SOLUTIONS

Question 1 :

¥ 500 payable (3m)

Forward cover

Outflow $= 500 \times 0.4268$
$= ₹ 213.4$

Money Market Cover

    I   **B**   **B**

$$\text{Outflow} = \frac{500}{\left(1+\dfrac{0.004}{4}\right)} \times 0.4115 \times \left(1+\frac{0.09}{4}\right)$$

$= ₹ 210.169$

Conclusion : Since, the outflow under Money Market Cover is lower than Forward Cover, it is preferable.

$ 10 m (3m) receivable

Forward cover

Inflow $= 10 \times 46.9 = 469$

Money Market Cover

    B   **S**   **I**

$$\text{Inflow} = \frac{10}{\left(1+\dfrac{0.065}{4}\right)} \times 46.65 \times \left(1+\frac{0.08}{4}\right)$$

$= 468.221$
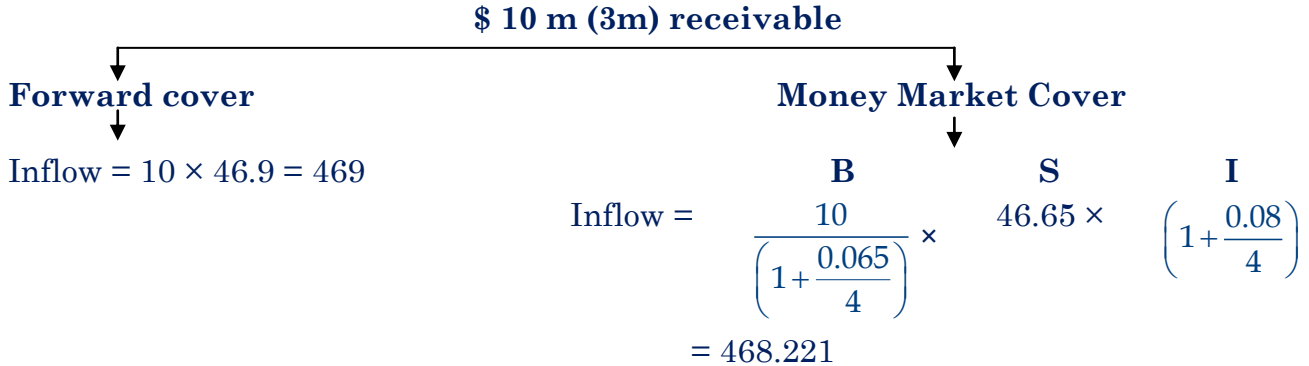
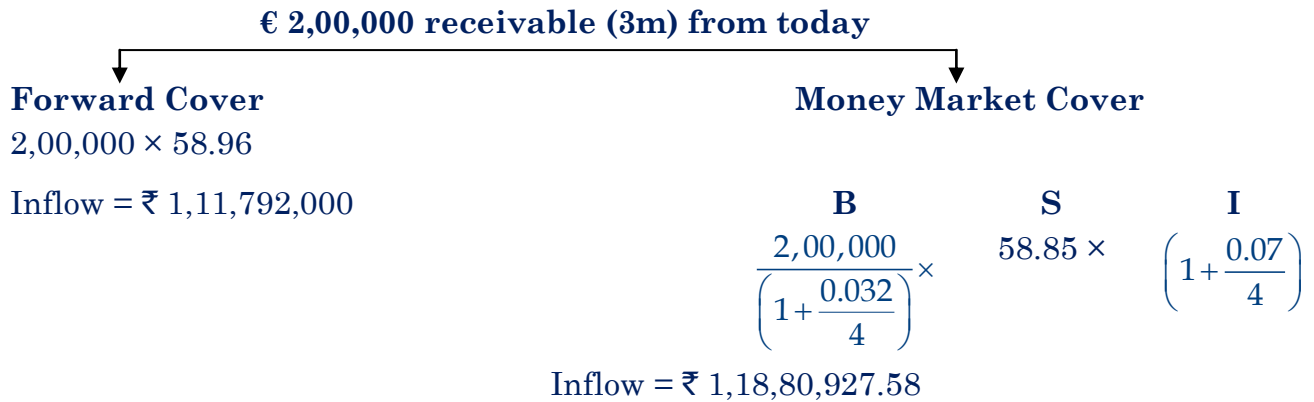**Conclusion :** Since, the inflow under Forward Cover is higher, than Money Market Cover, it is Preferable.

Question 2 :

$ 1,00,000 payable (3m) from now

Forward cover

$1,00,000 \times 46.02$

Inflow = ₹ 46,02,000

Money Market Cover

$$\text{Outflow} = \underset{I}{\frac{1,00,000}{\left(1+\dfrac{0.05}{4}\right)}} \times \underset{B}{45.98} \times \underset{B}{\left(1+\dfrac{0.08}{4}\right)}$$

$$= ₹\ 46,32,059.26$$
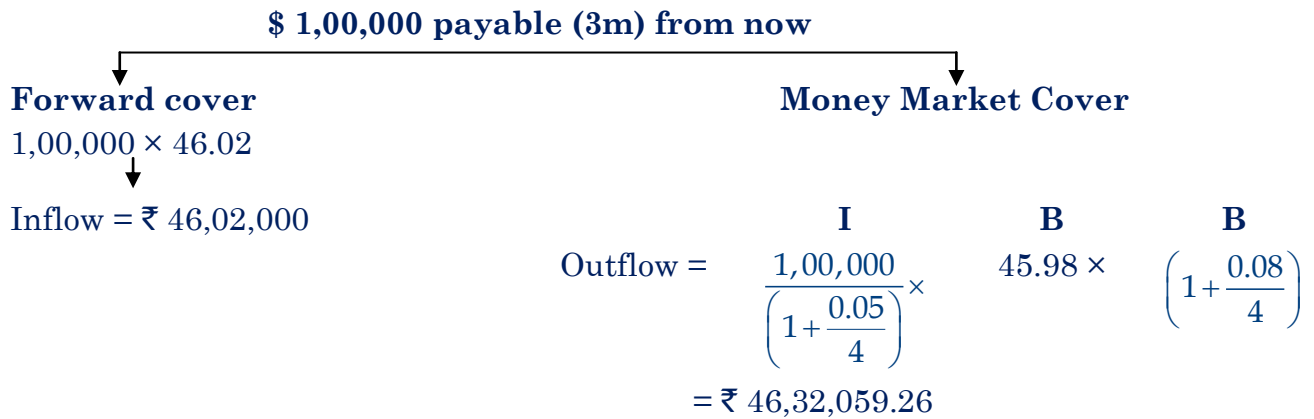
Conclusion : The outflow under Forward Cover is lower than that of under Money Market Cover, hence it should be preferred.

€ 2,00,000 receivable (3m) from today

Forward Cover

$2,00,000 \times 58.96$

Inflow = ₹ 1,11,792,000

Money Market Cover

$$\underset{B}{\frac{2,00,000}{\left(1+\dfrac{0.032}{4}\right)}} \times \underset{S}{58.85} \times \underset{I}{\left(1+\dfrac{0.07}{4}\right)}$$

$$\text{Inflow} = ₹\ 1,18,80,927.58$$

Conclusion : The inflow under Money Market Cover is more than the inflow under Forward cover, so it should be preferred.

Question 3 :

Alt 1 : Investment in India(₹1m)

Step 1 : Sell £ spot at ₹ 69.5/£ and therefore ₹ amount = ₹ 69.5 m

Step 2 : Invest ₹ 69.5 m in India at a post tax return of (15 × 0.85)% i.e. 12.75%

Step 3 : Expected Rupee inflow after 1 year:
= 69.5 × 1.1275 = ₹ 78.36 m

Step 4 : Expected Spot for buying £ as per PPP

$$= \left(69.7 \times \frac{1.04}{1.02} \right) = ₹71.067 / £$$

Step 5 : Expected £ inflow after 1 year = $\frac{78.36}{71.067}$ = £ 1.1026 m

Step 6 : Expected Return = $\left(\frac{1.1026 - 1}{1} \right) \times 100 = 10.26\%$

Alternative 2 : Investment in Hong Kong (£ 1 m)

Step 1 : Sell £ spot at HK$ 11.15/£ and therefore HK$ = 11.15

Step 2 : Invest 11.15m in Hong Kong at a post tax return of (12 × 0.88) i.e. 10.56%

Step 3 : Expected Rupee inflow in 1 year
= 11.15 × 1.1056 = 12.3274 HKD

Step 4 : Expected Sport after buying £ as per PPP

$$= \left(11.18 \times \frac{1.03}{1.02} \right) = HKD\,11.289 / £$$

Step 5 : Expected £ inflow after 1 year = $\frac{12.3274}{11.289}$ = £ 1.0919

Step 6 : Expected Return = $\left(\frac{1.0919 - 1}{1} \right) \times 100 = 9.19\%$

Question 4 :

Step 1 : Expected Return on Indian security in ₹ terms as per CAPM
= Rf + (Rm – Rf)
= 8 + (15 - 8)1.2 = 16.4%

Step 2 : Rupee is expected to depreciate by 4%

Step 3 : Expected Return in $ term = (1.164 × 0.96) – 1 = 11.744%

Note : SD is irrelevant as risk is not asked for

Question 5 :

Step 1 : Sell 10m $ spot @ ₹ 48/$, getting ₹ 480m

Step 2 : Invest ₹ 480m in India at a return of

(i) 6 + (12 - 6) × 1.4 = 14.4%

Step 3 : Expected Rupee inflow after 1 year
= 480 × 1.144 = ₹549.12m

Step 4 : Expected Spot for buying $ = ₹ 48 × 1.04/$ = ₹ 49.92/$

Step 5 : Expected $ inflow after 1 year = $\dfrac{549.12}{49.92} = \$11m$

Step 6 : Expected Return = $\left(\dfrac{11-10}{10}\right) \times 100 = 10\%$

(ii) $\text{Risk}\left(\sigma_{p}\right) = \sqrt{\text{Var (Stock) } + \text{Var(Currency)} + 2 \times r \times \text{SD stock} \times \text{SD currency}}$

$$= \sqrt{\left(10\right)^{2} + \left(8\right)^{2} + 2 \times 0.15 \times 8 \times 10} = 13.71\%$$

Question 6 :

Step 1 : Sell $ 5m spot @ ₹ 43.5/$, getting ₹ 217.5m

Step 2 : Invest ₹ 217.5m in India, at a return of
5 + (16 - 5) × 1.25 = 18.75%

Step 3 : Expected ₹ inflow after 1 year
= 217.5 × 1.1875 = ₹ 258.28 m

Step 4 : Expected Spot for buying $ =43.5 × 0.98 or $43.5 \times \dfrac{1}{1.02} = ₹\, 42.63 / \$$

Note : Since quotation is INR/USD and it is said that INR will appreciate, the mathematically correct process is to divide by 1.02. However, in all past solutions throughout FOREX, ICAI has always reverted it on the base currency, that is if INR appreciates 2%, USD depreciates 2% and therefore they multiply it by 0.98. Hence, students are advised to do multiplication with 0.98....although conceptually wrong, examination wise correct.......Hope you are not surprised!!!

Step 5 :   Expected \$ inflow after 1 year $= \dfrac{258.28}{42.63} = \$6.058\,m$

Step 6 :

    (i) Expected Return $\left(\dfrac{6.058-5}{5}\right) \times 100 = 21.6\%$

    (ii) $\text{Risk}(\sigma_p) = \sqrt{\text{Var (Stock)} + \text{Var(Currency)} + 2 \times \text{SD stock} \times \Pi \times \text{SD currency}}$

$$= \sqrt{9^2 + 6^2 + 2 \times 0.66 \times 9 \times 6} = \sqrt{188.28} = 13.72\%$$

Question 7 :

Dear Students, in this problem, we are not given absolute information like " What was the initial exchange rate, i.e. S0 and also, what amount of Australian Dollar (not INR) that the investor started with. Hence, we will solve the sum via the shortcut, i.e. Factor Technique.

Step 1 :   Return in terms of INR = 6.5 + (12 - 6.5) × 1.65 = 15.575%

Step 2 :   Expected Appreciation on Australian Dollar = 3%

Step 3 :   Expected Expected Return in terms of AUD = (1.15575/1.03) − 1 = 12.208%

Note : Which is the foreign currency? – It's INR.
However, we are given appreciation of AUD.
Hence, we have done [(factor/factor) – 1]
If, instead, INR depreciation of 3% was given, we would have done [(factor*factor) – 1]
That is, Expected Return would have been (1.15575×0.97) – 1 = 12.107%

Step 4 : $\text{Risk}(\sigma_p) = \sqrt{\text{Var (Stock)} + \text{Var(Currency)} + 2 \times \text{SD stock} \times \Pi \times \text{SD currency}}$

    Risk $= \sqrt{10 + 25 + 0} = 5.916\%$

Question 8 :

a. Step 1 : Sell $ 5,000,000 spot @ ₹ 46.5/$, getting ₹ 23,25,00,000

Step 2 : Invest ₹ 28,25,00,000 is SENSEX carving a Return of

$$\left(\frac{6087 - 5855}{5855} \right) \times 100 = 3.96\%$$

Step 3 : Rupee inflow = 23,25,00,000 × 1.0396 = ₹ 24,17,07,000

Step 4 : $ inflow = $\dfrac{24,17,07,000}{43.55} = \$ 55,50,103$

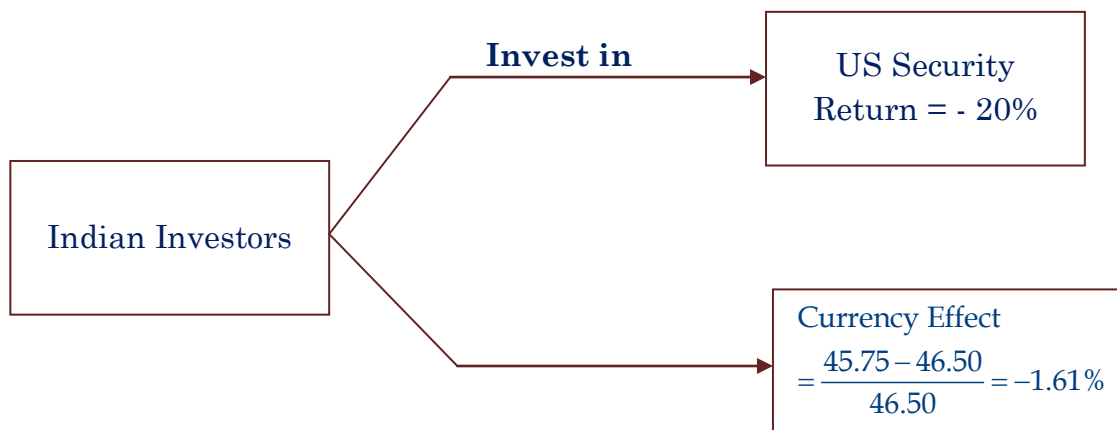Nominal Return to the US investor = $\left(\dfrac{55,50,103 - 50,00,000}{50,00,000} \right) \times 100 = 11.002\%$

b. Real Return to the US investor

[(1+ Nominal Return)/(1+ Inflation)-1]= $\left(\dfrac{1.11002}{1.02} - 1 \right) \times 100 = 8.226\%$

c. Had an Indian Investor put in the same $ equivalent Rupee amount, his Nominal Return would have been = 3.96%

d. Real Return to the Indian investor (Fishers' Equation) = $\left(\dfrac{1.0396}{1.06} - 1 \right) \times 100 = -1.92\%$

Question 9 :

Indian Investors **Invest in** → US Security Return = - 20%

Currency Effect $= \dfrac{45.75 - 46.50}{46.50} = -1.61\%$

Net Return to the Investor = [(0.8 × 0.9834) - 1]×100 = - 21.33%

Alt 1 : $ borrowing

a. **Step 1** : Borrowing amount $\dfrac{10}{46.90} = \$0.213m$

   (Since, we'll borrow $ and sell it spot to get ₹ 10m)

Step 2 : $ payable after 6 months $= 0.213 \times \left(1 + \dfrac{0.04}{2}\right) = \$0.217m$

Step 3 : Purchase 6m forward contract at 46.95 + 0.9 = ₹ 47.85/$

Step 4 : Outflow after 6 months = 47.85 × 0.217 = ₹ 10.38m

Alt 2 : £ borrowing

Step 1 : Borrowing amount $= \dfrac{10}{65.35} = £0.153m$

Step 2 : £ payable after 6 months $= 0.153\left(1 + \dfrac{0.05}{2}\right) = £0.157m$

Step 3 : Purchase 6m £ forward contract at 65.4 + 1 = ₹ 66.4/£

Step 4 : Outflow after 6 months = 66.4 × 0.157 = ₹ 10.424m

Conclusion : Hence, as outflow under $ financing < outflow under £ financing, the $ financing should be preferred.

Alt 1 : $ Borrowing

b. **Step 1** : Borrowing amount $= \dfrac{10}{46.90} = \$0.213m$

Step 2 : $ Payable after 6 months $= 0.213 \times \left(1 + \dfrac{0.04}{2}\right) = \$0.217m$

Step 3 : Expected spot Rate after 6 months = ₹ 47.55/$

Step 4 : Outflow after 6 months = ₹(0.217 × 47.55)m = ₹ 10.318m

Alt 3 : £ Borrowing

Step 1 : Borrowing amount $= \dfrac{10}{65.35} = £0.153m$

Step 2 : £ Payable after 6 month = $0.153\left(1+\dfrac{0.05}{2}\right) = £\ 0.157m$

Step 3 : Expected Spot Rate after 6 months = ₹ 66.95/£

Step 4 : Outflow after 6 months = ₹(0.157 × 66.95) = ₹ 10.511m

Conclusion : Hence, as outflow under $ financing < outflow under £ financing, it should be preferred.

Question 11 :

a. If the company borrow in $

Step 1 : Borrow $ worth ₹ 50 m at ₹ 48.50, getting = $\dfrac{50}{48.5} = \$1.03928m$

Step 2 : $ payable after 3 months = $1.03 \times \left(1+\dfrac{0.04}{4}\right) = \$\ 1.041237m$

Step 3 :

    i. Cover via forward contract @ ₹ 49.05/$

    Outflow after 6 months = 1.041237 × 49.05 = ₹51.073 m

    Effective annualized cost of borrowing = $\left(\dfrac{51.073-50}{50}\right) \times 100 \times 4 = 8.58\%$

<div align="center">OR</div>

    ii. Keep the position open and expected spot rate = ₹ 48.95/$

    Outflow after 6 months 1.041237× 48.95 = ₹ 50.97m

    Effective annualized cost of borrowing = $\left(\dfrac{50.97-50}{50}\right) \times 100 \times 4 = 7.75\%$

b. If the company borrow in £

Step 1 : Borrow £ worth ₹ 50m at ₹ 74.05 getting = $\dfrac{50}{74.05} = £0.675m$

Step 2 : Pound payable after 6 months = $0.675 \times \left(1+\dfrac{0.06}{4}\right) = £0.6853m$

Step 3 :

    i. Cover in forward contract @ 74.10 + 0.9 = ₹ 75.00/£

Outflow of tax 6 months = $0.6853 \times 75 = ₹51.4m$

Effective annualized cost of borrowing = $\left(\dfrac{51.4 - 50}{50}\right) \times 100 \times 4 = 11.21\%$

OR

ii. Keep the position open and accepted spot rate = ₹ 74.80/£

Outflow after 6 months = $74.80 \times 0.6853 = ₹51.26m$

Effective annualized cost of borrowing = $\left(\dfrac{51.26 - 50}{50}\right) \times 100 \times 4 = 10.08\%$

Conclusion – $ borrowing with no cover is expected to be the best

Question 12 :

There is a mistake in the question. Exchange rates are reversed, as in - Exchange rate on the date of availing the loan (01.01.2003) : Euro 0.78/$

Exchange rate on the date of repaying the loan (31.12.2003) : Euro 0.90/$

Step 1 : Interest Rate = 8% for borrowing $

Step 2 : Depreciation of $ of $ = $\left(\dfrac{0.9 - 0.78}{0.78}\right) \times 100 = 15.38\%$

Step 3 : Nominal cost of $ borrowing in Euro terms= [(1.08×1.1538) − 1]×100 = 24.61%

Step 4 : Real Cost of $ borrowing in Euro terms = [(1.2461/1.03)-1]×100 = 20.98%

Question 13

Indian company requires a loan of $ 3,00,000, to be repaid in 3 equal annual installments of $ 1,12,000. The current exchange rate = 47.70.(S_0)

Hence, ₹ inflow today = 3,00,000 × 47.7 = ₹ 1,43,10,000

Exchange rate after 1 year (S_1) = 47.7 × 0.99 = ₹ 47.223/$

Exchange rate after 2 year (S_2) = 47.223 × 1.02 = ₹ 48.167/$

Exchange rate after 3 year (S_3) = 48.167 × 1.03 = ₹ 49.612/$

Hence, effective cost of funds in ₹ terms :

$$1,43,10,000 = \dfrac{1,12,000 \times 47.223}{1+r} + \dfrac{1,12,000 \times 48.167}{\left(1+r\right)^2} + \dfrac{1,12,000 \times 49.612}{\left(1+r\right)^3}$$

Using interpolation, we will get r close to 6.5%

Question 14 :

Initial Agreement on forward contract:

Initial Agreement on forward contract:

To deliver £ 1,00,000 at ₹ 65.6/£ on 31st May.

However, on 31st May, that is maturity date, firm approaches for extension, i.e. cancellation of old contract, together with fresh forward contract.

To cancel old contract, firm needs to buy pound spot at 66.65

$$\begin{aligned}
\text{Extension charges} &= 100000 \times (66.65 - 65.6) \\
&= 66,65,000 - 65,60,000 \\
&= ₹\ 1,05,000.
\end{aligned}$$

Also, firm will enter into a fresh 2m forward contract to sell pound at 67.01

Question 15 :

Importer has a payable of C$ 5,00,000 on 31.03.02

On 01.01.02, importer buys forward at ₹ 30.34/C$

On 31.03.02, the importer :

Square off his old contract at	= 5,00,000 × 30.54	= ₹ 1,52,70,000
His profit on cancellation	= 5,00,000 × (30.54 – 30.34)	= 1,00,000

Also, firm will enter into a fresh 1m forward contract to buy pound at 30.68

Net Inflow = -₹ 1,00,000

Question 16 :

i. **Profit based on current exchange rate**

   Revenue – Import Cost – FC - VC
   = (2400 × 500 × 51.50) - (2400 × 800 × 27.25) – 2400(1,000 + 1,500)
   = 6,18,00,000 – 5,23,20,000 – 60,00,000
   = ₹ 34,80,000

   Project based on exchange rate after 6 month

   Revenue - Import Cost - FC -VC
   = (2400 × 500/unit × 52.00) – (2400×800/unit × 27.75) – 2400(1000+1500)
   = 6,24,00,000 – 5,32,80,000 – 60,00,000
   = ₹ 31,20,000

∴ Loss due to transaction exposure $\quad$ = 34,80,000 − 31,20,000

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ = ₹ 3,60,000

ii. Step 1 :

Since the firm is now invoicing exports at ₹ 25,000, there is no transaction exposure relating to € receivable.

Ofcourse, we still have S$ payable. Using the revised current rate and the rate after 6 months, loss due to transaction exposure = 2,400× 800 × (27.75 − 27.15) = ₹11,52,000

* Why 2,400? ………………units toh change hone wala hai

Answer : *Change in units Economic exposure € and that's why Transaction exposure calculate karte time units change nahi karenge, 2,400 he rakhenge*

Step 2 :

S_0 $\quad$ = ₹/€ 51.50
(Old Current Rate)

S_T = ₹/€ =52

O ————————————————————
$S^{\#}_0$ $\quad$ = ₹/€ = 51.75 $\qquad\qquad\qquad\qquad$ 6m

(New Current Rate)

€ Equivalent price based on old current rate $= \dfrac{25,000}{51.50} = €485.44$

€ Equivalent price based on revised current rate $= \dfrac{25,000}{51.75} = 483.09$

∴ Fall in price $= \dfrac{485.44 - 483.09}{485.44} \times 100 = 0.48\%$

Given, elasticity, ed = 1.5%

So, increase in demand = 1.5% × 0.48% = 0.72%

∴ New Demand = 2400 units + 0.72% of 2,400 = 2417 units

Self Note : *Dono current exchange rate kuy use kiye, 6 months baad wala bhi toh use kar sakte the?*

Answer : *No, because if we use rate after 6m i.e. ₹52/Euro, the change in demand will occur after 6m which will affect future project and not current 6m profit*

Step 3 :

Project based on old units, ₹ invoicing and revised current rate

= (2400 × 25,000) – (2400 × 800 × 27.15) – (2400 × 2,500) = ₹ 18,72,000

Project based on new units, ₹ invoicing and exchange rate after 6m

= (2417 × 25,000) - (2417 × 800 × 27.75) – (2417 × 1,500*) – (2400# × 1,000)
= ₹ 7,42,100
(*=VC, #=units will not be changed for fixed cost)

∴ Loss due to economic exposure = 18,72,000 – 7,42,100 = ₹ 11,29,900

> *Self Note : Dono Profitke Components pe dhyan de :*
> - *2,400 → 2,417 units → Change due to Economic exposure*
> - *S$ Rate 27.15 → 27.75 → Change due to Transaction exposure*
>
> *Therefore, Actually , 11,29,900(loss) is combined loss due to transaction as well as economic exposure But, loss due to transaction exposure = 11,52,000 (Calculated in step 1)*

∴ *Gain due to Economic exposure = 11,52,000 – 11,29,900 =₹ 22,100*

[But do the sum in the manner solved by ICAI, the note is just for your understanding if you find ambiguity solving the question next time.]

Question 17 :

i.   **Profit based on current exchange rate**

Revenue – Import Cost – FC - VC
= (6000 × 165 × 59.60) - (6000 × 750 × 5.98) – 6000(1,200 + 2,500)
= ₹98,94,000

Project based on exchange rate after 6 month

Revenue - Import Cost - FC -VC
= (6000 × 165 × 60.30) - (6000 × 750 × 6.25) – 6000(1,200 + 2,500)
= 93,72,000

∴ Loss due to transaction exposure = 98,94,000 – 93,72,000 = ₹5,22,000

ii. Step 1 :

Since the firm is now invoicing exports at ₹9,500, there is no transaction exposure relating to € receivable.

Of course, we still have HK$ payable. Using the revised current rate and the rate after 6 months, loss due to transaction exposure = $6{,}000 \times 750 \times (6.25 - 6.02) = $ ₹10,35,000

> *** Why 6,000? …………………units toh change hone wala hai**
>
> **Answer :** *Change in units Economic exposure € and that's why Transaction exposure calculate karte time units change nahi karenge, 6,000 he rakhenge*

Step 2 :

S_0 = ₹/€ 59.60
(Old Current Rate)

S_T = ₹/€ =60.3

$S^{\#}_0$ O = ₹/€ = 59.85

6m

(New Current Rate)

€ Equivalent price based on old current rate $= \dfrac{9{,}500}{59.60} = $ €159.40

€ Equivalent price based on revised current rate $= \dfrac{9{,}500}{59.85} = 158.73$

∴ Fall in price $= \dfrac{159.4 - 158.73}{159.4} \times 100 = 0.42\%$

Given, elasticity, ed = 2.5%

So, increase in demand = 2.5% × 0.42% = 1.05%

∴ New Demand = 6000 units + 1.05% of 6,000 = 6063 units (approx)

> **Self Note :** *Dono current exchange rate kuy use kiye, 6 months baad wala bhi toh use kar sakte the?*
>
> **Answer :** *No, because if we use rate after 6m i.e. ₹60.3/Euro, the change in demand will occur after 6m which will affect future project and not current 6m profit*

Step 3 :

Project based on old units, ₹ invoicing and revised current rate

$= (6000 \times 9,500) - (6000 \times 750 \times 6.02) - 6000(1,200 + 2,500) = 77,10,000$
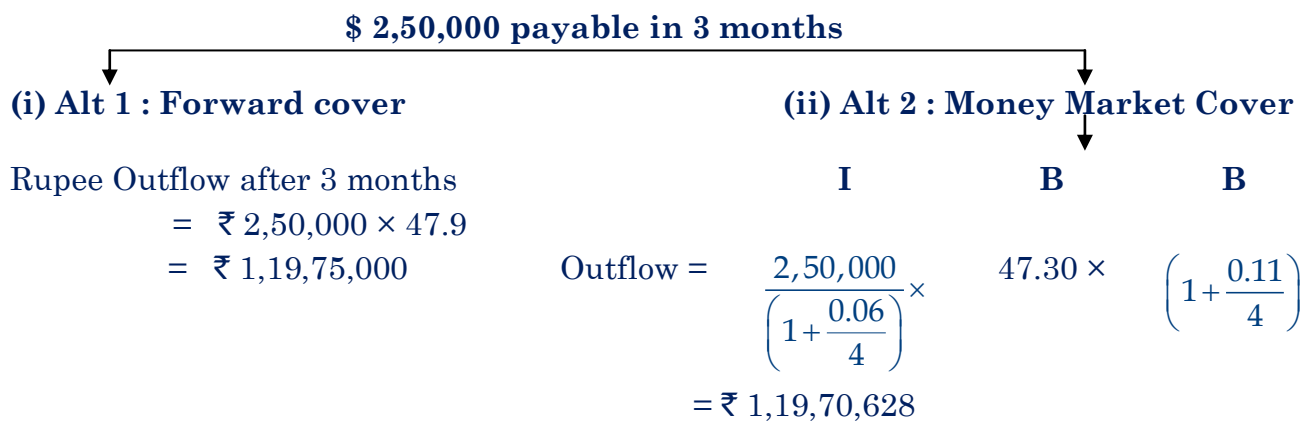
Project based on new units, ₹ invoicing and exchange rate after 6m

$= (6063 \times 9,500) - (6063 \times 750 \times 6.25) - 6063 \times 2500 - 6000 \times 1200$
$= ₹68,20,687.5$

∴ Loss due to economic exposure $= 77,10,000 - 68,20,687.5 = ₹8,89,312.5$

Question 18 :

$ 2,50,000 payable in 3 months

(i) Alt 1 : Forward cover

Rupee Outflow after 3 months
$= ₹ 2,50,000 \times 47.9$
$= ₹ 1,19,75,000$

(ii) Alt 2 : Money Market Cover

I   B   B

$\text{Outflow} = \dfrac{2,50,000}{\left(1+\dfrac{0.06}{4}\right)} \times 47.30 \times \left(1+\dfrac{0.11}{4}\right)$

$= ₹ 1,19,70,628$

(iii) Alt 3 : Leading the payable :

Step 1 : Amount payable today $= 2,50,000 - 5,000 = \$ 2,45,000$

Step 2 : Buy $ 2,45,000 spot at ₹ 47.3/$, requiring $= 2,45,000 \times 47.3$
$= ₹ 1,15,88,500$

Step 3 : Borrow ₹ 1,15,88,500 at 9% p.a. for 3 months

Amount payable $= 1,15,88,500 \times \left(1+\dfrac{0.09}{4}\right) = ₹ 1,18,49,241$

Conclusion : Hence, as outflow under Alt 3 is lowest, it should be preferred.

Question 19 :

For the export ₹ 10m receivable from an European

Alt 1 : invoice in $

Step 1 : Invoice Amount = $\dfrac{10}{47.1} = \$0.2123m$

Step 2 : 3m forward for sale of \$ = $47.1\left(1+\dfrac{0.06}{4}\right) = ₹47.81/\$$

Step 3 : ₹ inflow after 3 months = ₹ $0.2123 \times 47.81 = ₹\ 10.15m$

Alt 2 : Invoice in £

Step 1 : Invoice Amount = $\dfrac{10}{68.65} = £\ 0.1456m$

Step 2 : 3m forward for sale of £ = $68.65\left(1+\dfrac{0.04}{4}\right) = ₹69.34/£$

Step 3 : ₹ inflow after 3 months = $69.34 \times 0.1456 = ₹\ 10.09m$

Alt 3 : Invoice in €

Step 1 : Invoice Amount = $\dfrac{10}{43.15} = €\ 0.2317m$

Step 2 : 3m forward for sale of € = $43.15 \times \left(1+\dfrac{0.05}{4}\right) = ₹43.69/€$

Step 3 : ₹ inflow after 3 months = $0.2317 \times 43.69 = €\ 10.12m$

Hence, invoicing the Receivables from exports is preferable in \$ terms as it results in the highest inflow of Rupee

For the impact ₹ 5m payable to a UK firm

Alt 1 : Invoice in $

Step 1 : Invoice Amount = $\dfrac{5}{47.20} = \$0.1059m$

Step 2 : 3m forward for purchase of \$ = $47.2 \times \left(1+\dfrac{0.06}{2}\right) = ₹48.61/\$$

Step 3 : ₹ outflow in 6m = $0.1059 \times 48.61 = ₹\ 5.147m$

Alt 2 : Invoice in £

Step 1 : Invoice Amount = $\dfrac{5}{68.75}$ = £0.0727m

Step 2 : 3m forward for purchase of £ = $68.75 \times \left(1 + \dfrac{0.04}{2}\right)$ = ₹ 70.125/£

Step 3 : ₹ outflow in 6m = 0.0727 × 70.125 = £ 5.098m

Alt 3 : Invoice in €

Step 1 : Invoice Amount = $\dfrac{5}{43.20}$ = € 0.1157m

Step 2 : 3m forward for purchase of € = $43.20 \times \left(1 + \dfrac{0.05}{2}\right)$ = 44.28

Step 3 : ₹ outflow in 6m = 44.28 × 0.1157 = ₹ 5.1232m

Hence, as the outflow under £ invoicing is the lowest the same should be preferred.

Question 20 :

For the export ₹ 10m receivable to USA :

Alt 1 : Invoice in $

Step 1 : Invoice Amount = $\dfrac{10}{48.20}$ = $0.2074m

Step 2 : 3m forward for sale of $ = $48.20 \times \left(1 + \dfrac{0.04}{4}\right)$ = ₹49.164 / $

Step 3 : Inflow after 3m = 49.164 × 0.2074 = ₹10.1967m

Alt 2 : Invoice in £

Step 1 : Invoice Amount = $\dfrac{10}{75.25}$ = £ 0.1328m

Step 2 : 3m forward for sale of £ = $75.25 \times \left(1 + \dfrac{0.03}{4}\right)$ = ₹ 75.81/£

Step 3 : Inflow after 3 months = 75.81 × 0.1328 = ₹10.06m

Alt 3 : Invoice in €

Step 1 : Invoice Amount = $\dfrac{10}{48}$ = € 0.2083m

Step 2 : 3m forward for sale of € = $48 \times \left(1 + \dfrac{0.02}{4}\right)$ = ₹ 48.24/€

Step 3 : Inflow of ₹ after 3 months = 48.24 × 0.2083 = ₹10.048m

Hence, as inflow under invoicing exports in \$ is highest, the same should be preferred.

For import, ₹4m payable 6m from now

Alt 1 : Invoice in \$

Step 1 : Invoice Amount = $\dfrac{4}{48.22}$ = \$0.0829m

Step 2 : 6m forward for purchase of \$ = $48.22 \times \left(1 + \dfrac{0.04}{2}\right)$ = ₹49.1844 / \$

Step 3 : Outflow of ₹ after 6 months = 49.1844 × 0.0829 = ₹ 4.077m

Alt 2 : Invoice in £

Step 1 : Invoice Amount = $\dfrac{4}{75.27}$ = £ 0.0531m

Step 2 : 6m forward for purchase of £ = $75.27 \times \left(1 + \dfrac{0.03}{2}\right)$ = ₹ 76.399/£

Step 3 : ₹ outflow after 6 months = 76.399 × 0.0531 = ₹ 4.056m

Alt 3 : Invoice in €

Step 1 : Invoice Amount = $\dfrac{4}{48.02}$ = € 0.0833m

Step 2 : 6m forward purchase of € = $48.02 \times \left(1 + \dfrac{0.02}{2}\right)$ = ₹ 48.5/€

Step 3 : Outflow after 6 months = 48.5 × 0.0833m = ₹ 4.04m

Hence, as outflow under Euro is lowest, the invoice should be done in the same.