CA FINAL
STRATEGIC FINANCIAL MANAGEMENT
FOREX
TEST 5

Question 1 :

Proactive Ltd. imports some specialty instruments from Japan and exports the finished product to US. The company has a payable of ¥ 500 million and a receivable of $10 million three months hence. The following exchange rates are available in the market:

	Rs./$	Rs./¥
Spot	46.65/85	0.4065/0.4115
3m forward	46.90/15	0.4218/0.4268

The current interest rate scenario is as follows:

Maturity	Rupee (%)	Dollar (%)	Yen (%)
3m	8.0/9.0	6.00/6.50	0.4/0.5

The company is considering to cover the exposures either through the forward market or through the money market.

You are required to advise the company which alternative should be better for covering both the payables and receivables.

Question 2 :

M/s H.P. Agro Exports Ltd., New Delhi, imports raw materials viz., cans, sugar, pulp etc from China and Korea and exports processed foods to European countries after processing. The company has receivables of € 200,000 and payables of US$100,000 three months from now. The following exchange rates are available in the market:

Exchange rates	Rs/Euro	Rs/$
Spot	58.85/90	45.96/98
Three month forward	58.96/98	46.00/02

The current interest rates (per annum) are as under

Maturity	Rupee (%)	Euro (%)	US$ (%)
3 months	7.00 / 8.00	3.00 / 3.20	5.00 / 5.20

The company is considering to cover the exposures either through the forward market or money market.

You are required to advise the company as to which alternative should be better for covering both the payable and receivables.

Question 3 :

A Foreign Institutional Investor from U.K. proposes to invest £ 1 million in an emerging market. After a careful analysis of future prospects, India and Hong Kong are short listed. For the next year, which is also the holding period for the FII, expected rates of returns are 15% and 12% in Indian and Hong Kong markets respectively. Withholding tax rates applicable on the returns earned are 15% in India and 12% in Hong Kong. Other information available with the FII includes:

Current exchange rates

Rs./£	69.50/70
HK $/£	11.15/18

Expected inflation for the next year

U.K. – 2%
India – 4%
Hongkong – 3%

You are required to find out the rate of return in India and Hong Kong in £ terms. Assume purchasing power parity holds good in both the countries.

Question 4 :

A US Institutional Investor decided to invest in a Indian security of b = 1.20 and standard deviation 15%. The return on the market portfolio is 15% and risk-free rate is 8% in India. Indian rupee in expected to depreciate by 4% in the next one year.

You are required to calculate expected return in dollar if the FII holds the investment for one year.

Question 5 :

A Foreign Institutional Investor (FII) is planning to invest $10 million in an Indian security with a beta of 1.40 and standard deviation of returns 10% p.a. The holding period of investment will be one year. The current rupee dollar exchange rate is Rs.48/$. The FII expects the rupee to depreciate against dollar by 4% over next one-year period, with a volatility of 8% p.a. The expected return from the market portfolio in India is 12% p.a., and the standard deviation of returns on the market portfolio is 9% p.a. Correlation between the return on the security and the exchange rate is 0.15. The risk free rate of return in India is 6% p.a.

You are required to calculate the expected return and risk for the FII.

Question 6 :

A foreign institutional investor (FII) proposes to invest $ 5 million in an Indian security with a beta of 1.25 and standard deviation of returns of 9%. The holding period of investment will be one year. The current rupee-dollar exchange rate is Rs.43.50/$. The expected appreciation of rupee against dollar over the period is 2% with a standard deviation of 6%. The expected return from the market portfolio in India is 16% and the correlation between the return on security and the exchange rate is 0.66. The risk free rate of return in India is 5%.

You are required to calculate the expected return and risk for the FII.

Question 7 :

Mr. Robinson, an Australian investor is very much interested in investing Rs.1 million in the pharmaceutical sector in India. He decides to invest in the scrip of Morepen Labs Ltd. which is listed on BSE and the details of scrip are given below

Beta of the security : 1.65

Variance of returns : $25(\%)^2$

Appreciation of Australian dollar against rupees is 3% with a variance of $10(\%)^2$. Return on BSE index is 12% annualized and return on long dated Indian Government securities is 6.5%. Assume that the correlation between the return on the scrip and Rs / AUS$ exchange rate is zero.

You are required to estimate the expected return and risk of Mr. Robinson, if his holding period is one year.

Question 8 :

A US investor chose to invest in Mumbai sensex for a period of one year with a view to earn a nominal return of 12% on the investment. The relevant information is given below.

Size of the investment	$ 5000000
Spot rate 1 year ago	Rs/$ 46.50 / 55
Spot rate now	Rs/$ 43.50 / 55
Sensex one year ago	5855
Sensex now	6087
Inflation in U.S.	2%
Inflation in India	6%

You are required to

- **a.** Compute the nominal return to the US investor
- **b.** Real return for the US investor.

c. Nominal return for the Indian investor.
d. Compute the real return to an Indian investor in Sensex.

Question 9 :

An Indian investor purchased securities on the New York stock exchange when the exchange rate was Rs.46.50. The exchange at the end of one year was Rs.45.75.

If the percentage returns on American securities is

a. –20%

b. 50%, compute the net return to the Indian investor

Question 10 :

The treasurer at an Indian company requires Rs.10 million for six months. He is exploring various options of financing and has collected the following information:

	Rs./$	Rs./£
Spot	46.90/95	65.35/40
6m forward	70/90 paise	90/100 paise
Expected spot rate after 6m	47.50/55	66.90/95

Interest rate

	Rs.	$	£
6 months	12.00%	4.00%	5.00%

You are required to advise the treasurer in which currency to borrow, if he

a. Covers the exchange risk in forward market

b. Keep the open position.

Question 11 :

An Indian Company based at Mumbai needs short term funds of Rs.50 million for a period of 3 months. The company collected the following information from its banker:

	Rs./$	Rs./£
Spot	48.50/55	74.05/10
3 months forward	45/50	85/90

3 months Interest rates (p.a.)

Rs : 9%
$: 4%
£ : 6%

You are required to calculate the annualized effective cost of borrowing,

a. If the company borrows in USD and
   i. Covers the exchange rate risk through forward market
   ii. Keeps the position open and spot rate after 3 months turns out to be Rs/$ 48.90/95.

b. If the company borrows in pounds and
   i. Covers the exchange rate risk through forward market
   ii. Keeps the position open and spot rate after 3 months turns out to be Rs/£ 74.75/80.

Question 12 :

Suppose that on January 01, 2003, the cost of borrowing dollars for the year was 8%. During the year, inflation rates in Euro zone and US were 3% and 2% respectively. If Euro/$ quotes available in the market were:

Exchange rate on the date of availing the loan (01.01.2003)	:	Euro 0.90/$
Exchange rate on the date of repaying the loan (31.12.2003)	:	Euro 0.78/$

You are required to calculate the real cost of borrowing dollars in Euro terms for the year.

Question 13 :

An Indian company, in its bid to improve the scale of operations, required a loan of US $300,000. The company's banker agreed to arrange the loan with a condition that the loan is to be repaid with interest, by making equated annual installments of US $112,000 at the end of each year for a period of three years after receipt of the loan. The current exchange rate of US dollar is Rs.47.70. The inflation rate in India is 4% and that in U.S. is 2.5%. The expected appreciation of rupee in the first year is 1% and for next two years expected depreciation of rupee is 2% and 3% respectively, on year-on-year basis.

You are required to determine the effective cost of funds in rupees to the company.

Question 14 :

An Indian software company had approached State Bank of India (SBI) for forward sale of £100,000 delivery on May 31, 2001. The bank had quoted a rate of Rs.65.60/£ for the purchase of pound sterling from the customer. But on 31st May, the customer informed the bank that it was not able to deliver the pound sterling as anticipated receivable from London has not materialized and requested the bank to extend the contract for delivery 31st July.

The following are the market quotes available on May 31, 2001:

Spot	Rs/£	66.60/65
1m forward		20/25
2m forward		41/46
3m forward		62/68

You are required to find out the extension charges payable by the software company.

Question 15 :

An Indian importer has a payable of C$ 5,00,000 due on 31.3.2002. On 01.01.2002, the importer covers the payable through forward buying of C$ at Rs.30.34 from his banker.

On 31-3-2002, he requests the banker to extend the contract till 30-4-2002. The exchange rates as on 31-3- 2002 are

Rs./C$	Spot	30.54/63
1 month forward		30.56/68

You are required to find out the net cash outflow for the importer. Also state how the bank will cover this extension of forward contract.

Question 16 :

Deccan Electronics Ltd., in Noida Export processing zone, exports split air conditioners to Germany by importing all the components from Singapore. The company is exporting 2,400 units at a price of Euro 500 per unit. The cost of imported components is S$800 per unit. The fixed costs and other variable costs per unit are Rs.1,000 and Rs.1,500 respectively. The cash flows in foreign currencies are due in six months.

The current exchange rates are as follows

Rs./Euro	: 51.50/55
Rs./S$	: 27.20/25

After six months the exchange rates (at the time of receipt and payment of foreign currency) turn out as follows:

Rs./Euro	: 52.00/05
Rs./S$	: 27.70/75

a. You are required to calculate the loss/gain due to the transaction exposure.

b. Based on the following additional information, calculate the loss/gain due to transaction and operating exposure if the contracted price of split air conditioner is Rs.25,000.

- The current exchange rates change to

  Rs./Euro : 51.75/80

  Rs./S$: 27.10/15
- Price elasticity of demand is estimated as 1.5
- Payments and receipts are to be settled/received at the end of sixth months.

Question 17 :

Poomphar Electronics Ltd in Chennai exports refrigerators to Belgium by importing all the components from South Korea. Imports are invoiced in Hong Kong dollars and exports in Euro. The company is exporting 6,000 units at a price of Euro 165 per unit. The cost of imported components is HK$ 750. The fixed costs and other variable costs per unit are Rs.1,200 and Rs.2,500 respectively. The cash flows in foreign currencies are due in six months. The current exchange rates are as follows:

Rs./Euro : 59.60/62

Rs./HK$: 5.96/5.98

After six months the exchange rates (at the time of receipt and payment of foreign currency) turn out as follows:

Rs./Euro : 60.30/32

Rs./HK$: 6.23/25

You are required to:

a. Calculate the loss/gain due to the transaction exposure.

b. Based on the following additional information, calculate the loss/gain due to transaction and operating exposure if the contracted price of washing machine is Rs.9,500.

- The current exchange rates change to

  Rs./Euro : 59.85/87

  Rs./HK$: 6.00/02
- Price elasticity of demand of the product in Germany is estimated as 2.5.
- Payment and receipts are to be settled/received at the end of six months.

Question 18 :

Techinfo Ltd. has imported speciality computer equipments worth US$ 250,000 from a company in US. The amount due for the imports is payable after 3 months. Mr. Garg, the treasury manager of Techinfo has collected the following market quotes:

Exchange rates:

Spot Rs./$ 47.15/47.30

Forward	3 month	55/60

Interest rates (p.a.):

Dollar (3 months)	6.00% / 6.50%
Rupee (3 months)	10.00% / 11.00%

The supplier of the equipments has offered a discount of $ 5000 if the payable is settled at the current date. Mr. Garg is reviewing the following alternatives to settle the payable:

i. Cover through forward market

ii. Cover through money market

iii. Avail the cash discount of $ 5000 by taking a bridge loan at 9% p.a. from a lending institution.

You are required to suggest Mr. Garg the best alternative to settle the payable.

Question 19 :

United Pharma Ltd. (UPL) has acquired an export order to export Rs.10 million of formulations to a European company. UPL is also planned to import bulk drugs worth Rs.5 million from a company in UK. The proceeds of the exports will be realized 3 months from now and the payment for imports will be due after 6 months from now. The invoicing for these exports and imports can be done in currencies dollar, euro or sterling at company's choice.

The following market quotes are available:

Spot	Rs/$	47.10 / 47.20
	Rs/Euro	43.15 / 43.20
	Rs/£	68.65 / 68.75

	Annualized Premium
$	6%
Euro	5%
£	4%

You are required to advice the company about the invoicing currency.

Question 20 :

M/s. Gemini Hitech plans to expot software products to USA worth Rs.10 million. Sister concern of Gemini Hitech, Leo Systems, plans to import equipment from Germany worth Rs.4 million.

Export proceeds of M/s. Gemini Hitech will be realized 3 months from now. Leo Systems have to make payment 6 months from now.

The market rates are:

Spot	Rs. / $	: 48.20 / 22

Rs. / Euro : 48.00 / 02

Rs. / £ : 75.25 / 27

Currency	$	£	Euro
Annualized Premium	4%	3%	2%

The invoicing can be made in any of the currencies for the exports and imports.

Advice the companies about the currency of invoicing.