



# Suggested Solution

## Test-1



Case Scenario-I		
(i)	(d)	Yes, by borrowing PV of Invoice amount in US Money Market
(ii)	(c)	£ 1,55,646
(iii)	(C)	4%

**Hint:**

(i) Amount receivable = \$ 250,000 (at 3-m)

For MMH, Borrow PV of invoice amount @9% for 3m, so that at maturity invoice amount received from customer can be paid to lender.

(ii) Money market hedge:

(a) Borrow PV of invoice amount @9% for 3m

$$\text{Borrowing} = \frac{\$ 250,000}{\left(1 + .09 \times \frac{3}{12}\right)} = \$ 2,44,498.78$$

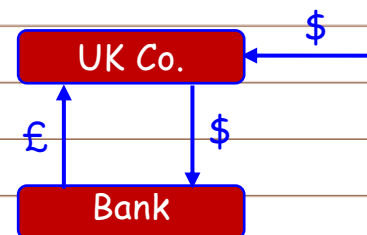
(b) Convert @ SR:

$$£1 = 1.5865 / 1.5905$$

$$\$ 1.5905 = £ 1$$

$$\$ 342298.29 = £ \left(\frac{1}{1.5905} \times 2,44,498.78\right)$$

$$= £ 1,53,724.48$$



(c) Deposit £ 1,53,724.48 @ 5% for 3m.

$$\text{Withdrawal} = £ 1,53,724.48 \times \left(1 + .05 \times \frac{3}{12}\right) = £ 1,55,646$$

(d) Repay \$ borrowing out of proceeds from customer.

$$\text{Amount} = \$ 250,000$$

Hence, Inflow under MMH = £ 1,55,646

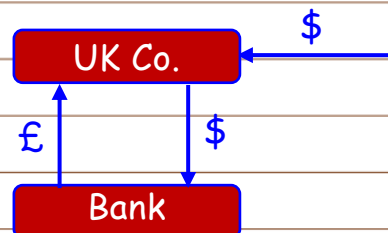
(iii) Forward Hedge:

Amount receivable = \$ 2,50,000

$$3m \text{ FR: } £ 1 = \$ 1.6050 / 1.6102$$

$$\text{Equivalent } £ = \frac{2,50,000}{1.6102}$$

$$= £ 1,55,260$$



Inflow under MMH = Inflow under Forward contract = £ 1,55,260



Let, rate be 'r'

Deposit £ 1,53,724.48 in UK market @ r% for 3m, to get £ 1,55,260

$$\text{Or, } \text{£ } 1,53,724.48 \times \left(1 + r/100 \times \frac{3}{12}\right) = \text{£ } 1,55,260$$

Solving we get, r = 4%

**Case Scenario-II**

(i)	C	₹ 1,66,50,000
(ii)	b	Encash US \$ into Rupee after 6 months

**Hint:**

Note: Decreasing order swap points to be deducted from spot rate to calculate forward rate.

**(i) Rupee to be paid:**

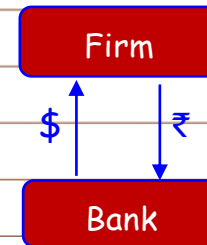
$$\text{SR : } \$1 = \text{₹}83.25/\text{₹}83.75$$

$$\text{6m FR } \frac{-0.75/0.50}{82.50/83.25}$$

$$\$2,00,000 = \text{₹}(83.25 \times 200,000)$$

$$= \text{₹ } 1,66,50,000$$

$$\therefore \text{Rupee to be paid} = \text{₹ } 1,66,50,000$$



**(ii) option - 1: Encash \$ today**

$$\text{Withdraw} = \$69000$$

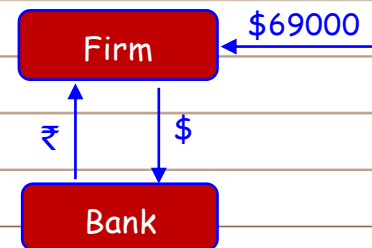
Equivalent ₹ @ SR

$$\text{SR : } \$1 = 83.25/83.75$$

$$\$69000 = \text{₹}(69000 \times 83.25)$$

$$= \text{₹}57,44,250$$

As INR current account bears no interest, value at 6m = ₹57,44,250



**Option-2: Encash after 6m :**

$$\text{Withdraw} = \$69000 (1 + 0.02 \times 6/12) = \$ 69,690$$

$$\text{6m FR: } \$1 = \text{₹}82.50/83.25$$

$$\$69000 = \text{₹}(82.50 \times 69690)$$

$$= \text{₹ } 57,49,425$$

Advise: It is beneficial to Encash \$ after 6 months.



Descriptive Question:

QUESTION - 1 Solution:

(i) Expected rate after 3Y:

Using PPPT,

$$ER = SR (\text{₹}/\$) \times \frac{[1+\text{inflation} (\text{₹})]^n}{[1+\text{inflation} (\$)]^n}$$

$$= 83.50 \times \frac{[1+.08]^3}{[1+.04]^3} = 93.51$$

(ii) 3m forward rate:

$$\$1 = \text{£ } 0.7570$$

Using IRPT,

$$3m \text{ FR} = SR (\text{£}/\$) \times \frac{[1+i (\text{£})]}{[1+i (\$)]}$$

Where,  $i$  = periodic interest rate

$$= 0.7570 \times \frac{[1+.035 \times \frac{3}{12}]}{[1+.075 \times \frac{3}{12}]}$$

$$\therefore \$1 = \text{£ } .74956$$



**QUESTION - 2 Solution:**

Amount payable at 6m = \$80,000 (For Indian)

Note: (Not for exam)

Upfront premium = Commission payable at the time of entering into contract (i.e. Now)

Outflow under Forward Contract:

(a) 6m FR: \$1 = ₹ 74

\$60,000 = ₹ (74 × 80,000) = ₹ 59,20,000

(b) Upfront prem = ₹ 59,20,000 × 2% = ₹ 1,18,400

Borrow ₹1,18,400 @ 12% p.a. for 6m

Outflow at 6m = ₹ 76,800 ×  $(1 + 0.12 \times \frac{6}{12})$  = ₹ 1,25,504

(c) Total outflow under forward contract

= ₹ 59,20,000 + ₹ 1,25,504 = ₹ 60,45,504

Requirement:

(i) Loss/gain when rate is ₹78:

Notional outflow at 6m rate (80,000 × 78)	₹ 62,40,000
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Actual outflow under FC	₹ 60,45,504
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Gain due to FC	₹ 1,94,496
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(ii) Loss/gain when rate is ₹72:

Notional outflow at 6m rate (80,000 × 72)	₹ 57,60,000
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Actual outflow under FC	₹ 60,45,504
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Loss due to FC	₹ 2,85,504
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**QUESTION – 3 Solution:**

Import Value = \$ (15000 × 25) = \$ 375,000

0m

3m

Pay to supplier  
\$375,000.

Pay to Supplier:  
 $\$375,000 \times (1 + .12 \times \frac{3}{12}) = \$ 386250$

**Requirement:**

**(i) Pay to 3-m time:**

3m FR: \$ 1	= ₹ 60.25	60.55
	+00.35	+00.55
∴ \$ 1	= ₹ 60.60	61.10

Equivalent outflow at 3-m = ₹(61.10 × 3,86,250)  
= ₹2,35,99,875

**(ii) Settle now:**

SR: \$ 1 = ₹ 60.25 / 60.55

Equivalent ₹ @ SR = (60.55 × 375,000)  
= 2,27,06,250 (outflow as on today)

Use OD by 2,27,06,250 at 15% p.a. for 3-m.

Repayment =  $(2,27,06,250 \times (1 + .15 \times \frac{3}{12}))$   
= 2,35,57,734 (outflow at 3m)

**Advice:** It is beneficial to pay now as outflow is lower.