



Suggested Solution

Test-2



Case Scenario-I		
(i)	(b)	-5.25%
(ii)	(C)	3,25,993
(iii)	(a)	1.30%
(iv)	(a)	7300

Hint:

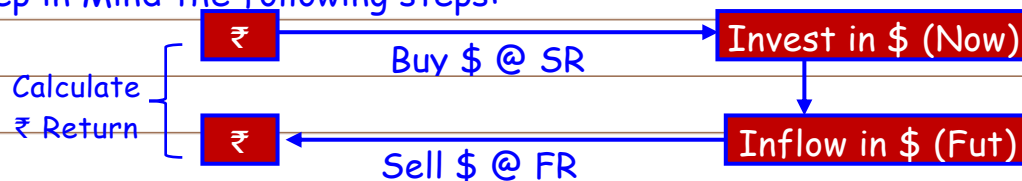
(i) Return for a US investors:

- Calculate return of S & P Index

- Return = $\frac{\text{Value at end} - \text{value at beg}}{\text{value at beg}}$

$$= \frac{1948 - 2056}{2056} \times 100 = -5.25 \% \text{ (i.e., Loss of 5.25\%)}$$

Keep in Mind the following steps:



(ii) & (iii) Holding period return of Mr. X (in ₹):

(a) **Initial investment** = ₹ 2.50 cr.

(b) **Inflow at end (in ₹)**

Investment in \$ = $\frac{2,50,00,000}{72.25} = \$3,46,020.76$

Price of S&P = 2056

Quantity Bought = $\frac{3,46,020.76}{2056} = 168.298 \text{ units}$

Sale value = 168.298 units @ 1948
= \$ 3,27,844.57

Equivalent ₹ at 1Y FR = ₹ 3,27,844.57 × 77.25

[Inflow at 1y end] = ₹ 2,53,25,993

Return = 2,53,25,993 - 2,50,00,000
= ₹3,25,993



$$\begin{aligned}
 \text{(C) Return in ₹ currency} &= \frac{\text{Inflow at end} - \text{Investment}}{\text{Investment}} \times 100 \\
 &= \frac{2,53,25,993 - 250,00,000}{250,00,000} \times 100 \\
 &= 1.304\%
 \end{aligned}$$

(iii) Indian market Index value on 1.1.2012

- At indifference Point, return in Indian market should also be 1.304%% (i.e., equal to return from investment in S&P)
- Index value = $x + (1.304\% \text{ of } x) = 7395$
- $x = 7300$

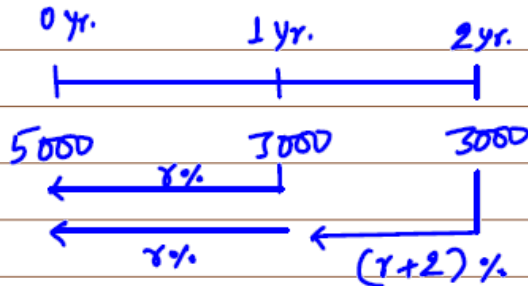
Case Scenario-II

	Answer	Explanation
(i)	(a) Long Position	Mr. B adopts a long position , buying shares with the expectation that their value will increase, which aligns with his anticipation of an upward movement in the stock price.
(ii)	(c) ₹60,000	The initial price per share is ₹3000 and he buys 100 shares. With a 20% margin, the total amount he needs initially is 20% of ₹3,00,000, which is ₹60,000.
(iii)	(b) Sell Trade	Mr. B exits his position by selling the shares at a higher price than the purchase price on the same day, thus realizing a profit from the increase in share price.
(iv)	(b) ₹3,120	The exit price is 4% more than the purchase price. 4% of ₹3000 is ₹120, so the exit price when he sells the shares is ₹3000 + ₹120 = ₹3120.
(v)	(d) 20%	Total profit = $120 \times 100 = 12,000$ Total investment in the form of margin = ₹60,000 The return is $12,000 / 60,000 \times 100 = 20\%$



Part II (Descriptive Questions)

Question-1 Solution:



Let,

1st year Interest rate = r%
and second year Interest rate = (r+2)%

Now,

$$PV = 5000 = \frac{3000}{1 + \frac{r}{100}} + \frac{3000}{\left[1 + \frac{r+2}{100}\right] \left[1 + \frac{r}{100}\right]}$$

Assume, $r = 12\%$

$$\begin{aligned} PV &= \frac{3000}{1 + 0.12} + \frac{3000}{(1 + 0.14)(1 + 0.12)} \\ &= 2,678.57 + 2,349.62 \\ &= 5028 \end{aligned}$$

Slightly higher than 5000.

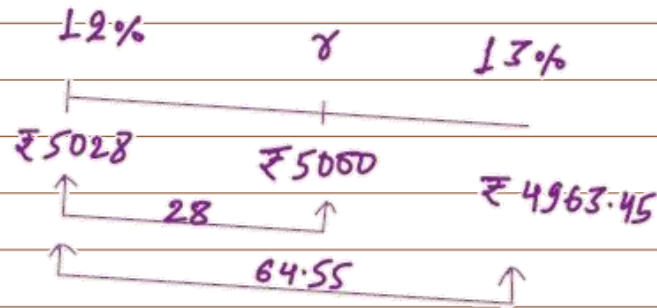
To get lower Present Value, slightly increase the interest rate

Assume, $r = 13\%$

$$\begin{aligned} PV &= \frac{3000}{1 + 0.13} + \frac{3000}{(1 + 0.15)(1 + 0.13)} \\ &= 2,654.87 + 2308.58 \\ &= 4963.45 \end{aligned}$$



Using Interpolation,



$\Delta ₹ \Rightarrow \Delta \gamma\%$

i.e. $₹(5028 - 4963.45) \Rightarrow (13 - 12)\%$

or, $₹64.55 \Rightarrow 1\%$

or, $₹28 \Rightarrow \frac{1}{64.55} \times 28 = 0.43$

$\therefore \gamma = 12 + 0.43 = 12.43\%$

Interest rate for the first year = 12.43%

Interest rate for the second year = 14.43%

Question -2 Solution:

(i) Exchange Position:

Swiss franc (CHF)

Particulars	Purchase	Sale
Over bought position	50,000	
Purchased a bill on Zurich	70,000	
Sold forward TT		49,000
Forward purchase contract cancelled		41,000
Remitted by TT		75,000
Draft on Zurich cancelled	40,000	
Total	160,000	165,000

Closing balance (Oversold) = 165,000 - 160,000 = 5,000



(ii) Nostro A/C Balance:

"Amount in CHF"

	Credit	Debit
Balance	100,000	
Remittance by TT		75,000
Total	100,000	75,000

Closing balance (Credit) = 1,00,000 - 75,000 = CHF 25,000

(iii) Action:

(a) The Bank has to buy spot TT on Zurich 5,000 to increase the balance in Nostro account to CHF 30,000.

This would also decrease the oversold position.

New Balance: Nostro A/C = 25000 + 5000
= 30,000 (objective achieved)

New Balance: Exchange position = -5000 + 5000 = NIL

(b) Purchase Forward TT for CHF 10,000

New balance (Existing position) = (0 + 10,000)
= 10,000 (Objective achieved)

Summary:

(a) purchase spot TT for CHF 5000 &

(b) Purchase Forward TT for CHF 10,000



QUESTION –3 Solution:

(i) Inflow to Exporter from sell of \$ 200,000 under original contract.
= ₹ (75.40 × 500,000) = 377,00,000

(ii) Interest on outlay of fund

Bank sell \$ @	75.22
Bank buys \$ @	75.40
Outflow to Bank per \$	₹ 0.18
Total outflow on \$ 500,000	₹ 90,000

(0.18 × 500,000)

Period = 30th Nov to 31st Dec = 31 days

Interest = $[90,000 \times 18\% \times \frac{31}{365}] = 1376$

Bank recovers this interest from customer.

Hence, outflow to customer = ₹ 1376

(iii) Swap loss of Bank to be recovered from Exporter:

1M FR on 28th Nov:

\$1 = ₹ 75.22 / 75.27

+0.10 + 0.15

\$1 = ₹ 75.32 **₹ 75.42**

Bank sell \$ @	₹ 75.22
Bank buys \$ @	₹ 75.42
Loss per \$	₹ 0.20
Total Loss on \$ 500,000	₹ 1,00,000

It should be recovered from the exporter.

Hence, outflow to exporter = ₹ 1,00,000

(iv) Net Inflow to Exporter = 377,00,000 - 1376 - 100,000
= ₹ 3,75,98,624



QUESTION - 4 Solution:

(i) NAV of the Fund

$$= \frac{₹ 4,00,000 + ₹ 93,72,000 + ₹ 72,24,000 + ₹ 3,03,06,000}{6,00,000}$$

$$= \frac{₹ 4,73,02,000}{6,00,000} = ₹ 78.84 \text{ per unit}$$

(ii) Revised Position of Fund:

Shares	No. of shares	Price (₹)	Amount (₹)
Q Ltd.	2,000	200.00	4,00,000
R Ltd.	38,000	312.40	1,18,71,200
S Ltd.	40,000	180.60	72,24,000
T Ltd.	60,000	505.10	3,03,06,000
Cash			<u>5,00,800</u>
			5,03,02,000

Cash = 30,00,000 - 8000*312.40 = 500,800

No. of units of fund = 6,00,000 + 30,00,000 / 78.84 = 6,38,052

(iii) NAV on 2nd August 2019:

Shares	No. of shares	Price (₹)	Amount (₹)
Q Ltd.	2,000	205.00	4,10,000
R Ltd.	38,000	360.00	1,36,80,000
S Ltd.	40,000	191.55	76,62,000
T Ltd.	60,000	503.90	3,02,34,000
Cash			<u>500,800</u>
			5,24,86,800

NAV as on 2nd August 2019 = 5,24,86,800 / 6,38,052 = ₹ 82.26 per unit