(a) Drilldip will enter into buy sell swap in which Drilldip will buy ₹ 500 cr now & sell ₹ 500 cr after 1 year.

Option 1 FX Swap	**$**
Buy ₹ 500 Cr. today $\left(\frac{₹\ 500\ cr}{₹\ 50}\right)$	= (10 Cr.)
Sell ₹ 500 Cr. after 1 year $\left(\frac{₹\ 500\ cr}{₹\ 50}\right)$	= 10 Cr.
Sell ₹ 240 Cr. at 1 year expected rate $\left(\frac{₹\ 240}{54}\right)$	= 4.444 Cr.
Interest ($ 10 Cr. × 8%)	= (0.8 Cr.)
Profit	= $ 3.644 Cr.

Option 2 Do Nothing	
Buy 500 Cr. today at SR $\left(\frac{₹\ 500\ cr}{₹\ 50}\right)$	= (10Cr.)
Sell 740 Cr. at expected SR $\left(\frac{₹\ 740\ cr}{₹\ 54}\right)$	= 13.704
Interest	= (0.8 Cr.)
Profit	= $ 2.904 Cr.

FX Swap is better due to higher profit.

(13) ECONOMIC EXPOSURE

Question – 71

M/s Omega Electronics Ltd. exports 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 cost and other variables cost per unit are ₹ 1,000 and ₹ 1,500 respectively. The cash flows in Foreign currencies are due in six months. The current exchange rates are as follows:

₹/Euro	51.50/55
₹/S$	27.20/25

After six months the exchange rates turn out as follows:

₹/Euro	52.00/05
₹/S$	27.70/75

(A) You are required to calculate loss/gain due to transaction exposure.

(B) Based on the following additional information calculate the loss/gain due to transaction and operating exposure if the contracted price of air conditioners is ₹ 25,000 :

(i) the current exchange rate changes to

₹/Euro	51.75/80
₹/S$	27.10/15

(ii) Price elasticity of demand is estimated to be 1.5

(iii) Payments and receipts are to be settled at the end of six months.

(SM TYK – 48)

Solution:

(A) Calculation of Transaction Exposure

Current Exchange rate

(2,400unit × € 500 × 51.50) – (2,400 × S$ 800 × 27.25) – (2,400 × 2,500)

= ₹ 34,80,000

6 Months Exchange rate

(2,400 unit × € 500 × 52) – (2,400 × S$ 800 × 27.75) – (2,400 × 2,500)

= ₹ 31,20,000

Loss due to Exposure

₹ 34,80,000 – ₹ 31,20,000 = ₹ 3,60,000

(B) If current exchange rate change then calculation of loss due to Transaction Exposure

Current exchange rate

(2,400 unit × 25,000) – (2,400 × S$800 × 27.15) – (2,400 × 2,500)

= ₹ 18,72,000

6 Months Exchange rate

(2,400 unit × 25,000) – (2,400 × S$800 × 27.75) – (2,400 × 2,500)

= ₹ 7,20,000

Loss due to Transaction Exposure = ₹ 11,52,000

Calculation of new demand of units

Price of unit of German customer at old rate

$\frac{₹\ 25,000}{51.50}$ = € 485.44

Price of unit at new exchange rate

$\frac{₹\ 25,000}{51.75}$ = € 483.09

% decrease in price = $\frac{€\ 485.44 - €483.09}{€\ 485.44} \times 100 = 0.48\%$

% Increase in demand = 0.48 × 1.5 = 0.72%

New units = 2,400 × 0.72% = 17 Units

Total Unit = 2,400 + 17 = 2,417 unit

Profit due to increase in new unit 6 month

(2,417 unit × 25,000) – (2,417 × S$ 800 × 27.75) – (2,400 × 1,000) – (2417 × 1,500)

= 7,42,100

Loss due to economics exposure = 18,72,000 – 7,42,100

= 11,29,900

(14) NDF CONTRACT

Question – 72

On 1st February 2020, XYZ Ltd. a laptop manufacturer imported a particular type of Memory Chips from SKH Semiconductor of South Korea. The payment is due in one month from the date of Invoice, amounting to 1190 Million South Korean Won (SKW). Following Spot Exchange Rates (1st February) are quoted in two different markets:

USD/ INR 75.00/ 75.50 in Mumbai

USD/ SKW 1190.00/ 1190.75 in New York

Since hedging of Foreign Exchange Risk was part of company's strategic policy and no contract for hedging in SKW was available at any in-shore market, it approached an off-shore Non Deliverable Forward (NDF) Market for hedging the same risk.

In NDF Market a dealer quoted one-month USD/ SKW at 1190.00/1190.50 for notional amount of USD 100,000 to be settled at reference rate declared by Bank of Korea.

After 1 month (1st March 2020) the dealer agreed for SKW 1185/ USD as rate for settlement and on the same day the Spot Rates in the above markets were as follows:

USD/ INR 75.50/ 75.75 in Mumbai

USD/ SKW 1188.00/ 1188.50 in New York

Analyze the position of company under each of the following cases, comparing with Spot Position of 1st February:

(i) Do Nothing.

(ii) Opting for NDF Contract. Note: Both Rs./ SKW Rate and final payment (to be computed in Rs. Lakh) to be rounded off upto 4 decimal points. (10 Marks)

(MTP April – 2021)

Solution:

At Spot Rate

If SKS 1,190 million today

₹/$ = 75.50

SKW/$ = 1,190

₹/SKW $= 75.50 \times \frac{1}{1190}$

$= 0.0634$

SKW 1,190 × 0.0684

= ₹ 75.446 m

= ₹ 754.46 lacs

Option 1: Do Nothing

Buy SKW 1,190 millions at 1 months SR

₹/$ = 75.50

SKW/$ = 1188

₹/SKW $= 75.50 \times \frac{1}{1,188}$

$= 0.0638$

SKW 1,190 millions × 0.0638 = 75.922 millions

= 75.922 lacs

Loss = 759.22 – 754.46 = 4.76 lacs

Option 2: NDF Contract

Since SKW payable & we afraid from SKW rising but we have to take position on $, hence we should take short position (sell) on $ at SKW/$ 1,190

Amount of short position ($) $= \frac{\text{SKW } 1,190 \text{ m}}{1,190} = \$ 1\text{million}$

= or $ 10,00,000

Gain or Loss

On maturity, SKW/$ is 1,185 hence gain on short position

(SKW 1,190 – SKW 1,185) × $ 10,00,000	= $ SKW 50,00,000
Gain in $ = $\frac{\text{SKW } 50,00,000}{1,185}$	= $ 4,219.4093
Buy SKW 1190 millions at 1 month SR	= ₹ 759.22 lacs
(-) Sell $ 4,219.4093 at 1 month SR ($ 4,219.4093 × 75.50)	= ₹ 3.1856 lacs
	= ₹ 756.0343 lacs
Loss = ₹ 756.0343 – 754.46	= 1.5743 lacs

NDF contract & better due to less loss.

(15) RESIDUAL

Question – 73

M/s. Sky products Ltd., of Mumbai, an exporter of sea foods has submitted a 60 days bill for EUR 5,00,000 drawn under an irrevocable Letter of Credit for negotiation. The company has desired to keep 50% of the bill amount under the Exchange Earners Foreign Currency Account (EEFC). The rates for ₹/USD and USD/EUR in inter-bank market are quoted as follows:

	₹/ USD	USD/EUR
Spot	67.8000 – 67.8100	1.0775 – 1.8000
1 month forward	10/11 Paise	0.20/0.25 Cents
2 months forward	21/22 Paise	0.40/0.45 Cents
3 months forward	32/33 Paise	0.70/0.75 Cents

Transit Period is 20 days. Interest on post shipment credit is 8% p.a.

Exchange Margin is 0.1%. Assume 365 days in a year.

You are required to calculate:

(i) Exchange rate quoted to the company

(ii) Cash inflow to the company

(iii) Interest amount to be paid to bank by the company.

(Exam January – 2021)

Solution:

(i) Exchange rate quoted to the company

60 pay FR	
$/€	1.0775
(+) 2 months swap	0.0040
$/€	1.0815
₹/$	67.8000
(+) 2 months swap	0.2100
	₹ 68.0100
(-) margin	- 0.1%
	₹ 67.9420

₹/€ = ₹ 67.9420 × 1.0815

= ₹ 73.4793

(ii) Cash inflow = € 2,50,000 × 73.47793

= ₹ 1,83,69,825

(iii) Interest on post shipment credit

₹ 1,83,69,825 × 8% × 80/365 = ₹ 3,22,101

Question – 74

ABC Ltd. of UK has exported goods worth Can $ 5,00,000 receivable in 6 months. The exporter wants to hedge the receipt in the forward market. The following information is available:

Spot Exchange Rate	Can $ 2.5/£
Interest Rate in UK	12%
Interest Rate In Canada	15%

The forward rates truly reflect the interest rates differential. Find out the gain/loss to UK exporter if Can $ spot rates (i) declines 2%, (ii) gains 4% or (iii) remains unchanged over next 6 months.

(SM TYK – 04)

Solution:

Calculation of FR

$$FR = SR_A \times \frac{1 + r_A}{1 + r}$$

$$= C\$\ 2.5 \times \frac{1.075}{1.06}$$

C$/£ = C$ 2.535

Gain/Loss

(i) C$ decline by 2 % (2.5 × 1.02) = 2.55

Receivable under FC	$= \frac{C\$\ 5,00,000}{2.535}$	= £ 1,97,238.66
Receivable under	$= \frac{C\$\ 5,00,000}{2.55}$	= £ 1,96,078.43
Gain		= £ 1,160.23

(ii) C$ gain by 4% [2.5 × 0.96 = 2.40]

Forward cover	$ 1,97,238.66
Expected SR $\left(\frac{C\$\ 5,00,000}{2.40}\right)$	$ 2,08,333.33
Loss	$ 11,094.67

(iii) Remains unchanged

Forward cover	$ 1,97,238.66
Expected SR $\left(\frac{C\$\ 5,00,000}{2.5}\right)$	$ 2,00,000
Loss	$ 2,761.34

Question – 75

Your forex dealer had entered into a cross currency deal and had sold US $ 10,00,000 against EURO at US $ 1 = EURO 1.4400 for spot delivery.

However, later during the day, the market became volatile and the dealer in compliance with his management's guidelines had to square – up the position when the quotations were:

Spot US $ 1	INR 31.4300/4500
1 month margin	25/20
2 months margin	45/35
Spot US $ 1	EURO 1.4400/4450
1 month forward	1.4425/4490
2 months forward	1.4460/4530

What will be the gain or loss in the transaction?

(SM TYK – 46)

Solution:

Gain/loss in €

Selling rate	= € 1.4400
Buying rate	= € 1.4450
Loss	= € 0.0050 per $
(×) Contract size	= $ 10,00,000
Loss	= € 5,000

Loss in ₹ (Ask Rate)

₹/€ $= 31.4500 \times \frac{1}{1.4400}$

$= 21.8403$

$= € 5,000 \times 21.8403$

= ₹ 1,09,201

Question – 76

Following are the details of cash inflows and outflows in foreign currency denominations of MNP Co. an Indian export firm, which have no foreign subsidiaries:

Currency	Inflow	Outflow	Spot Rate	Forward Rate
US $	4,00,00,000	2,00,00,000	48.01	48.82
French Franc (FFr)	2,00,00,000	80,00,000	7.45	8.12
U.K. £	3,00,00,000	2,00,00,000	75.57	75.98
Japanese Yen	1,50,00,000	2,50,00,000	3.20	2.40

(i) Determine the net exposure of each foreign currency in terms of Rupees.

(ii) Are any of the exposure positions offsetting to some extent?

(SM TYK – 10)

Solution:

(i) Net exposure of each foreign currency in ₹

Currency	Net inflow	Spread	Net exposure
$	2,00,00,000	0.81	1,62,00,000
FFr	1,20,00,000	0.67	80,40,000
£	1,00,00,000	0.41	41,00,000
¥	-1,00,00,000	-0.80	80,00,000

(ii) The exposure of Japanese ¥ position is being offset by better forward rate.

MULTIPLE CHOICE QUESTIONS

Case Scenario 1

On 1 October 2023 Mr. X an exporter enters into a forward contract with a BNP Bank to sell US$ 1,00,000 on 31 December 2023 at ₹ 85.40/$. However, due to the request of the importer, Mr. X received the amount on 28 November 2023. Mr. X requested the bank the take delivery of the remittance on 30 November 2023 i.e., before due date. The inter-banking rates on 28 November 2023 was as follows:

Spot ₹ 85.22/85.27