Forex Additional Problems

Answer - 3: Cost of the Instrument in Pound = 987.65 / 1.75 = 564.37 Pound
Maturity value in Pound = 1,000 / 1.83 = 546.45 Pound
Holding Period Return = [(546.45 – 564.37) / 564.37] X 100
= - 3.18%

Answer - 4: Purchase Cost in Canadian Dollar = 93 / 0.68 = 136.76
Dividend in Canadian Dollar = 0.72 / 0.71 = 1.01
Sale Price in Canadian Dollar = 100.25 / 0.71 = 141.20
Rate of Return = (141.20 + 1.01 – 136.76) / 136.76 = 3.98%

Answer - 9: Nov (2004) : 1 peso = $0.0913
December (2006) : 1 peso = $0.1086
Depreciation of $ = (0.0913 – 0.1086) / 0.1086 = - 15.93%

Answer – 10:

a)

Statement of Annual Dollar Cash Flow

	$6/unit	**$5.70/unit**	**$5.55/unit**
Sales	10m	10m	10m
Less: Cost	6m	5.7m	5.5m
Less: Depn.	1m	1m	1m
PBT	3m	3.3m	3.5m
Less: Tax	1.2m	1.32m	1.4m
PAT	1.8m	1.98m	2.1m
Add: Depn.	1m	1m	1m
CFAT	2.8m	2.98m	3.1m

b) Annual CFAT = 2.8m X 0.4 + 2.98m X 0.4 + 3.1m X 0.2 = $2.932m

c) NPV = 2.932 / (0.12 – 0.02) – 25 = 4.32m
As the expected NPV is positive , the proposal should be accepted.

Answer – 12: INR / HK$ = [INR / $] X [$ / HK$] = 42.85 X 1 / 7.5880

= 5.65

Cover Rate : 1 HK$ = Rs.5.65
Profit = Rs.(5.70 – 5.65) X 1,00,00,000 = Rs.5,00,000

Solution – A13: **First Alternative**

INR to be received at the end of 2 month [3,00,000 X 36.60]	**1,09,80,000**
Interest thereon for 1 month [1,09,80,000 X 16% X 1/12]	**1,46,400**
INR required to execute 3m forward contract [5,00,000 X 36.90]	**(1,84,50,000)**
Net COF	**(73,23,600)**

Second Alternative

Cost of Cancellation of Forward Contract [(36.75 – 36.60) X 3,00,000]	**(45,000)**
Outflow for execution of Forward Contract [36.90 X 3,00,000]	**(73,80,000)**
Net COF	**(74,25,000)**

Decision: First alternative would be better.

Solution – A14:

Currency	Spot	Amount	Int. Rate	Amt. Repayable	FR	INR
Pound	Rs.53.25	PD18,779	7.50%	PD19,131	54.80	10,48,389
$	Rs.34.70	$28,818	6.25%	$29,269	35.95	10,52,211
DM	Rs.24.20	DM41,322	5.50%	DM41,890	25.15	10,53,546
FF	Rs.7.10	FF1,40,845	7.00%	FF1,43,310	7.35	10,53,327

The company should borrow Pound , it would minimize the outflow of INR.

Solution – A15:

Take a Loan Bank

Company has to enter into a 60days forward contract and cost of **10,000$** would be **10,000 X Rs.46.20 = Rs.4,62,000** which is to be taken as loan

from the bank. The loan together with interest would be **Rs.(4,62,000 + 4,62,000 X 9% X 1/12) = Rs.4,65,465**

Pay after 90 days

Amount of $ to be paid is = **$10,000 + $10,000 X 6% X 1/12 = $10,050**
Cost of such $ is = **10,050 X Rs.46.35 = Rs.4,65,818.**

Answer – A17: Forward Exchange Rate under IRP theorem: **1PD = $2.5354**

a) After gain : **1PD = $2.5 X 1.04 = $2.6.** Hedging would save a loss of **PD4,900.**

b) After lose : **1PD = $2.5 X 0.98 = $2.45.** Hedging has cost to the company **PD6,874.09**

c) Hedging has cost to the company **PD2792.46**

Answer – A18: Three month forward rate under IRP theorem:

1PD = $1.8111

a) The company has two options. **(1)** Deposit the $ now for three month and after three month make the $ payment. **(2)** Convert the $ into PD and make PD deposit for three month and enter into a 3month forward contract. At the end of three month PD deposit would mature and forward contract would be executed.

Under the second alternative , 3 month forward rate per **PD** is less than the required rate under IRP theorem. So , we can say for 1PD , company would receive less $. So , the company should invest in $ only.

b) 1PD = $1.8111

c) Under the IRP theorem , 3month forward contact rate would be:

1PD = $1.7937

The company has two options. **(1)** Deposit the $ now for three month and after three month make the $ payment. **(2)** Convert the $ into PD and make PD deposit for three month and enter into a 3month forward contract. At the end of three month PD deposit would mature and forward contract would be executed.

Under the second alternative , 3 month forward rate per **PD** is more than the required rate under IRP theorem. So , we can say for 1PD , company would receive more $. So , the company should invest in **PD** only.

d) 13.54%

Answer – A19: **a)** Loss Rs.3,000
b) Rs.44.4/$ or less
c) Rs.54.4/$ or more

Answer – A20: **[1 + 0.02/2] / [1 + 0.03/2] = F / 122**
⇨ **F = 121.40**

Answer – A21: Using PPP theorem 3month forward rate would be :

FF2.0050/$

FF / DM = FF / $ X $ / DM = 2.0050 / 1.60 = 1.2531

Answer – A22:
a) US$1 = S$3.0210 & US$1 = 141.8654Rubles
b) Based on given exchange rate cost in $ would be :
New York - $22.84
Singapore – 69 / 1.63 = $42.33
Moscow – 3,240 / 250 = $12.96
So, Moscow is the cheapest.

Answer – A23:
Interest of 1PD for three year time period = 1.03 X 1.035 X 1.03 – 1 = 0.098
Interest of 1$ for three year time period = 1.02 X 1.025 X 1.02 – 1 = 0.066
[1 + 0.066] / [1 + 0.098] = F / 1.65
=> F = 1.602

Answer – A24:

Position Based on Current Rate

Revenue per piece [100 X 36]	Rs.3,600
Cost of RM [50 X 36]	Rs.1,800
Other Variable Costs	Rs. 200
Contribution	Rs.1,600

Position Based on Changed Rate

Revenue per piece [100 X 40]	Rs.4,000
Cost of RM [50 X 40]	Rs.2,000
Other Variable Costs	Rs. 200
Contribution	Rs.1,800

Due to transaction exposure contribution per unit increases from Rs.1,600 to Rs.1,800.

Answer – A25:

Position At Existing Exchange Rate Level

Revenue [2,000 X 100 X 35]	70,00,000
RM [2,000 X 6,000 X 35/120]	35,00,000
Labour [2,000 X 350]	7,00,000
Overhead [2,000 X 700]	14,00,000
Profit	14,00,000

Position At Changed Exchange Rate Level

Revenue [2,000 X 100 X 36]	72,00,000
RM [2,000 X 6,000 X 36/110]	39,27,273
Labour [2,000 X 350]	7,00,000
Overhead [2,000 X 700]	14,00,000
Profit	11,72,727

Loss due to transaction exposure = Rs.(14,00,000 – 11,72,727) = Rs.2,27,273

Answer – A26:

Invoice amount in SGD = SGD43,30,879
Invoice amount in $ = $23,04,678
Invoice amount in Pound = Pound14,22,475

Expected 1 year Forward rate using Interest Rate Parity Theorem:
1SGD = Rs.24.54
1$ = Rs.45.24
1Pound = Rs.72.95

Amount to be received after 1 year in INR:
For SGD invoicing : Rs.10,62,79,771
For $ invoicing : Rs.10,42,63,633

For Pound Invoicing : Rs.10,37,69,551

SGD invoicing would be best.

Answer – A27: Let us assume that USA Investor invested $10,00,000 in India. So , his investment in INR would be 10,00,000 X Rs.40.75 = Rs.4,07,50,000.

Index has grown from 3,450 to 4,500. So , we can say his investment has also grown from Rs.4,07,50,000 to Rs.4,07,50,000 X 4,500 / 3,450 = Rs.5,31,52,174. Investment value in $ would be Rs.5,31,52,174 / 43.60 = $12,19,099.

Nominal Rate of return to Investor= [2,19,099 / 10,00,000] X 100 = 21.91%

Real Rate of Return = [1 + Nominal Rate of Return] / [1 + Inflation in USA] – 1 = [1.2191 / 1.03] – 1 = 18.36%

Answer – A28: Invest in Euro : Return = Euro40,000

Invest in Dollars : Return = Euro18,895

Invest in Pound : Return = Euro39,570

Investment in Euro would be best.