Study Notes for
NISM Series I :
CURRENCY DERIVATIVES CERTIFICATION EXAM (CD)

Version – March 2020

Prepared By

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NISM SERIES I: CURRENCY DERIVATIVES

Exam Details

Total Questions	**100 X 1 Marks**
Type	**Multiple Choice**
Pass Score	**60%**
Duration	**2 Hours**
Negative marks	**-0.25**

Chapterwise Weightages

Chapter No.	Chapter Name	Weightages
1	Introduction to currency markets	12
2	Foreign exchange derivatives	5
3	Exchange traded currency futures	6
4	Strategies using currency futures	24
5	Trading in currency futures	6
6	Clearing, Settlement and Risk Management in currency futures	16
7	Exchange traded currency options	15
8	Accounting and Taxation	5
9	Regulatory framework for currency derivatives	6
10	Codes of conduct and Investor protection measures	5
	Total Marks	100

Chapter 1: Introduction to Currency Markets

(FX) is the value of one currency of one country versus value of currency of other country. Each country has its own “brand” alongside its flag. When money is branded it is called “currency”. Whenever there is a cross-border trade, there is need to exchange one brand of money for another, and this exchange of two currencies is called “foreign exchange” or simply “forex” (FX).

The documented history suggests that sometime in 1870 countries agreed to value their currencies against value of currency of other country using gold as the benchmark for valuation. As per this process, central banks issue paper currency and hold equivalent amount of gold in their reserve. The value of each currency against another currency was derived from gold exchange rate. For example, if one unit of gold is valued at Indian Rupees (INR) 10,000 and US dollar (USD) 500 than the exchange rate of INR versus USD would be 1 USD = INR 20. This mechanism of valuing currency was called as **Gold Standard**.

During 1944-1971, countries adopted a system called **Bretton Woods System**. This system was a blend of gold standard system and floating rate system. As part of the system, all currencies were pegged to USD at a fixed rate and USD value was pegged to gold. The US guaranteed to other central banks that they can convert their currency into USD at any time and USD value will be pegged to value of gold. Countries also agreed to maintain the exchange rate in the range of plus or minus 1% of the fixed parity with US dollar. With adoption of this system, USD became the dominant currency of the world

Finally Bretton Woods system was suspended and countries adopted system of free floating or managed float method of valuing the currency. Developed countries gradually moved to a market determined exchange rate and developing countries adopted either a system of pegged currency or a system of managed rate

Major currency pairs

The most traded currency pairs in the world are called the ***Majors***. The list includes following currencies: Euro (EUR), US Dollar (USD), Japanese Yen (JPY), Pound Sterling (GBP), Australian Dollar (AUD), Canadian Dollar (CAD), and the Swiss Franc (CHF). These currencies follow free floating method of valuation. Amongst these currencies the most active currency pairs are: EURUSD, USDJPY, GBPUSD, AUDUSD, CADUSD, USDCNY and USDCHF

US Dollar (USD)

The US Dollar reflects its substantial international role as "**investment**" currency in many capital markets, "**reserve**" currency held by many central banks, "**transaction**" currency in many international commodity markets, "**invoice**" currency in many contracts, and "**intervention**" currency employed by monetary authorities in market operations to influence their own exchange rates. In addition, the widespread trading of the US Dollar reflects its use as a "**vehicle**" currency in foreign exchange transactions, a use that reinforces its international role in trade and finance.

Euro (EUR)

Like the US Dollar, the Euro has a strong international presence and over the years has emerged as a premier currency, second only to the US Dollar.

Japanese Yen (JPY) The Japanese Yen is the third most traded currency in the world. It has a much smaller international presence than the US Dollar or the Euro

British Pound (GBP) The nickname **Cable** is derived from the telegrams used to update the GBPUSD rates across the Atlantic

Swiss Franc (CHF) The Swiss Franc is the currency of Switzerland and is represented with the symbol CHF. It is one of the most stable currencies in the world.

Currency pair - Base Currency / Quotation Currency

Every trade in FX market is a currency pair. The two currencies are called "**base currency**" (BC) and "**quoting currency**" (QC). The BC is the currency that is priced and its amount is fixed at one unit. The other currency is the QC, which prices the BC, and its amount varies as the price of BC varies in the market. What is quoted throughout the FX market anywhere in the world is the price of BC expressed in QC.

In the interbank market, USD is the universal base currency other than quoted against Euro (EUR), Sterling Pound (GBP), Australian Dollar (AUD), Canadian Dollar (CAD) and New Zealand Dollar (NZD).

Interbank & Merchant Market

There are two distinct segment of OTC foreign exchange market. One segment is called as "**interbank**" market and the other is called as "**merchant**" market. Interbank market is the market between banks where dealers quote prices at the same time for both buying and selling the currency. The mechanism of quoting price for both buying and selling is called as **market making**.

In majority of the "merchant" market, merchants are price takers and banks are price givers.

Two way quotes

In interbank market, currency prices are always quoted with two way price. In a two way quote, the prices quoted for buying is called bid price and the price quoted for selling is called as offer or ask price.

Suppose a bank quotes USDINR spot price as 70.05/ 70.06 to a merchant. In this quote, 70.05 is the *bid* price and 70.06 is the offer *price* or *ask* price. This quotes means that the bank is willing to buy one unit of USD for a price of INR 70.05 and is willing to sell one unit of USD for INR 70.06. The difference between bid and offer price is called as "**spread**". Clearly, a narrow spread indicates a higher liquidity and higher efficiency of the market maker

Appreciation/ Depreciation

Exchange rates are constantly changing, which means that the value of one currency in terms of the other is constantly in flux. Changes in rates are expressed as strengthening or weakening of one currency vis-a-vis- other currency. Changes are also expressed as appreciation or depreciation of one currency in terms of the other currency. Whenever the base currency buys more of the quotation currency, the base currency has strengthened / appreciated and the quotation currency has weakened / depreciated. For example, if USDINR has moved from 68.00 to 68.25, the USD has appreciated and the INR has depreciated.

Market timing

In India, OTC market is open from 9:00 AM to 5:00 PM. However, for merchants the market is open from 9:00 AM to 4:30 PM and the last half hour is meant only for interbank dealings for banks to square off excess positions

Price benchmarks

There are two price benchmarks used in the OTC market to price merchant transactions.

- Banks price large value merchant transactions from **interbank rate (IBR**).
- IBR is the price available to the bank in the interbank market. Therefore IBR could differ from bank to bank.
- For small value transactions, banks publish a standard price for the day called as **card rate**.
- On most days for most banks, the card rate is same for the whole day.
- However on the days of high volatility, banks revise the card rate multiple times during the day. The difference between IBR and card rate is high to cover the risk of price fluctuation.
- Card rate could vary significantly from bank to bank.

FBIL Reference Rates

The FBIL reference rate is calculated for USD/INR, GBP/INR, EUR/INR and JPY /INR. The USD/INR reference rate is calculated based on actual spot USD/INR transactions taking place on the electronic platforms such as CCIL and Thomson Reuters between 11:30 to 12:30 hours on each working day. A 15 minutes' random time period is generated from this one-hour window and the transactions data pertaining to this 15 minutes' time period is taken to calculate the USD/INR reference rate. A threshold criterion of 10 transactions aggregating USD 25 million is required for the calculation of the reference rate. A +/- 3SD rule is applied to this transaction data in order to remove the outliers. The reference rate is calculated as the volume-weighted average of the surviving transactions (after removing the outliers).

If the first randomly selected time period of 15 minutes does not contain adequate number of transactions satisfying the threshold criteria, up to a maximum of 5 such random 15 minutes' time period will be generated to obtain adequate number of transactions. If the rate still cannot be calculated, then the transactions for the entire one-hour window from 11:30 hours to 12:30 hours will be taken into account for calculating the reference rate. In case of systems / network failures, if the required transactions are not available, FBIL will compute the USD/INR reference rate using polled submission by select major AD banks in India.

The EUR/INR, GBP/INR and JPY/INR reference rates are computed by crossing the USD/INR reference rate of the day with the ruling EUR/USD, GBP/USD and USD/JPY spot rates. For this purpose, all the cross-currency rates (i.e., EUR/USD, GBP/USD and USD/JPY spot rates) are taken from the same randomly selected time-period of 15 minutes that is used for the calculation of the USD/INR reference rate. The mean of the prices, so obtained, are crossed with the USD/INR reference rate to calculate the EUR/INR, GBP/INR and JPY/INR reference rates.

The reference rates are published on the FBIL website www.fbil.org.in on all working days except on Saturday, Sunday and bank holidays in Mumbai. The reference rates in respect of USD, EURO and GBP are published for 1 unit of USD, 1 unit of Euro and 1 unit of GBP whereas the reference rate in respect of JPY is published for 100 units of JPY. Also, the reference rates of USD/INR, EUR/INR and GBP/INR are published up to 4 decimal places and JPY/INR reference rate up to 2 decimal places.

Settlement date or Value date

Unlike currency futures market, the settlement in the OTC spot market happens by actual delivery of currency. The mechanism of settlement where each counterparty exchange the goods traded on the maturity of contract is called as gross settlement and the mechanism where market participants only settle the difference in value of goods is called as net settlement. For example, in currency futures market suppose an exporter sells one month USDINR futures c ontract at 68.5. On termination of contract (either on expiry or even before expiry), if the price of USDINR is 68.2 the exporter will receive the difference of 68.5 and 68.2 i.e. Rs 0.3 per USD. In OTC spot market, suppose an exporter sells one million of USD at a price of 68.5. On the settlement date, he will deliver one million of USD to the bank and receive Rs 68,500,000 from the bank.

In OTC currency market, settlement date is also called as value date. Please note that value date is different from trade date. On trade date, the two counterparties agree to a transaction with certain terms (currency, price, and amount and value date). The settlement of the transaction, when counterparties actually exchange currency, is called as value date.

The most important value date is the "spot" value date, which is settlement after two business days. In practice, it can be after "two business days" because the settlement takes place in two different centers that may have different holidays. The correct definiti on of spot value date is settlement on second business day, subject to both centers being open on that day. If one of them is closed, then the settlement will be on the next business day (w hich could be third or fourth, etc, after the trade date) on which both centers are simultaneously open. Any settlement date after spot value date is called "forward" value dates, which are standardized into 1-month, 2-month, etc after spot value date. The forward market can extend up to one year.

OTC forward market

The forward OTC market can provide quotes for booking a forward contract for any maturity. However, the liquidity is high for maturity less than 1 year and beyond that liquidity is less.

One more unique feature of OTC forward market is the requirement of underlying trade contract before executing the forward contract. According to RBI guidelines, any resident Indian desiring to book a forward contract should have an underlying trade contract which could establish exposure to foreign currency. The amount and tenor of the contract booked has to be equal to or less than the amount and tenor of foreign exchange exposure as suggested by the underlying trade contract. The market participant is expected to submit the trade contract to bank within 15 days of booking the forward contract.

Exchange rate arithmetic- cross rate

EURINR The underlying currency pairs for deriving prices of EURINR are EURUSD and USDI NR. Let us assume following prices: EURUSD: 1.0925 / 1.0950; USDINR: 68.02 / 68.03

To buy 1 unit of USD, the applicable price is 68.03 INR (offer side) i.e., you need INR 68.03 to buy 1 unit of USD. Now you need to sell certain units of USD (received by selling INR) to buy 1 unit of EUR. The price for buying 1 unit of EUR is 1.0950 USD (offer side).

We identified the price of buying 1 unit of USD as 68.03. Therefore price of buying 1.0950 units of USD would be 1.0950 x 68.03 INR i.e. 74.4929 INR. Therefore the price of buying 1 unit of EUR in terms of INR is 74.4929 INR. Similarly you could use the logic for selling 1unit of EUR

and derive its price in terms of INR. The price comes to 74.3119 (1.0925 x 68.02). Therefore the cross rate for EURINR would be 74.3119 / 74.4929.

GBPINR - The underlying currency pairs are GBPUSD and USDINR. Assume GBPUSD price as 1.4400 / 1.4425 and USDINR as 68.02 / 68.03, the price for GBPINR works out to be 9 7.9488 / 98.1333

JPYINR - For JPYINR, the market convention is to quote price of 100 JPY in terms of INR. In all other pairs mentioned above, the convention is price of 1 unit of base currency in terms of quotation currency. The computation of JPYINR from USDJPY and USDINR is slightly different from the computation of GBPINR or EURINR. We will describe below the computation of JPYINR from USDJPY and USDINR. Assume USDJPY price as 120.60 / 120.61 and USDINR as 68.02 / 68.03

To buy 1 unit of USD, the applicable price is 68.03 INR (offer side) i.e., you need INR 68.03 to buy 1 unit of USD. Now you need to sell one unit of USD (received by selling INR) and buy JPY. The price for selling one unit of USD is 120.60 (bid side). Therefore you get 120.60 JPY by spending 68.03 INR. Thus price of buying 1 JPY is 68.03/120.60 i.e. 0.564096 INR or in other words price of buying 100 JPY is 56.4096 INR. Similarly, price of selling 1 JPY is 68.02/120.61 i.e. 0.563967 or in other words price of selling 100 JPY is 56.3967 INR. Thus price of JPYINR (for 100 JPY) would be 56.3967 / 56.4096 INR.

Gross Domestic Product (GDP) - GDP represents the total market value of all goods and services produced in a country during a given year. A GDP growth rate higher than expected may mean relative strengthening of the currency of that country, assuming everything else remaining the same.
The Index of Industrial Production (IIP) shows the changes in the production in the industrial sector of an economy in a given period of time, in comparison with a fixed reference point in the past. In India, the fixed reference point is 2011-12 and the IIP numbers are reported using 2011-12 as the base year for comparison.
CPI is a statistical time-series measure of a weighted average of prices of a specified set of goods and services purchased by consumers. It is a price index that tracks the prices of a specified basket of consumer goods and services, providing a measure of inflation. CPI is a fixed quantity price index and considered by some a cost of living index.

In US, The Federal Open Market Committee (FOMC), a component of the Federal Reserve System, is responsible for making key decisions about interest rates and the growth of the money supply

Chapter 2: Foreign Exchange Derivatives

Derivative is a product whose value is derived from the value of one or more basic variables, called bases (underlying asset, index, or reference rate). The underlying asset can be equity, foreign exchange, commodity or any other asset.

Forwards: A forward contract is a customized OTC contract between two parties, where settlement takes place on a specific date in the future at today's pre-agreed price

Swaps: Swaps are agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:

• *Interest rate swaps:* These entail swapping only the interest related cash flows between the parties in the same currency.

• *Currency swaps:* These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

Market players - The following three broad categories of participants - hedgers, speculators, and arbitrageurs - trade in the derivatives market

Key economic function of derivatives

1. Discovery of Future prices
2. Derivatives market helps to transfer risks from those who have them to those who have an appetite for risks.
3. Higher Trading Volumes due to Increased Participation
4. Speculative trades shifted to controlled & regulated environment.
5. Catalyst for new entrepreneurial activity

Chapter 3: Exchange Traded Currency Futures

A tick is the minimum size of price change. The market price will change only in multiples of the tick. Tick values differ for different currency pairs and different underlyings. For e.g. in the case of the USDINR currency futures contract the tick size shall be 0.25 paise or 0.0025 Rupee
The contract amount (or "market lot") is the minimum amount that can be traded. Therefore, the profit/loss associated with change of one tick is: **tick x contract amount**

Futures terminology

Contract cycle: The period over which a contract trades. The currency futures contracts on the SEBI recognized exchanges have one-month, two-month, and three-month up to twelve-month expiry cycles. Hence, these exchanges will have 12 contracts outstanding at any given point in time

Value Date/Final Settlement Date: The last business day of the month will be termed as the Value date / Final Settlement date of each contract. The last business day would be taken to be the same as that for Inter-bank Settlements in Mumbai. The rules for Inter-bank Settlements, including those for 'known holidays' and 'subsequently declared holiday' would be those as laid down by Foreign Exchange Dealers' Association of India (FEDAI).

Expiry date: Also called Last Trading Day, it is the day on which trading ceases in the contract; and is two working days prior to the final settlement date

Contract size: The amount of asset that has to be delivered under one contract. Also called as lot size. In the case of USDINR it is USD 1000; EURINR it is EUR 1000; GBPINR it is GBP 1000 and in case of JPYINR it is JPY 100,000 . Further, in case of EURUSD, the contract size is EUR 1000, for GBPUSD it is GBP 1000 and for USDJPY it is USD 1000.

Initial margin: The amount that must be deposited in the margin account at the time a futures contract is first entered into is known as initial margin.

Marking-to-market: In the futures market, at the end of each trading day, the margin account is adjusted to reflect the investor's gain or loss depending upon the futures closing price. This is called marking-to-market.

Advantages of Futures:

- Price transparency.
- Elimination of Counterparty credit risk.
- Access to all types of market participants. The OTC market is restricted to Authorized
- Dealers (banks which are licensed by RBI to deal in FX), individuals and entities with forex exposures. Retail speculators with no exposure to FX cannot trade in OTC market.
- Generally speaking, futures offer low cost of trading as compared to OTC market.

Limitations of Futures:

The benefit of standardization, though improves liquidity in futures, leads to imperfect hedge since the amount and settlement dates cannot be customized.

While margining and daily settlement is a prudent risk management policy, some clients may prefer not to incur this cost in favor of OTC forwards, where collateral is usually not demanded.

Concept of interest rate parity Let us assume that risk free interest rate for one year deposit in India is 7% and in USA it is 3%. You as smart trader/ investor will raise money from USA and deploy it in India and try to capture the arbitrage of 4%.

$F = S \times (1 + R_{QC} \times \text{Period}) / (1 + R_{BC} \times \text{Period})$ Where F = forward price S = spot price R_{BC} = interest rate on base currency R_{QC} = interest rate on quoting currency Period = forward period in years

The formula is generalized for other currency pair and is given below: $F = S + (S \times (R_{QC} - R_{BC}) \times \text{Period})$

Concept of premium and discount

Suppose 6 month interest rate in India is 5% (or 10% per annum) and in USA are 1% (2% per annum). The current USDINR spot rate is 68. What is the likely 6 month USDINR futures price?

As per interest rate parity, future rate is equal to the interest rate differential between two currency pairs. Therefore approximately 6 month future rate would be:

Spot + 6 month interest difference = 68 + 4% of 68 = 68 + 2.72 = 70.72

The exact rate could be calculated using the formula mentioned above and the answer comes to 70.69.

70.69 = 68 x (1+0.10*0.5) / (1+0.02*0.5)

In any currency pair, future value of a currency with high interest rate is at a discount (in relation to spot price) to the currency with low interest rate.

Chapter 4: Strategies Using Currency Futures

Hedgers

These types of participants have a real exposure to foreign currency risk on account of their underlying business and their objective is to remove the FX risk using currency futures. The exposure could be because of imports/ exports of goods/services, foreign investments or foreign expenditure on account of travel, studies or any other type of need resulting in FX exposure. The objective of hedgers is to reduce the volatility in future cash flows by locking in the future currency rates

Speculators

This set of market participants does not have a real exposure to foreign currency risk. These participants assume FX risk by taking a view on the market direction and hope to make returns by taking the price risk

Arbitrageurs

This set of market participants identify mispricing in the market and use it for making profit. They have neither exposure to risk and nor do they take the risk. Arbitrageurs lock in a profit by simultaneously entering opposite side transactions in two or more markets.

Triangular Arbitrage

Triangular arbitrage involves identifying and exploiting the arbitrage opportunity resulting from price differences among three different currencies in the forex market. It involves three trades: exchanging the first currency for a second currency, exchanging the second currency for a third currency and exchanging the third currency for the first currency. Like all other arbitrage opportunities, this triangular arbitrage also possible only when the exchange rates are not aligned with the implicit cross exchange rate.

Trading spreads using currency futures

Spread refers to difference in prices of two futures contracts. A good understanding of spread relation in terms of pair spread is essential to earn profit. Considerable knowledge of a particular currency pair is also necessary to enable the trader to use spread trading strategy. Spread movement is based on following factors:

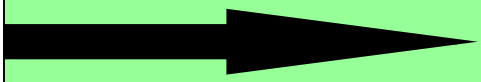
• Interest Rate Differentials

• Liquidity in Banking System

• Monetary Policy Decisions (Repo, Reverse Repo and CRR)

Intra-Currency Pair Spread (also called as “calendar spread”): An intra-currency pair spread consists of one long futures and one short futures contract. Both have the same underlying but different maturities. Inter-Currency Pair Spread: An inter–currency pair spread is a long-short position in futures on different underlying currency pairs. Both typically have the same maturity.

NOTE : There will be around 20 numerical problems based on Chapter 4.

Sellers of $		**Buyers of $**
Fund Flows into India		Fund Flows out of India
		
Exporters (eg . IT Companies)	RBI (INDIA)	***Importers (eg. Oil Marketing Companies)***
FPI / FDI Inflows		***FPI Outflows***
Foreign Tourists coming to India		***Indians going on Foreign Tours***
Foreigner /NRI buying Indian Assets		***Indians investing in Foreign Assets***
NRI Remittance into India		
HEDGING STRATEGY		**HEDGING STRATEGY**
Sell USDINR futures		**Buy USDINR futures**

Chapter 5: Trading in Currency Futures

Contract specification: USDINR, EURINR, GBPINR and JPYINR Currency Derivatives	
Underlying	Foreign currency as base currency and INR as quoting currency
Contract Size	USD 1000 (for USDINR), EUR 1000 (for EURINR), GBP 1000 (for GBPINR) and JPY 100,000 (for JPYINR)
Tick Size	0.25 Paise (i.e., Rs 0.0025)
Quotation	The contract would be quoted in Rupee terms. However, outstanding position would be in USD, EUR, GBP and JPY terms for USDINR, EURINR, GBPINR and JPYINR contracts respectively
Contract trading cycle	Maximum of 12 calendar months from current calendar month. New contract will be introduced following the Expiry of current month contract
Last trading day (or Expiry day)	Two working days prior to the last business day of the expiry month at 12:30 pm. If last trading day is a trading holiday, then the last trading day shall be the previous trading day.
Final Settlement Day	Last working day (excluding Saturdays) of the expiry month. The last working day will be the same as that for Interbank settlements in Mumbai. The rules for Interbank Settlements, including those for 'known holidays' and 'subsequently declared holiday would be those as laid down by FEDAI.
Settlement Basis	Daily mark to market settlement will be on a T +1 basis and final settlement will be cash settled on T+2 basis.
Mode of Settlement	Cash settled in INR
Daily Settlement Price	Daily mark to market settlement price will be announced by the exchange, based on volume-weighted average price in the last half an hour of trading, or a theoretical price if there is no trading in the last half hour.
Final Settlement Price	FBIL reference rate (Financial Benchmark India Private Ltd)

Contract specification: Cross Currency Derivatives	
Underlying	In case of EURUSD and GBPUSD, the contract would be quoted in USD (i.e., EUR and GBP would be the base currency and USD would be the quoting currency). The outstanding positions would be in EUR and GBP terms respectively. In case of USDJPY, the contract would be quoted in JPY (i.e., USD would be the base currency and JPY would be the quoting currency). The outstanding positions would be in USD terms.
Market timing Monday to Friday, 9:00 AM to 7:30 PM	Monday to Friday, 9:00 AM to 7:30 PM

Contract Size	EUR 1000 (for EURUSD), GBP 1000 (for GBPUSD) and USD 1000 (for USDJPY)
Tick Size	0.0001 USD for EURUSD & GBPUSD and 0.01 JPY for USDJPY
Contract trading cycle	Maximum of 12 calendar months from current calendar month. New contract will be introduced following the Expiry of current month contract.
Last trading day (or Expiry day)	Two working days prior to the last business day of the expiry month at 12:30 pm. If last trading day is a trading holiday, then the last trading day shall be the previous trading day.
Final Settlement Day	Last working day (excluding Saturdays) of the expiry month. The last working day will be the same as that for Interbank settlements in Mumbai. The rules for Interbank Settlements, including those for 'known holidays' and 'subsequently declared holiday would be those as laid down by FEDAI.
Settlement Basis	Daily mark to market settlement will be on a T +1 basis and final settlement will be cash settled on T+2 basis.
Mode of Settlement	Cash settled in INR
Daily Settlement Price	Daily mark to market settlement price will be announced by the exchange, based on volume-weighted average price in the last half an hour of trading, or a theoretical price if there is no trading in the last half hour.
Final Settlement Price	FBIL reference rate (Financial Benchmark India Private Ltd)

Base Price Base price of the futures contracts on the first day of its life shall be the theoretical futures price. The base price of the contracts on subsequent trading days will be the daily settlement price of the previous trading day.

Settlement Price (or Closing Price) The closing price for a futures contract is currently calculated as the last half an hour weighted average price of the contract. In case a futures contract is not traded on a day or not traded during the last half hour, a 'theoretical settlement price' is computed as may be decided by the relevant authority from time to time

Tenor of futures contract - The tenor of a contract means the period when the contract will be available for futures trading, i.e. the cycle" of the contract. The currency futures contracts are available for trading for all maturities from 1 to 12 months. In addition to these, 11 weekly expiry contracts are also available.

Entities in the trading system

Trading Members (TM): Trading members are members of an authorized Exchange. They can trade either on their own account or on behalf of their clients including participants. The exchange assigns a trading member ID to each trading member.

Clearing Members (CM): Clearing members are members of the Clearing Corporation. They carry out risk management activities and confirmation/inquiry of participant trades through the trading system.

Trading-cum-Clearing Member (TCM): A member with a right to trade on its own account as well as on account of its clients. He can clear and settle the trades for self and for others through the Clearing House.

Professional Clearing Members (PCM): A professional clearing member is a clearing member who is not a trading member. Typically, banks and custodians become professional clearing members and clear and settle for their trading members and participants.

Participants: A participant is a client of a trading member- like financial institutions. These clients may trade through multiple trading members but settle through a single clearing member.

Authorised Persons (APs): SEBI had earlier allowed spread of sub-brokership as well as Authorised Person's network to expand the brokers' network. However, SEBI Board in its meeting held on June 21, 2018 decided that sub-brokers as an intermediary shall cease to exist with effect from April 01, 2019. All existing sub-brokers would migrate to become Authorised Persons (APs) or Trading Members if the sub-brokers meet the eligibility criteria

Price Limit Circuit Filter

SEBI prescribes stock exchanges to implement a mechanism of Dynamic Price Bands so as to prevent acceptance of orders placed beyond the price limits set by the stock exchanges. These dynamic price bands are applicable to all currency futures positions including the cross currency futures contracts

Contracts with tenure up to 6 months	**± 3% of the theoretical price or the previous day closing price**
Contracts with tenure greater than 6 months	**± 5% of the theoretical price or the previous day closing price**

The exchanges relax the dynamic price bands in increments of 1% as and when a market-wide trend is observed.

Chapter 6: Clearing, Settlement and Risk Management in Currency Futures

Clearing vs. Settlement

Clearing means computing open positions and obligations of clearing members in the trading system. Whereas, settlement means actual pay in or pay out to settle the contract. The open positions computation is used to arrive at daily mark to market margin requirement and maintaining exposure norms. The settlement could be of mark to market settlement which happens on daily basis or could be final settlement which happens at the expiry of the contract.

Settlement mechanism

All futures contracts are cash settled, i.e. through exchange of cash in Indian Rupees. The settlement amount for a CM is netted across all their TMs/clients, with respect to their obligations on Mark-to-Market (MTM) settlement

Mark-to-Market settlement (MTM Settlement)

The computational methodology is given below:

A. For squared off position: The buy price and the sell price for contracts executed during the day and squared off.

B. For positions not squared off: The trade price and the day's settlement price for contracts executed during the day but not squared up.

C. For brought forward positions: The previous day's settlement price and the current day's settlement price for brought forward contracts.

Initial Margin

The initial security deposit paid by a member is considered as his initial margin for the purpose of allowable exposure limits. Initially, every member is allowed to take exposures up to the level permissible on the basis of the initial deposit. The Initial Margin requirement is based on a worst case loss of a portfolio of an individual client across various scenarios of price changes. The various scenarios of price changes would be so computed so as to cover a 99% Value at Risk (VaR) over a one-day horizon. In order to achieve this, the price scan range is fixed at 3.5 standard deviation. The initial margin so computed would be subject to a minimum margin for the first day of trading and a minimum margin % thereafter. The initial margin shall be deducted from the liquid net worth of the clearing member on an online, real-time basis.

Real-Time Computation

The computation of worst scenario loss has two components. The first is the valuation of the portfolio under the various scenarios of price changes. At the second stage, these scenario contract values are applied to the actual portfolio positions to compute the portfolio values and the initial margin. The Exchange / Clearing Corporation updates the scenario contract values at least 9 times in the day, which is carried out by taking the closing price of the previous day at the start of trading session (Beginning-of-Day) and the prices at 11:00 am, 12:30 pm, 2:00 pm, 3:30 pm, 5:00 pm, at Provisional EOD, 6:30 pm and Final / End-of-Day (after market close). The latest available scenario contract values are applied to member/client portfolios on a real-time basis.

Calendar Spread Margins

A currency futures position at one maturity which is hedged by an offsetting position at a different maturity is treated as a calendar spread. The benefit for a calendar spread continues till expiry of the near-month contract. For a calendar spread position, the extreme loss margin is charged on one-third of the mark-to-market value of the farmonth contract

Extreme Loss Margin

Extreme loss margin is computed as percentage of the mark-to-market value of the Gross Open Position. It shall be deducted from the liquid assets of the Clearing Member

Liquid Networth

The initial margin and the extreme loss margin are deducted from the liquid assets of the clearing member. The clearing member’s liquid networth after adjusting for the initial margin and extreme loss margin requirements must be at least Rs. 50 lacs at all points in time.

Mark-to-Market Settlement

The mark-to-market gains and losses are settled in cash before the start of trading on T+1 day. If mark-to-market obligations are not collected before start of the next day's trading, the clearing corporation collects correspondingly higher initial margin to cover the potential for losses over the time elapsed in the collection of margins

Periodic Risk Evaluation Report

The Clearing Corporation of the Exchange, on an ongoing basis and at least once in every 6 months, conducts back-testing of the margins collected vis-à-vis the actual price changes.

Unique Client Code (UCC)

The Exchange ensures that each client is assigned a client code that is unique across all members. The unique client code is assigned with the use of Income Tax Permanent Account Number (PAN) number.

Chapter 7: Exchange Traded Currency Options

Style of options

A. **European options:** European options can be exercised by the buyer of the option only on the expiration date. In India, all the currency options in OTC market are of European type.

B. **American options:** American options can be exercised by the buyer any time on or before the expiration date. Currently American options are not allowed in currencies in India.

In the money (ITM) option: An option is said to be in the money, if on exercising it, the option buyer gets a positive cash flow
Out of the money (OTM) option: An option is said to be out of the money, if on exercising it, the option buyer gets a negative cash flow.
At the money (ATM) option: An option is said to be at the money if spot price is equal to the strike price

Volatility: It is a measure of the magnitude of the change of prices (up or down) of the underlying asset. Higher the volatility, higher is the option premium and vice versa. Please note that volatility does not measure direction.

Interest rate differential between two currencies: It measures the difference between risk free interest rate of base currency and that of quoting currency. As the differential increase the value of call option increases and value of put option decreases and vice versa.

Premium = Intrinsic Value + Time Value
Intrinsic value: The intrinsic value of an option is the difference between spot price and the strike price
Intrinsic value (Call Option) = Max (0, Spot Price – Strike Price)
Intrinsic value (Put Option) = Max (0, Strike Price – Spot Price)

Time value: The difference between option premium and intrinsic value is time value of option. The time value is directly proportional to the length of time to expiration date of the option. Longer the time to expiration, higher is time value
Time value becomes 0 at expiry.

Option Greeks

- **Delta**: It is the rate of change of option price with respect to the price of the underlying asset. Delta of a long call option (and/ or short put) is always positive and ranges between 0 and 1 and for a long put (and/or short call) is always negative and ranges between 0 and -1.

- **Vega**: It measures the rate of change of option value to volatility of price of the underlying asset. It is always positive for long options (both for long put and long call) and negative for short options (both for short put and short call).
- **Theta**: It measures the change in the value of the option with respect to the passage of time. Thus if you bought an option i.e., you are long on an option, you are short theta: all other things remaining the same, the option would lose value with passage of time.
- **Rho**: It measures sensitivity of option value to the risk free rate.

Option pricing methodology

There are two common methodologies for pricing options:

• **Black and Scholes**: This methodology is more analytical, is faster to compute and is mainly used to price European options.

• **Binomial pricing**: This methodology is more computational, taken more computing power and is mainly used to price American options.

Vanilla options
Vanilla options: These are four basic option positions, which are long call, long put, short call and short put option.

Combination strategies - Bull call spread, Bull put spread, Bear put spread, Bear call spread, Short Strangle, Short Straddle, Long Butterfly, Long Strangle, Long Straddle, Short butterfly, Covered call, Covered put, Protective call, Protective put

Contract specification: USDINR, EURINR, GBPINR and JPYINR Currency Options	
Underlying	Foreign currency as base currency and INR as quoting currency
Contract Size	USD 1000 (for USDINR), EUR 1000 (for EURINR), GBP 1000 (for GBPINR) and JPY 100,000 (for JPYINR)
Tick Size	0.25 Paise (i.e., Rs 0.0025)
Quotation	The contract would be quoted in Rupee terms. However, outstanding position would be in USD, EUR, GBP and JPY terms for USDINR, EURINR, GBPINR and JPYINR contracts respectively
Contract trading cycle	3 serial monthly contracts followed by 3 quarterly contracts of the cycle March/June/September/December

Last trading day (or Expiry day)	Two working days prior to the last business day of the expiry month at 12:30 pm. If last trading day is a trading holiday, then the last trading day shall be the previous trading day.
Final Settlement Day	Last working day (excluding Saturdays) of the expiry month. The last working day will be the same as that for Interbank settlements in Mumbai. The rules for Interbank Settlements, including those for 'known holidays' and 'subsequently declared holiday would be those as laid down by FEDAI.
Settlement Basis	Daily mark to market settlement will be on a T +1 basis and final settlement will be cash settled on T+2 basis.
Mode of Settlement	Cash settled in INR
Daily Settlement Price	Daily mark to market settlement price will be announced by the exchange, based on volume-weighted average price in the last half an hour of trading, or a theoretical price if there is no trading in the last half hour.
Final Settlement Price	FBIL reference rate (Financial Benchmark India Private Ltd)

Chapter 8: Accounting and Taxation

The Institute of Chartered Accountants of India (ICAI) has issued guidance notes on accounting of index futures contracts from the view point of parties who enter into such futures contracts as buyers or sellers

Name of accounts

Client has to maintain two separate accounting heads for initial margin and mark to market margin. These heads could be called as:

• Initial margin-currency futures

• Mark to market- currency futures

Sometime clients may place extra deposit / security with trading member to take care of daily mark to market instead of settling it on a daily basis. Such account may be called as Deposit for mark to market margin account

For pay out: Any cash lay out on account of initial margin or mark to market has to be debited to respective heads i.e., Initial margin-currency futures or Mark to market- currency futures and bank account has to be credited

For pay in: Any cash inflow on account of mark to market settlement, mark to market- currency futures has to be credited and Bank account has to be debited. On balance sheet date, credit balance

in "Mark to market- currency futures" has to be shown as a current liability under the head – "current liabilities and provisions

If more than one contract in a series are outstanding at the time of expiry/ squaring off, the contract price of the contract so squared off should be determined using First-in, First-out (FIFO) method for calculating profit/loss on squaring-up.

Disclosure requirements
The amount of bank guarantee and book value as also the market value of securities lodged should be disclosed in respect of contracts having open positions at the year end, where initial margin money has been paid by way of bank guarantee and/or lodging of securities.
Total number of contracts entered and gross number of units of currency futures traded (separately for buy/sell) should be disclosed in respect of each series of currency futures.

Taxation of Profit/Loss on derivative transaction in securities
Finance Act, 2005 has amended section 43(5) so as to exclude transactions in derivatives carried out in a "recognized stock exchange" for this purpose. This implies that income or loss on derivative transactions which are carried out in a "recognized stock exchange" is not taxed as speculative income or loss. Thus, loss on derivative transactions can be set off against any other income during the year. In case the same cannot be set off, it can be carried forward to subsequent assessment year and set off against any other income of the subsequent year. Such losses can be carried forward for a period of 8 assessment years. It may also be noted that securities transaction tax paid on such transactions is eligible as deduction under Income-tax Act, 1961.

Chapter 9: Regulatory Framework for Currency Derivatives

The Committee on Fuller Capital Account Convertibility had recommended that currency futures may be introduced subject to risks being contained through proper trading mechanism, structure of contracts and regulatory environment. Accordingly, Reserve Bank of India in the Annual Policy Statement for the Year 2007-08 proposed to set up a Working Group on Currency Futures to study the international experience and suggest a suitable framework to operationalise the proposal, in line with the current legal and regulatory framework.

A new regulation (5A) was inserted after regulation 5 of the principal regulation, reading:
5A. Permission to a person resident in India to enter into currency futures A person resident in India may enter into a currency futures in a stock exchange recognized under section 4 of the Securities Contract (Regulation) Act, 1956

Only 'persons resident in India' may purchase or sell currency futures. The Scheduled Banks have to obtain permission from the respective Regulatory Departments of RBI to participate in Currency Futures Markets.

Banks authorized by the Reserve Bank of India under section 10 of the Foreign Exchange Management Act, 1999 as 'AD Category - I bank' are permitted to become trading and clearing

members of the currency futures segment of the recognized stock exchanges, on their own account and on behalf of their clients, subject to fulfilling the following minimum prudential requirements:

a) Minimum net worth of Rs. 500 crores.
b) Minimum Capital adequacy ratio (CAR) of 10 per cent.
c) Net NPA should not exceed 3 per cent.
d) Made net profit for last 3 years.

AD Category - I banks, excluding Urban Co-operative Banks, which fulfil the above RBI prudential requirements should formulate detailed guidelines for Trading and Clearing of currency futures contracts and management of risks. These guidelines should be approved by their Boards

Under section 10 (1) of the Foreign Exchange Management Act, 1999, Recognized Stock Exchanges and their respective Clearing Corporations must hold an authorization issued by the Reserve Bank to deal in or otherwise undertake the business relating to currency futures.

Reserve Bank of India vide its circular dated December 10, 2015 has specified the guidelines for the introduction of currency futures contracts on cross-currency pairs of EURUSD, GBPUSD and USDJPY on recognized stock exchanges. In the same circular, RBI has also allowed recognized stock exchanges to offer exchange traded currency options contracts on EURINR, GBPINR and JPYINR currency pairs (in addition to the existing USDINR options contract). Subsequently, SEBI vide its circular dated March 9, 2016 has also allowed trading in the above cross currency derivatives contracts and has specified the product design and risk management framework for these contracts.

Regulatory framework for exchanges

A recognized stock exchange having nationwide terminals or a new exchange recognized by SEBI may set up currency futures segment after obtaining SEBI's approval

The exchange shall have a balance sheet networth of at least Rs. 100 crores.

The segment should have at least 50 members to start currency derivatives trading. The exchange should have arbitration and investor grievances redressal mechanism operative from all the four areas/regions of the country

Regulatory framework for clearing corporations

A Clearing Corporation in the currency futures segment can function only after obtaining SEBI approval. The conditions inter-alia includes the following:

• The Clearing Corporation should be a company incorporated under the Companies Act, 1956 and should be distinct from the exchange.

• The Clearing Corporation must ensure that all trades are settled by matching of buyers and sellers

• The Clearing Corporation should enforce the stipulated margin requirements, mark to market settlement, electronic funds transfer, etc.

• A separate settlement guarantee fund should be created and maintained for meeting the obligations arising out of the currency futures segment. A separate investor protection fund should also be created and maintained for the currency futures market.

Governing council of the exchange and clearing corporation

The currency futures segment of the Exchange should have a separate Governing Council on which the representation of Trading /Clearing Members of the currency futures segment should not exceed 25%. Further, 50% of the public representatives on the Governing Council of the currency futures segment can be common with the Governing Council of the cash/equity derivatives segments of the Exchange.

The Chairman of the Governing Council of the currency futures segment of the Exchange shall be a member of the Governing Council. If the Chairman is a Trading Member/ Clearing Member, then he shall not carry on any trading/clearing business on any Exchange during his tenure as Chairman.

No trading / clearing member should be allowed simultaneously to be on the Governing Council of the currency futures segment and the cash/equity derivatives segment. The currency futures segment of the Clearing Corporation should be governed by a separate Governing Council which should not have any trading member representation.

Eligibility Criteria for members in Currency Derivatives Segment

The following entities are eligible to apply for membership subject to the regulatory norms and provisions of SEBI and as provided in the Rules, Regulations, Byelaws and Circulars of the Exchange -

• Individuals;
• Partnership Firms registered under the Indian Partnership Act, 1932;
• Corporations, Companies or Institutions or subsidiaries of such Corporations, Companies or Institutions set up for providing financial services;
• Such other person as may be permitted under the Securities Contracts (Regulation) Rules 1957

Professional Clearing Member

The following persons are eligible to become PCMs for Currency Futures Derivatives provided they fulfill the prescribed criteria:

1. SEBI Registered Custodians
2. Banks

Who cannot become a member?

No entity shall be admitted as a member/partner or director of the member if

a. It has been adjudged bankrupt or a receiver order in bankruptcy has been made against him or he has been proved to be insolvent even though he has obtained his final discharge;
b. it has compounded with his creditors for less than full discharge of debts;
c. it has been convicted of an offence involving a fraud or dishonesty;
d. it is engaged as a principal or employee in any business other than that of Securities, except as a broker or agent not involving any personal financial liability or for providing merchant banking, underwriting or corporate or investment advisory services, unless he undertakes to severe its connections with such business on admission, if admitted;

e. it has been at any time expelled or declared a defaulter by any other Stock Exchange or he has been debarred from trading in securities by an Regulatory Authorities like SEBI, RBI etc;
f. it incurs such disqualification under the provisions of the Securities Contract (Regulations) Act, 1956 or Rules made there-under so as to disentitle such persons from seeking membership of a stock exchange;
g. it incurs such disqualification consequent to which the Exchange determines it to be not in public interest to admit him as a member on the Exchange, provided that in case of registered firms, body corporates and companies, the condition from (will apply to all partners in case of partnership firms, all directors in case of companies) the Exchange may from time to time modify / expand the scope of activities that could be considered as relevant experience for the above purpose.

Forms of collaterals acceptable by the Clearing Corporation
Members have to fulfil certain requirements and provide collateral deposits to the Clearing Corporation. All collateral deposits are segregated into cash component and non-cash component. Cash component means cash, bank guarantee, fixed deposit receipts, Treasury bills and dated government securities. Non-cash component mean all other forms of collateral like approved demat securities

Requirements to become authorized / approved user
These Authorized Persons cannot collect any commission or any amount directly from the clients they introduce to the trading member who appointed him. However they can receive a commission or any such amount from the trading member who appointed them as provided under regulation.

Chapter 10: Codes of Conduct and Investor Protection Measures

Adherence to SEBI codes of conduct for brokers/ sub-brokers
All trading members must at all times adhere to the Code of Conduct as specified by the Securities and Exchange Board of India (Stock Brokers and Sub-Brokers) Regulations, 1992.

Issue of Purchase or Sale Notes: (a) A sub-broker should issue promptly to his clients purchase or sale notes for all the transactions entered into by him with his clients. (b) A sub-broker should not match the purchase and sale orders of his clients and each such order must invariably be routed through a member-broker of the stock exchange with whom he is affiliated.

Agreement between sub-broker, client of the sub-broker and main broker: A sub-broker should enter into a tripartite agreement with his client and with the main broker specifying the scope of rights and obligations of the broker, sub-broker and such client of the sub-broker

Investor grievance resolution mechanism (against trading members)

All exchanges also have supervision mechanisms for the functioning of this department/ cell. These include the Investor Service Committees (ISC) consisting of Exchange officials and independent experts whose nomination is approved by Securities and Exchange Board of India\

SEBI Complaints Redress System (SCORES) [http://scores.gov.in]

SEBI's web based complaints redressal system is called SCORES (Sebi COmplaints REdress System). SCORES is a centralized grievance management system with tracking mechanism to know the latest updates and time taken for resolution. Each complaint will have a unique reference number, which will help customers keep a track and follow up the resolution.

(i) Centralised database of investor complaints

(ii) Online movement of complaints to the concerned listed company or SEBI registered intermediary

(iii) Online upload of Action Taken Reports (ATRs) by the concerned listed company or SEBI registered intermediary

(iv) Online viewing by investors of actions taken on the complaint and its current Status

Arbitration

Arbitration is a quasi judicial process of settlement of disputes between Trading Members, Investors, Sub-brokers & Clearing Members and between Investors and Issuers (Listed Companies).

The arbitrator conducts the arbitration proceeding and passes the award normally within a period of 4 months from the date of initial hearing. The arbitration award is binding on both the parties. However, the aggrieved party, within 15 days of the receipt of the award from the arbitrator, can file an appeal to the arbitration tribunal for re-hearing the whole case.

On receipt of the appeal, the Exchange appoints an Appellate Bench consisting of five arbitrators who re-hear the case and then give the decision.

The judgment of the Bench is by a 'majority' and is binding on both the parties. The final award of the Bench is enforceable as if it were the decree of the Court. Any party who is dissatisfied with the Appellate Bench Award may challenge the same only in a Court of Law.

Contract Note

Contract Notes are made in duplicate, and the Trading Member and Client, both are provided one copy each.

The Client is expected to sign on the duplicate copy of the Contract Note, confirming receipt of the original.

The following are the prescribed types of contract notes:

- Contract Note - Form 'A' - Contract Note issued where Member is acting for constituents as brokers/ agents.
- Contract Note - Form 'B' - Contract Note issued by Members dealing with constituents as principals

The Contract Note:

- Contains SEBI registration number of the Trading Member/ Sub – broker.
- Contains details of trade such as, Order number, trade number, trade time, quantity, price, brokerage, settlement number, and details of other levies.
- Shows trade price separately from the brokerage charged
- The brokerage, service tax and STT are indicated separately in the Contract Note.

- Contains signature of authorized representative of the broker.
- Contains arbitration clause stating jurisdiction of relevant courts

IMPORTANT NOTE :

1. Attend ALL Questions
2. For the questions you don't know the right answer – Try to eliminate the wrong answers and take a guess on the remaining answers.
3. DO NOT MEMORISE the question & answers. It's not the right to way to prepare for any NISM exam. Good understanding of Concepts is essential.

All the Best ☺

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