of financial risk.

Features of VAR

Following are main features of VAR

i. Components of Calculations: VAR calculation is based on following three components :
   a. Time Period
   b. Confidence Level – Generally 95% and 99%
   c. Loss in percentage or in amount

ii. Statistical Method: It is a type of statistical tool based on Standard Deviation.

iii. Time Horizon: VAR can be applied for different time horizons say one day, one week, one month and so on.

iv. Probability: Assuming the values are normally attributed, probability of maximum loss can be predicted.

v. Control Risk: Risk can be controlled by selling limits for maximum loss.

vi. Z Score: Z Score indicates how many standard Deviations is away from Mean value of a population. When it is multiplied with Standard Deviation it provides Application of VAR.

VAR can be applied

i. to measure the maximum possible loss on any portfolio or a trading position.

ii. as a benchmark for performance measurement of any operation or trading.

iii. to fix limits for individuals dealing in front office of a treasury department.

iv. to enable the management to decide the trading strategies.

v. as a tool for Asset and Liability Management especially in banks.

Question : 2(a) **5 Marks**

XYZ plc shall be ready to undertake this swap arrangement only if it receives the interest on the surplus funds if invested on individual basis as follows:

	Interest	Amt. after 91 days	Conversion in £
Holland € 1,450,000 x 0.02 x 91/360 =	€ 7,330.56	€ 1,457,330.56	£1,004,829.42 (1,457,330.56 x 0.6895)
Switzerland CHF 1,996,154 x 0.005 x 91/360 =	CHF 2,522.92	CHF 1,998,676.92	£865,303.02 (1,998,676.92÷2.3098)
UK £ 150,000 x 0.01 x 91/360 =	£ 379.17	£ 150,379.17	£ 150,379.17
Total GBP at 91 days			**£ 2,020,511.61**

Swap to Sterling

Sell € 1,450,000 (Spot at 0.6858) buy £	£ 994,410.00
Sell CHF 1,996,154 (Spot at 2.3326) buy £	£ 855,763.53

Independent GBP amount	£ 150,000.00
	£ 2,000,173.53
Amount accrued on Individual Basis (Principal + Interest)	£ 2,020,511.61
Interest Required	£ 20,338.08
Required Interest Rate on Per Annuam Basis $\frac{20,338.08}{20,00,173.53} \times \frac{360}{91} \times 100$	4.023%

Thus, the minimum rate that should be offered is 4.023%.

Question : 2(b) **5 Marks**

Yield from Investment in Equity Trading Index in Japan

Conversion of GBP 200 million in JPY (148.0002)	JPY 29600.04 Million
Dividend Income	JPY 1182.00 Million
Stock Lending	JPY 10.00 Million
Investment Value at End	JPY 29008.0392 Million
Amount available at End	JPY 30200.0392 Million
Forward Rate of 30.06.2019	JPY 150/ GBP
Amount to be Remitted back to London	GBP 201.3336 Million
Gain = GBP 201.3336 – GBP 200	**GBP 1.3336 Million**

(2) Fixed Income Desk of US

Conversion of GBP 200 million in USD (1.28000)	USD 256.00 Million
Add: Interest @ 5% p.a. for 6 months	USD 6.40 Million
Amount available at End	USD 262.40 Million
Forward Rate of 30.06.2019	USD 1.30331/ GBP
Amount to be Remitted back to London	GBP 201.3335 Million
Gain = GBP 201.3335 – GBP 200	**GBP 1.3335 Million**

Decision: Investment in Japanese Yen is preferred over the investment in USD G- Sec as there is a marginal gain. From a risk perspective, the company should go for Option-2 Investment in G-Secs as they are risk free or

The equivalent amount at the end of 6 months shall be almost same in both the options. The bank can go for any of the options.

However, from risk perspective, the investment in fixed income desk of US is more beneficial as the chance of variation in fixed income securities is less as compared to Equity Desk.

Question : 2(c) **4 Marks**

Option I (To finance the purchases by availing loan at 18% per annum):

Cost of equipment	**₹ in lakhs**
3400 lakh yen at ₹ 100 = 340 yen	1,000.00
Add: Interest at 4.5% I Quarter	45.00
Add: Interest at 4.5% II Quarter (on ₹ 1045 lakhs)	47.03
Total outflow in Rupees	1,092.03
Alternatively, interest may also be calculated on compounded basis, i.e., ₹ 1000 × $[1.045]^2$	₹ 1,092.03

Option II (To accept the offer from foreign branch):

Cost of letter of credit	
At 1 % on 3400 lakhs yen at ₹ 100 = 340 yen	₹ 10.00 lakhs
Add: Interest for 2 Quarters	₹ 0.90 lakhs
(A)	₹ 10.90 lakhs
Payment at the end of 180 days:	
Cost	3400.00 lakhs yen
Interest at 2% p.a. [3400 × 2/100 × 180/365]	33.53 lakhs yen
	3433.53 lakhs yen
Conversion at ₹ 100 = 345 yen [3433.53 / 345 ×100] (B)	₹ 995.23 lakhs
Total Cost: (A) + (B)	₹1006.13 lakhs

Question : 3 (a) **8 Marks**

£ Exposure

Since Columbus has a £ receipt (£ 138,000) and payment of (£ 480,000) maturing at the same time i.e. 3 months, it can match them against each other leaving a net liability of £ 342,000 to be hedged

(i) Forward market hedge

Buy 3 months' forward contract accordingly, amount payable after 3 months will be = £ 342,000 / 0.9520 = US $ 359,244

(ii) Money market hedge

To pay £ after 3 months' Columbus shall requires to borrow in US$ and translate to £ and then deposit in £.

For payment of £ 342,000 in 3 months (@2.5% interest) amount required to be deposited now (£ 342,000 ÷ 1.025) = £ 333,658

With spot rate of 0.9830 the US$ loan needed will be = US$ 339,429

Loan repayable after 3 months (@3.25% interest) will be = US$ 350,460

In this case the money market hedge is a cheaper option.

€ Receipt

Amount to be hedged = € 590,000

(i) Forward market hedge

Sell 4 months' forward contract accordingly, amount

receivable after 4 months will be (€ 590,000 x1.9510) = US$ 1,151,090

(ii) Money market hedge

For money market hedge Columbus shall borrow in € and then translate to US$ and deposit in US$

For receipt of € 590,000 in 4 months (@ 5.33% interest) amount required to be borrowed now (€590,000 ÷ 1.0533) = € 560,144

With spot rate of 1.8890 the US$ deposit will be = US$ 1,058,113

Deposit amount will increase over 4 months (@3.83% interest) will be

= US$ 1,098,639

In this case, more will be received in US$ under the forward hedge.

Question : 3 (b) **6 Marks**

To evaluate which option would be better we shall compute the outflow under each option as follows:

(i) Pay Immediately availing discount

Particulars	
Spot Rate	₹ 66.98
Amount required in US$ [US$8 Milion 1−0.01] / [₹ 66.98 x US$ 7.92 Million]	US$ 7.92 Million
Amount required in ₹	₹ 53.0482 Crore
Cash Available	₹ 0.2500 Crore
Loan required	₹52.7982 Crore
Interest for 90 days @ 9%	₹ 1.1880 Crore
Total Outflow	₹ 53.9862 Crore

(ii) Pay the supplier on 60th day and avail bank's loan (after utilizing cash) for 30 days.

Particulars	
Applicable Forward Rate	₹ 67.16
Amount required in [₹ 67.16 x US$ 8 Million]	₹ 53.7280 Crore
Loan required [₹ 53.7280 Crore – ₹ 0.25 Crore]	₹ 53.4780 Crore
Interest for 30 days @ 9%	₹ 0.4011 Crore
	₹ 53.8791 Crore

Interest earned on Cash for 60 days @ 4%	₹ 0.0017 Crore
Total Outflow	₹ 53.8774 Crore

(iii) Avail supplier offer of 90 days credit and utilize cash available

Particulars	
Amount Payable	US$ 8 Million
Interest for 30 days @ 8%	US$ 0.0533 Million
Amount required in ₹	US$ 8.0533 Million
Applicable Forward Rate	₹ 68.03
Amount required in ₹ [₹ 68.03 x US$ 8.0533 Million]	₹ 54.7866 Crore
Cash Available	₹ 0.2500 Crore
Interest earned on Cash for 90 days @ 4%	₹ 0.0025 Crore
Total Outflow	₹ 54.5341 Crore

Decision: Cash outflow is least in case of Option (ii) same should be opted for.

Question : 4 (a) **6 Marks**

(i) **Forward contract:** Rupees needed in 90 days = $5,00,000 × ₹73 = ₹3,65,00,000

(ii) **Money market hedge:**

Amount in $ to be invested = 5,00,000/1.0250 = $4,87,805

Amount of ₹ needed to convert into $ = 4,87,805 × 71 = ₹3,46,34,155

Interest and principal on ₹ loan after 90 days

= ₹3,46,34,155 × 1.06 = ₹3,67,12,204

(iii) Call option:

Expected Spot rate (1)	Prem./unit (2)	Exercise Option (3)	Total price per unit (4)	Total price for $5,00,000 × (4) (5)	Prob. Pi (6)	Pixi (5) × (6) = (7)
72.50	0.10	No	72.60	3,63,00,000	0.25	90,75,000
73.00	0.10	No	73.10	3,65,50,000	0.50	1,82,75,000
74.50	0.10	Yes	74.10*	3,70,50,000	0.25	92,62,500
						3,66,12,500
Add: Interest on Premium @ 6% (50,000 × 6%)						3,000
						₹3,66,15,500

* (₹74 + ₹0.10)

(iv) No hedge option:

Expected Future spot rate	₹ needed Xi	Prob. Pi	Pi xi
72.50	3,62,50,000	0.25	90,62,500
73.00	3,65,00,000	0.50	1,82,50,000
74.50	3,72,50,000	0.25	93,12,500
			₹3,66,25,000

Decision: Forward Contract Strategy is most preferable strategy because it requires the least amount to arrange $5,00,000.

Question : 4 (b) **8 Marks**

(1) Profit at current exchange rates

2400 [€ 500 × ₹51.50 – (S$ 800 × ₹27.25 + ₹1,000 + ₹1,500)]

2400 [₹25,750 - ₹24,300]

= ₹34,80,000

Profit after change in exchange rates

2400[€500 × ₹52 – (S$ 800 × ₹27.75 + ₹1000 + ₹1500)]

2400[₹26,000 - ₹24,700]

= ₹31,20,000

Loss due to Transaction Exposure

₹34,80,000 – ₹31,20,000

= ₹3,60,000

(2) Profit based on new exchange rates

2400[₹25,000 - (800 × ₹27.15 + ₹1,000 + ₹1,500)]

2400[₹25,000 - ₹24,220]

= ₹18,72,000

Profit after change in exchange rates at the end of six months

2400 [₹25,000 - (800 × ₹27.75 + ₹1,000 + ₹1,500)]

2400 [₹25,000 - ₹24,700]

= ₹7,20,000

Decline in profit due to transaction exposure

₹18,72,000 - ₹7,20,000

= ₹11,52,000

Current price of each unit in € = ₹25,000 / ₹51.50 = €485.44

Price after change in Exch. Rate = ₹25,000 / ₹51.75 = €483.09

Change in Price due to change in Exch. Rate

€485.44 - €483.09

= €2.35 or (-) 0.48%

Price elasticity of demand = 1.5

Increase in demand due to fall in price 0.48 × 1.5 = 0.72%

Size of increased order = 2400 ×1.0072 = 2417 Units

Profit = 2417 [₹25,000 – (800 × ₹27.75 + ₹1,000 + ₹1,500)] = ₹7,25,100

Therefore, decrease in profit due to operating exposure ₹18,72,000 – ₹7,25,100 = ₹11,46,900

Alternatively, if it is assumed that Fixed Cost shall not be changed with change in units then answer will be as follows:

Fixed Cost = 2400[₹1,000] = ₹24,00,000

Profit = 2417 [₹25,000 – (800 × ₹27.75 + ₹1,500)] – ₹24,00,000

= 2417 (₹1,300) – ₹24,00,000 = ₹7,42,100

Therefore, decrease in profit due to operating exposure = ₹18,72,000 – ₹7,42,100 = ₹11,29,900

ALL THE BEST

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