

INTRODUCTION

SEBI Stipulations

The Work Book is intended to be an aid for appearing for the BCDE Examinations conducted by The Stock Exchange, Mumbai (BSE) for the Derivatives Segment. Clearing of this examination is a mandatory requirement as per SEBI stipulations, for Brokers, dealers & salespersons for dealing in the Derivatives segment.

The Work Book divides the areas for the examination into six:

Chapter	Content	Application
1	Introduction, Forwards and Futures	Theory
2	Options	Theory
3	Margins and Regulations	Theory
4	Introduction, Futures and Forwards	Problems
5	Options	Problems
6	Margins	Problems

How to Use the Work Book

In each area, a write up is given at the beginning of each chapter. This write up should be read carefully and thoroughly and will help you to understand the Chapter. Thereafter, sample questions are provided. Answers are provided at the end for each of the questions. Wherever appropriate, the logic and the detailed calculations are also provided.

You should answer each of the questions yourself as a self test during your practice. Thereafter, check out the answer yourself and see how many marks you secure. You should secure at least 80% in your practice work.

The BCD Exam

1. The examination will have 60 questions aggregating 100 marks. Questions with differing levels of difficulty will be asked. The simple questions (Difficulty Level 1) carry one mark each, while the higher levels (Difficulty Level 2 and Difficulty Level 3) carry two marks each and three marks each respectively.
2. Each Question will have a number of alternatives. You need to chose the correct alternative. The number of alternatives can sometimes be 2, sometimes 3 or sometimes 4.
3. Each question paper will have all three types of Difficulty Levels, such that the marks of 60 questions aggregate to 100.
4. Candidates are expected to secure 60% for passing the examination.
5. Negative marking is attracted for wrong answers. Hence, it would be advisable not to answer a question which you are not clear about.

CHAPTER 1

INTRODUCTION, FORWARDS AND FUTURES

What are Forwards?

Imagine you are a farmer. You grow 1,000 dozens of mangoes every year. You want to sell these mangoes to a merchant but are not sure what the price will be when the season comes. You therefore agree with a merchant to sell all your mangoes for a fixed price for Rs 2 lakhs.

This is a forward contract wherein you are the seller of mangoes forward and the merchant is the buyer. The price is agreed today in advance and The delivery will take place sometime in the future.

What are the essential features of a forward contract?

The essential features of a forward contract are:

- Contract between two parties (without any exchange between them)
- Price decided today
- Quantity decided today (can be based on convenience of the parties)
- Quality decided today (can be based on convenience of the parties)
- Settlement will take place sometime in future (can be based on convenience of the parties)
- No margins are generally payable by any of the parties to the other

Where are forwards used?

Forwards have been used in the commodities market since centuries. Forwards are also widely used in the foreign exchange market.

What are futures? How are they different from forwards?

Futures are similar to forwards in the sense that the price is decided today and the delivery will take place in future. But Futures are quoted on a stock exchange. Prices are available to all those who want to buy or sell because the trading takes place on a transparent computer system.

What are the features of Futures?

The essential features of a Futures contract are:

- Contract between two parties through an exchange
- Exchange is the legal counterparty to both parties
- Price decided today
- Quantity decided today (quantities have to be in standard denominations specified by the exchange)
- Quality decided today (quality should be as per the specifications decided by the exchange)
- Tick size (i.e. the minimum amount by which the price quoted can change) is decided by the exchange
- Delivery will take place sometime in future (expiry date is specified by the exchange)
- Margins are payable by both the parties to the exchange
- In some cases, the price limits (or circuit filters) can be decided by the exchange

Who invented Forwards and Futures?

It is difficult to say that somebody invented them. Forwards have been used since centuries especially in commodity trades. Futures are specialized forwards which are supported by a stock exchange.

Futures, as we know them now, were first traded in the USA, in Chicago.

What are the limitations of forwards?

Forwards involve counter party risk. In the above example, if the merchant does not buy the mangoes for Rs 2 lakhs when the season comes, what can you do? You can only file a case in the court, but that is a difficult process. Further, the price of Rs 2 lakhs was negotiated between you and the merchant. If somebody else wants to buy these mangoes from you, there is no mechanism of knowing what the right price is.

Thus, the two major limitations of forwards are:

- Counter party risk
- Price not being transparent

Counter party risk is also referred to as 'default' risk or 'credit' risk.

How do Futures overcome these difficulties?

An exchange (or its clearing corporation) becomes the legal counterparty in case of futures. Hence, if you buy any futures contract on an exchange, the exchange (or its clearing corporation) becomes the seller.

If the other party (the real seller) does not deliver on the expiry date, you do not have to worry. The exchange (or its clearing corporation) will guarantee you the delivery.

Further, prices of all Futures quoted on the exchange are known to all players. Transparency in prices is a big advantage over forwards.

Do Futures suffer from any limitation?

Futures suffer from lack of flexibility. Suppose you want to buy 103 shares of Satyam for a future delivery date of 14th February, you cannot.

The exchange will have standardized specifications for each contract. Thus, you may find that you can buy Satyam futures in lots of 1,200 only. You may find that expiry date will be the last Thursday of every month.

Thus, while forwards can be structured according to the convenience of the trading parties involved, futures specifications are standardized by the exchange.

What is the meaning of expiry of Futures?

Futures contracts will expire on a certain pre-specified date. In India, futures contracts expire on the last Thursday of every month. For example, a February Futures contract will expire on the last Thursday of February. In this case, February is referred to as the Contract month.

If the last Thursday is a holiday, Futures and Options will expire on the previous working day.

On expiry, all contracts will be compulsorily settled. Settlement can be effected in cash or through delivery.

What does Cash Settlement mean?

Cash settlement means that one of the parties will pay the other party the difference in cash. For example if you bought Sensex Futures for 3350 and the closing price on the last Thursday was 3360, you will be paid profit of 10 by the exchange. The exchange will collect the 10 from the party who sold the Futures, because that party would have made a loss of 10.

In reality, the amount would not be 10, because the number of Sensex Units in a contract would be considered. One Sensex contract is made up of 50 Units. Therefore, a profit of 10 above would translate into a profit of Rs 500 (50 Sensex Units x 10).

Thus, Cash Settlement means settlement by payment/receipt in cash of the difference between the contracted price and the closing price of the underlying on the expiry day.

In the Cash settled system, you can buy and sell Futures on stocks without holding the stocks at any time. For example, to buy and sell Futures on Satyam, you do not have to hold Satyam shares.

What does Delivery based Settlement mean?

In Delivery based Settlement, the seller of Futures delivers to the Buyer (through the exchange) the physical shares, on the expiry day.

For example, if you have bought 1,200 Satyam Futures at Rs 250 each, then you will (on the day of expiry) get 1,200 Shares of Satyam at the contracted Futures price of Rs 250. It might happen that on the day of expiry, Satyam was actually quoting at Rs 280. In that case, you would still get Satyam at Rs 250, effectively generating a profit of Rs 30 for you.

What is the Current System in India?

Currently in India (as on the date of writing this Work Book), all Futures transactions are settled in Cash. There is no system of physical delivery.

Students appearing for the exam should therefore assume that contracts will be settled in cash.

It is widely expected that we will move to a physical delivery system soon. However, Index based Futures and options will continue to be based on Cash Settlement system.

How is the Value of a Futures Contract worked out?

Contract Value is the price per Futures Unit multiplied by the lot size. The lot size can also be referred to as the Contract Multiplier. For example, if Sensex Futures are quoting at 3,400 and the Contract Multiplier is 50 Units, the Value of one Futures contract will be Rs 1,70,000.

What is the profit on a Futures contract at the point of entering into the transaction?

The profit on the Futures contract at the point of entering into the transaction is zero. Profit or loss will develop only after passage of time. If Futures prices move up, the buyer will make a profit and vice versa.

Are all Futures contracts popular internationally?

No, there are many Futures contracts which have failed internationally.

What kind of underlying assets are derivatives generally available on?

Common underlying assets for derivatives are:

- Equity Shares
- Equity Indices
- Debt Market Securities
- Interest Rates
- Foreign Exchange
- Commodities
- Derivatives themselves

Which kind of commodities are easy to trade on Futures exchanges?

Commodities which possess the following characteristics are easy to trade:

- Standardisation
- Fungibility
- Large number of buyers and sellers
- Volatile prices
- Uncertain demand and supply conditions

How does Cash Settlement help?

Cash settlement allows parties to trade in Futures, even when they are not interested in delivery of the underlying. For example, you could buy and sell Silver Futures without actually buying Silver or selling Silver at any time.

What does the Exchange do in Futures?

The exchange decides the specifications of each contract. For example, it would decide that Sensex Futures will have a lot size of 50 units. It would decide that Futures would expire on the last Thursday of every month, etc.

The exchange will also collect Margins from both buyers and sellers to ensure that trading operates smoothly without defaults.

The exchange does not buy or sell any shares or index futures or commodities. It does not own any shares or index futures or commodities which might be traded on the exchange. For example, an exchange where gold futures are traded might not own any gold at all.

It is not necessary that trading in commodities also should happen in those exchanges where commodity futures are traded. For example, an exchange where gold futures are traded might not allow trading in physical gold at all.

The exchange is supposed to carry out on-line surveillance of the derivatives segment.

What is on-line surveillance?

The exchange surveys the market movements, volumes, positions, prices, trades entered into by brokers

on a continuous basis to identify any unusual trades. This process is called on-line surveillance.

Futures are allowed on what underlying?

Currently in India, Futures are allowed on 2 Indices (viz. Sensex and Nifty) and on 31 individual stocks.

These individual stocks are carefully selected based on various parameters.

How many month Futures are available at any point of time?

Exchanges have currently introduced three series in Futures and Options. For example during the month of February on any day on or before last Thursday, you will find three Series available viz. February, March and April.

The February Series will expire on the last Thursday of February. On the next working day, the May Series will open. Thus, on a rolling basis, three Series will be made available.

Can trading be allowed in other stocks/indices?

Trading is technically possible in other stocks and indices. But this is a long process where the exchange has to obtain approval from SEBI for launching a new derivatives contract. SEBI will approve new contracts provided it will help further development of the market.

What is the Lot Size for Futures and Options contracts?

Lot size differs from stock to stock and index to index. For example, the lot size for Sensex Futures and Options is 50 units, while the lot size for Satyam Futures and Options is 1,200 units.

When should I buy Futures and when should I sell Futures?

Futures can be bought or sold in various circumstances. But the simplest of these circumstances could be:

- Buy Futures when you are Bullish
- Sell Futures when you are Bearish

What does Bullish and Bearish mean?

Bullish means you expect the market to rise and Bearish means you expect the market to fall.

Who decides the price of Futures?

Prices of Futures are discovered during trading in the market. For example, who decides the price of Infosys in the regular cash market? It is discovered based on trading between various players during market hours. The same logic applies to Futures and Options.

What does Arbitrage mean?

Arbitrage means the buying and selling of shares, commodities, futures, options or any combination of such products in different markets at the same time to take advantage of any mis-pricing opportunities in such markets.

An arbitrageur generally has no view on the market and tries to capitalize on price differentials between markets.

Who are Hedgers?

Hedgers are people who are attempting to minimize their risk. If you hold shares and are nervous that the price of these shares might fall in the short run, you can protect yourself by selling Futures. If the market actually falls, you will make a loss on the shares, but will make a profit on the Futures. Thus you will be able to set off your losses with profits.

When you use some other asset for hedging purposes other than the asset you actually own, this kind of hedge is called a 'cross-hedge'.

Can Hedging help me to make more profits?

No, Hedging is meant for minimizing losses, not maximizing profits. Hedging helps to create a more certain outcome, not a better outcome.

How can businessmen use Futures/Forwards?

Suppose you are a trader of rice. You expect to buy rice in the next month. But you are afraid that prices of rice could go up within the next one month. You can use Rice Futures (or Forwards) by buying Rice Futures (or Forwards) today itself, for delivery in the next month. Thus you are protecting yourself against price increases in rice.

On the other hand, suppose you are a jeweler and you will be selling some jewelry next month. You are afraid that prices of gold could fall within the next one month. You can use Gold Futures (or Forwards) by selling Gold Futures (or Forwards). Thus, if the price of jewelry and gold falls, you will make a loss on jewelry but make a profit on Gold Futures (or Forwards).

If you are an importer and you need dollars to pay for your imports in the next month. You are afraid that dollar will appreciate before that. You should buy futures/forwards on Dollars. Thus even if the dollar appreciates, you will still be able to get Dollars at prices decided today.

If you are an exporter and you are expecting dollar payments in the next month. You are afraid that Dollar might depreciate in that period. You can sell futures/forwards on Dollars. Thus even if the dollar depreciates, you will still be able to get Dollars converted at the prices decided today.

What role does each person play in the derivatives market?

- Speculators provide liquidity and volume to the market.
- Hedgers provide depth.
- Arbitrageurs assist in proper price discovery and correct price abnormalities.
- Speculators are willing to take risks.
- Hedgers want to give away risks (generally to the speculators).

What are the important features of the BSE Sensex?

The objectives of the BSE Sensex are:

- To provide a measure of market movements
- To provide a benchmark for fund managers
- To provide a basis for index based derivative products

The BSE Sensex was voted as the most popular index in a ORG-MARG Survey.

There are 30 underlying shares in the BSE Sensex. The base year of the Sensex is 1978-79. The base value of the Sensex was 100 in 1978-79. Incidentally, the Dow Jones index also comprises of 30 underlying stocks. The Sensex is the oldest index in India.

The 'weighted market capitalisation' method is followed for compiling the Sensex.

Selection criteria for scrips to be included in the Sensex include:

- Market Capitalisation
- Trading Frequency
- Dividend Record

It is not possible to say how many scrips should be ideally contained in any index. It depends upon what the index is supposed to represent.

The price earnings multiple is not a criterion for inclusion of scrips in the Sensex.

The scrips included for compiling the Sensex can and do change from time to time.

If the base year is changed, the formula to change the base year average market value is $\text{new base year average} = \text{old base year average} * \text{new market value} / \text{old market value}$.

What kind of transactions are possible in Futures?

Opening Buy – means – creating a Long Position

Opening Sell – means – creating a Short Position

Closing Buy – means – offsetting (fully or partly) an earlier Short Position

Closing Sell – means – offsetting (fully or partly) an earlier Long Position

Equal and Opposite Transaction – means – Square Up

What are Bid and Ask prices?

Bid prices are those provided by Buyers who want to buy shares or futures or other products at these Bid prices.

Ask prices are those quoted by Sellers who want to sell shares or futures or other products at these Ask prices.

The difference between Bid and Ask Prices is called as the Bid-Offer spread and also sometimes referred to as the Jobbing Spread. In highly liquid markets, the Bid-Offer Spread is small. In illiquid markets, the spread is high.

The difference between Bid and Ask Prices is also called impact cost. If liquidity is poor, impact cost is high and vice versa.

What is impact cost?

Impact cost is the cost you end up paying because of movement in the market price resulting from your order. For example, if the market price of Infosys is Rs 3,410 and you place an order to buy 1,00,000 shares of Infosys, the market price may go up and your average cost of buying may come to say Rs 3,417. This difference of Rs 7 is the impact cost.

What are exotic derivatives?

Standardised derivatives are as specified by exchanges and have simple standard features. These are also called 'vanilla' derivatives or 'plain vanilla' derivatives.

Exotic derivatives have many non-standard features, which might appeal to special classes of investors. These are generally not exchange traded and are structured between parties on their own.

What are Over The Counter (OTC) derivatives?

OTC Derivatives are unlisted derivatives structured by parties based on their own convenience. These are generally popular in the developed markets where leading brokers and institutions create their own kind of special derivatives and sell to interested investors.

OTC Derivatives generally do not require any margin payments. They are tailor made and are subject to counter party risk.

How can I square up a Futures contract?

If you have bought a Futures contract, you can sell it and thus square up. If you sold a Futures contract, you can buy it back and square up.

If you do not square up till the day of expiry, it will be automatically squared up by the exchange.

You need not square up with the same party from whom you bought or sold. You can simply buy or sell through the computerized trading system.

In practice, most Futures contracts are squared up before expiry date and hence never result in delivery.

What kind of risks are faced by investors in equity markets and how can Futures help them?

Risks faced by investors are categorized into two types. They are 1) Systematic Risk and 2) Non-systematic (unique risk).

Systematic risks arise from developments which affect the entire system (for example the entire stock market might be affected by a major earthquake or a war). Such risks can be minimized through Index Futures. If you sell Index Futures and the market drops, you will make profits. You might make losses on your shares and thus your profits from Index Futures will give you much needed protection.

Unique risks are specific to each share. Thus the market might go up, while a particular share might move down. To protect against unique (or unsystematic risks), you should diversify your portfolio. If you hold shares of many companies, it might happen that some move up and some move down, thus protecting you.

What is leverage in the context of derivatives?

You need not invest the entire contract value when you buy futures or options, whereas in the cash market, you need to invest the whole amount. While in Futures, you invest an Initial Margin amount, in the case of Options, you will invest the amount of Option Premium as a buyer, or provide a certain Margin as a seller.

Thus in derivatives, you can take a larger exposure with a lower investment requirement.

This practice increases your risks and returns substantially. For example, if you buy Satyam shares and it goes up by 20%, you earn 20% on your investment. But if you buy Satyam Futures which go up by 20%, you will earn much more. If, for example, you paid a margin of only 10%, you will earn 200% on your 10% margin invested.

What are the Derivative products available in the Indian Market at present?

- Index Futures (Sensex and Nifty)
- Individual Stock Futures (31 Scrips)
- Index Options (Sensex and Nifty)
- Individual Stock Options (31 Scrips)

How are Futures prices determined?

Prices are determined based on forces of demand and supply and are discovered during trading hours.

Prices of Futures are derived from the price of the underlying. For example, prices of Satyam Futures will depend upon the price of Satyam in the cash market. You can expect Futures prices to rise when Satyam price rises and vice-versa.

A theoretical model called Cost of Carry Model provides that prices of Futures should be equal to Spot Prices (i.e. Cash market prices) plus Interest (also called Cost of Carry). If this price is not actually found in the market, arbitrageurs will step in and make profits.

What type of Margins are payable on Futures?

Both buyers and sellers of Futures should pay an Initial Margin to the exchange at the point of entering into Futures contracts. This Initial Margin is retained by the exchange till these transactions are squared up.

Further, Mark to Market Margins are payable based on closing prices at the end of each trading day. These Margins will be paid by the party who suffered losses and will be received by the party who made profits. The exchange thus collects these margins from the losers and pays them to the winners on a daily basis.

What is Risk Management?

Risk Management is a process whereby the company (could be a broker, institution, stock exchange) lays down a clear process of how its risks should be managed. The process will include:

- Identifying risk
- Deciding how much credit should be given to each client
- Deciding the frequency of collection of margins
- Deciding how much risk is acceptable
- Controlling risk on continuous basis
- Monitoring risk taken on continuous basis

When will I make profits?

If you have bought Futures and the price goes up, you will make profits.

If you have sold Futures and the price goes down, you will make profits.

What is Short Selling and can I short sell in the Futures market?

Short selling is selling of equity shares by a party who does not have delivery of these shares.

In the Futures market (as per the current Indian system), short selling is freely permitted as Futures are cash settled.

What is Open Interest?

The number of transactions open at the end of the day is referred to as Open Interest. For example, if on Day One of the Derivatives Market, 50,000 contracts have been executed and none of them squared up so far, the Open Interest will be 50,000 contracts.

If on Day Two, 10,000 contracts are squared up and 15,000 new contracts are executed, the Open Interest will become 55,000 contracts (50,000 minus 10,000 plus 15,000)

The level of Open Interest indicates the depth of the market.

What is Beta and how is it used?

Beta is a measure of how sensitive a particular stock (or a particular portfolio of stocks) is with respect to a general market index. For example, if Reliance has a beta of 1.15 with respect to the Sensex, the implication is that Reliance fluctuations will be 1.15 times the fluctuations in the Sensex. If the Sensex moves up by 10%, Reliance will move up by 11.5%.

Beta is widely used for hedging purposes. If you have Reliance shares worth Rs 10 lakhs and you want to hedge your portfolio using Sensex Futures, you will typically sell Rs 11.50 lakhs of Sensex Futures. Thus if Sensex moves down by 10%, Reliance will move down by 11.5%. On the Sensex Futures, you will gain Rs 1.15 lakhs (10% of Rs 11.50 lakhs), while on Reliance, you will lose Rs 1.15 lakhs (11.5% of Rs 10 lakhs).

High beta stocks are termed aggressive stocks, while low beta stocks are termed defensive stocks.

Hedge Ratio is related to 'beta' and can be understood as the number of Futures contracts required to be sold to create a perfect hedge.

Do Derivative Markets create risks?

Yes, they do. But it will be more correct to say that Derivative Markets redistribute risks. There are some participants who want to take on risk (speculators) while some participants want to reduce risk (hedgers). Derivative Markets align the risk appetites of such players and thus redistribute risks.

What is Volatility?

Volatility is the extent of fluctuation in stock prices (or prices of other items like commodities and foreign exchange). Volatility is not related to direction of the movement. Thus, volatility can be high irrespective of whether the stock price is moving up or down.

A market index (like the Sensex) would generally be less volatile than individual stocks (like Satyam).

The level of Volatility will dictate the level of Margins. Higher volatility will result in higher margins and vice-versa.

Daily Volatility, if known, can be used to calculate volatility for any given period. For example, Periodic Volatility will be Daily Volatility multiplied by the square root of the number of days in that period.

For example, Annual Volatility is generally taken as the square root of 256 (working days approximately) i.e. 16 times the Daily Volatility.

What is Open Outcry System and what is Pit?

In the pre-computerised days, brokers used to meet on the floor of the stock exchange and openly quote their prices. Hence, this system is known as the Open Outcry System. The Pit is the trading floor of the brokers where the interactions happened.

The BSE changed over to computerized trading in 1995.

Who are jobbers?

Jobbers are market players who provide both buy and sell quotes generally for particular scrips. These players are also called market makers.

What trading methodology does the computerized trading system at the BSE follow?

The BSE system follows order driven system. The other alternative is the quote driven system, which is not followed.

Exposure limits of brokers are monitored at what frequency?

Exposure limits of brokers in the derivatives segment are monitored on a continuous on-line basis.

What is Current Exposure and what is Potential Exposure?

Current Exposure is the mark to market value of executed contracts entered into at the point of measurement. Potential Exposure is the mark to market value of contracts as entered into the trading system and includes both executed and unexecuted transactions at the time of measurement.

What is 'basis'?

'Basis' is the difference between Spot (i.e. cash market) price and Futures price. Generally, in financial markets, Futures prices should be higher than Spot prices (though in practice, the reverse also happens).

The basis would decrease with passage of time and on the day of expiry it would reduce to zero. On that day, Futures prices become equal to Spot prices (they are said to converge).

The regular situation where futures prices are higher than spot prices can be referred to as contango, while the unusual situation where futures prices are lower than spot prices can be referred to as backwardation.

What are Calendar Spreads?

Calendar Spreads are two positions taken by traders, who typically buy one Series of Futures and sell another Series. For example, a trader could buy February Series and sell March Series.

In the current Indian situation where three Series are available, three spread Series can be created. For

example, if three Series available are January, February and March, the Spread Series possible are Jan-Feb, Jan-March and Feb-March.

As Futures prices are based on Interest Rates, the Spread trader is essentially looking at Futures prices differences in comparison with Interest Rates. If he believes that Interest Rates are expected to rise, he might buy far month Futures and sell near month Futures. If Interest Rates rise, then far month Futures would appreciate more and he will make a profit.

Similarly, if he believes that Interest Rates are expected to fall, he will buy near month Futures and sell far month Futures.

What kind of Broker-members operate in the Derivatives market?

There are two kinds of basic members, viz. Clearing Members and Trading Members. Clearing Members can clear trades with the Clearing Corporation. Trading Members are provided with terminals for trading.

Clearing Members can be of two types – viz – Clearing-cum-Trading Members (members who are allowed to clear as well as trade) and Professional Clearing Members (members who can only clear and not trade).

Who decides the Net Worth criteria for Broker-members?

Net Worth criteria for Clearing Members has been provided by SEBI, while Net Worth criteria for Trading Members is decided by stock exchanges.

Is there a limit on the number of Futures contracts that can be traded?

There are limits fixed by SEBI on the exposure that can be taken by each investor or broker.

However, these limits are quite high for common investors.

While the number of shares of the company are taken into account while fixing such limits, in theory there is no correlation between the two especially in a cash settled system.

Thus the daily volume in Futures markets may be higher than daily volume in Cash markets.

It is also possible that shares are not available in the Cash Market (there being no sellers at that time) while Futures on such shares are freely traded.

In most markets, it will be correct to say that the volume of Futures contracts can exceed the supply of the underlying asset.

What kind of risks do participants in the Derivatives markets face?

Some examples of risks are provided below:

Counterparty (or default) risk – very low or almost zero because the exchange takes on the responsibility

Operational risk – risk that operational systems might fail

Legal risk – risk that legal objections might be raised, regulatory framework might disallow some activities

Market risk – risk that market prices may move up or down

Liquidity risk – risk that unwinding of transactions might be difficult if the market is illiquid.

What kind of orders can you place in the computerized trading system?

Some examples are provided below:

Market Order – order will be executed at best market prices available

Limit Order – order will be executed when the market prices reach the specified limit

Stop Loss Order – order will be unwound when the market prices reach the specified limit

Good till day – order will be kept in the trading system till end of day

What kind of deals are possible in the market?

When a trade is executed between two clients of the same broker and reported on the trading system, it is called as a **‘cross deal’**.

When a trade is executed between two member-brokers and then reported on the trading system, it is called as a **‘negotiated deal’**.

How many stocks are listed on the BSE?

Approximately 6000.

What is the maximum brokerage chargeable?

As per the Securities Contract Regulation Act, maximum brokerage permitted is 2.5% of the value of securities. In derivatives market, the notional contract value would be the value to be considered for this purpose.

How long is a transfer deed valid?

A transfer deed is valid for 12 months or next book closure date (whichever is earlier).

What do the terms pay in and pay out mean?

Pay in is the process where brokers pay the clearing corporation, while pay out is the process where the clearing corporation pays the brokers.

Pay in takes place before Pay out.

If securities required to be delivered to the clearing corporation are not delivered on pay in day, then the clearing corporation carries out a process called ‘auction’ where securities are purchased from the market to ensure delivery.

When no offer for a particular scrip is received in an auction or when members who offer the scrip in auction fail to deliver the same during auction pay-in, the outstanding transaction is closed out.

In what form can broker-members keep their base capital with the exchange?

Broker members can deposit their base capital in Cash, Fixed Deposits and approved securities in proportions specified by the exchange.

What is the minimum capital requirement for a company to be listed on the BSE?

Rs 10 crores.

Questions on Chapter 1 : Introduction, Forwards and Futures

1) Which of the following is NOT an example of a forward contract?

Ans:

- a) An agreement to buy a car in the future at a specified price.
- b) An agreement to buy an airplane ticket at a future date for a certain price
- c) An agreement to buy a refrigerator today at the posted price.
- d) An agreement to subscribe to a newspaper at a specified price at a future date.

2) The market price of a product or commodity is:

Ans:

- a) Determined by demand only.
- b) Determined by supply only.
- c) Influenced by government manipulation.
- d) Determined by demand and supply

3) Futures on individual stocks are allowed

Ans:

- a) on all stocks listed on the stock exchange
- b) on few selected stocks only
- c) on all stocks listed on all stock exchanges in India
- d) on all stocks where price is more than Rs 100 per share

4) If someone is “bearish” in the market?

Ans:

- a) He expects the market to rise.
- b) He expects the market to fall.
- c) He expects the market to move sideways.
- d) He expects the market to close.

5) A rice exporter will be purchasing rice soon. He is afraid that higher prices could wipe out his potential profits. What can the rice exporter do in the futures market to minimize his price uncertainty?

Ans:

- a) He can sell Rice Futures.
- b) He should buy Rice Futures
- c) He cannot get any help from Futures and Options.
- d) He should not get into Rice business.

6) The closing index value of the BSE Sensitive Index is calculated using

Ans:

- a) last traded price of the index scrips
- b) weighted average of the last 120 minutes trades of the index scrips
- c) the algorithm used to calculate closing Sensex value
- d) None of the above

7) The value of a derivative instrument

Ans:

- a) is fixed
- b) depends on the value of an underlying asset
- c) is reset at fixed intervals
- d) none of the above

8) An exchange traded futures contract is similar to an OTC (over the counter) derivative. Some common features are :

Ans:

- a) Both are tailored (e.g. non-standardised) instruments
- b) Both require margin collection by a clearing house
- c) Both are exposed to credit-risk i.e. risk of non-performance by counter party
- d) None of the above

9) Futures contracts can be reversed with any member of the derivatives segment of the exchange.

Ans:

- a) True
- b) False
- c) Cannot be reversed
- d) Cannot be reversed for the next one month

10) Which is the oldest index in India?

Ans:

- a) BSE 30 Sensex
- b) BSE 100
- c) S&P CNX Nifty
- d) BSE 200

11) Taking position in futures opposite to that in cash market for protecting cash market holdings is :

Ans:

- a) Speculating
- b) Arbitrage
- c) Hedging
- d) None of the above.

12) Derivatives are highly leveraged, which implies that

Ans:

- a) You can take a higher position with smaller investments using derivatives
- b) You can take a lower position with higher investments using derivatives
- c) You can take a higher position if you buy the underlying assets instead of buying derivatives
- d) You should buy the underlying assets as you might make more profit on them rather than derivatives

13) At the point of entering into the futures contract

Ans:

- a) Both the buyer and the seller pay initial margin to the exchange
- b) The buyer alone pays initial margin to the exchange
- c) The seller alone pays initial margin to the exchange
- d) No margins are payable to the exchange by the buyer or the seller

14) If you have bought a futures contract and the price drops, you will be making a profit.

Ans:

- a) True
- b) False
- c) Sometimes true
- d) Sometimes false

15) Each forward contract

Ans:

- a) can be structured as required by the buyer and seller
- b) will have the same specifications
- c) specifications are decided by the RBI
- d) None of the above

16) Cash market is a market with immediate or near immediate delivery.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Europe

17) On line trading is a system where trading is accomplished through terminals which are connected to a central computer.

Ans:

- a) True
- b) False
- c) Sometimes true
- d) Partially false

18) In futures contracts, the contract maturity period is defined

Ans:

- a) by the exchange
- b) by the RBI
- c) by the parties to the contract
- d) by the Government

19) A forward contract is an agreement to enter into a contract at a pre-specified future date.

Ans:

- a) True
- b) False
- c) True only in Europe
- d) True only in Africa

20) A forward contract is an agreement to buy a certain asset at a certain future date for a price to be determined in the future.

Ans:

- a) True
- b) False
- c) True only in Europe
- d) True only in Africa

21) If you have a long position in a forward contract and the underlying price falls, you will make a profit.

Ans:

- a) True
- b) False
- c) True only in Europe
- d) True only in Africa

22) The greater the number of participants in any market, generally lower the liquidity.

Ans:

- a) True
- b) False
- c) True only for the year 2002.
- d) True only for the year 2001.

23) In the olden days, the area within the exchange where trading was conducted through open outcry, was known as the Pit.

Ans:

- a) True
- b) False
- c) True only for the year 2002.
- d) True only for the year 2001.

24) Futures contracts may or may not be traded on an exchange.

Ans:

- a) True
- b) False
- c) True only for the year 2002.
- d) True only for the year 2001.

25) If the price of the underlying asset rises sharply after the initiation of a futures contract

Ans:

- a) the long position becomes profitable
- b) the long position becomes unprofitable
- c) the short position becomes profitable
- d) none of the above

26) A fund manager is bullish on the market. What should be his course of action?

Ans:

- a) buy the index future
- b) sell the index future
- c) sell his entire portfolio
- d) none of the above

27) You have purchased shares and sent them for transfer. In the meantime, market is likely to fall due to some adverse development. What should you do?

Ans:

- a) Do nothing
- b) Buy the Index Futures
- c) Sell the Index futures
- d) None of the above

28) Tick size is

Ans:

- a) the maximum daily movement permitted in the price of the contract
- b) the maximum permitted price movement during the entire life of the contract
- c) the minimum permitted price movement in a futures contract
- d) None of the above

29) A long or short position in a futures contract can be closed easily by initiating a reverse trade.

Ans:

- a) True
- b) False
- c) True only in Europe
- d) True only in Africa

30) You can buy stock futures in India regardless of whether you own the shares or not.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

31) You can buy index futures in India regardless of whether you own the index shares or not.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

32) A futures contract is a very standardised contract that leaves very little (except the price) open to negotiation.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

33) In a futures market a buyer of a contract is obliged to buy the underlying at the contract price from the clearing house and not to the actual seller.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

34) In case of futures, the initial margin is paid only by the seller and not the buyer.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

35) A scarce supply of the actual commodity generally causes futures price to fall.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

36) If you have sold June Sensex Futures @ 4800, You will make profit if :-

Ans:

- a) Futures prices go up.
- b) Futures prices go down.
- c) None of the above

37) A warrant could be understood as :

Ans:

- a) A derivative instrument
- b) A kind of equity share
- c) A kind of debenture
- d) A kind of financial bond

38) In November, a trader feels that the interest rates as reflected in futures prices are going to fall in the next few days. The trader wants to take a spread position based on his view. What action will he take?

Ans:

- a) Buy near month and sell far month
- b) Buy far month and sell near month
- c) Buy near month and far month both
- d) sell near month and far month both

39) An Indian businessman imports regularly from the US. If he buys dollars in a forward contract, what is his plan?

Ans:

- a) Creating a hedge
- b) Taking risk
- c) Speculating on the dollar
- d) None of the above

40) Use of Index futures for hedging helps us eliminate the following risk:

Ans:

- a) stock specific risk
- b) all possible risks
- c) no risk
- d) market risk

41) If you wanted to create a perfect hedge for your portfolio, the value of index futures you would sell should equal:

Ans:

- a) Value of your portfolio / Beta of your portfolio
- b) Value of your portfolio * Beta of your portfolio
- c) Value of your portfolio - Beta of your portfolio * 100
- d) Value of your portfolio + Beta of your portfolio *100

42) Generally higher the price volatility, higher would be the initial margin requirement.

Ans:

- a) True
- b) False
- c) True only in Africa
- d) True only in Japan

43) Systematic risk is an investment risk peculiar to a company which can be reduced by diversifying one's portfolio.

Ans:

- a) True
- b) False
- c) True only in Africa
- d) True only in Japan

44) Credit risk on a derivative transaction includes

Ans:

- a) power outage
- b) riots in the country
- c) credit exposure in the event of default and the probability of a counter party's default.
- d) bank strikes

45) A derivative exchange faces

Ans:

- a) legal risk.
- b) operational risk.
- c) liquidity risk.
- d) All of the above

46) Liquidity risk can be caused by

Ans:

- a) sale of large number of shares which depress price significantly.
- b) high market capitalisation
- c) failure of VSAT.
- d) low market capitalisation

47) Operational risks include losses due to

Ans:

- a) inadequate contingency planning.
- b) limit on gross exposure.
- c) market movement.
- d) strict management control

48) Which of the following kind of loss would you attribute to 'legal' risk?

Ans:

- a) IT department has seized books of accounts of a broker
- b) Police department has arrested a broker
- c) A contract cannot be enforced because of signature mismatch
- d) None of the above

49) One of the methods to control financial risk is to have

Ans:

- a) exposure limits.
- b) un-interrupted power supply unit.
- c) Speculate heavily.
- d) None of the above

50) When a deal is executed within the two investors of the same broker in his office and then reported on BOLT, it is called

Ans:

- a) negotiated deal
- b) kerb deal
- c) cross deal
- d) all or none deal

51) A typical validity period for a transfer-deed remains

Ans:

- a) 12 months from the stamped date
- b) till next book closure following stamped date.
- c) either 12 months from the stamped date or till next book closure following stamped date whichever is later.
- d) Valid throughout its life irrespective of stamped dates.

52) The securities which are not delivered in the clearing house during pay-in, are purchased by the clearing house from the market. This process is known as

Ans:

- a) close-out
- b) penalty
- c) auction
- d) upla badla

53) Find the odd one out.

Ans:

- a) Bombay Stock Exchange
- b) New York Stock Exchange
- c) Calcutta Stock Exchange
- d) Madras Stock Exchange

54) When no offer for a particular scrip is received in an auction or when members who offer the scrip in auction fail to deliver the same during auction pay-in, the outstanding transaction is

Ans:

- a) annulled
- b) cancelled
- c) closed-out
- d) None of the above

55) An investor has buy position in a scrip, he can make his position nil in the settlement by

Ans:

- a) selling any security of equal quantity.
- b) selling the same scrip and same quantity.
- c) selling any index scrip of equal quantity
- d) selling any A-group scrip for equal quantity.

56) The selection criteria for a scrip to form part of the BSE Sensitive index is

Ans:

- a) The scrips must have been traded every day in the last six months
- b) the company must be a dividend paying company
- c) number of trades in the last six months should be greater than a certain number specified by the Index Committee
- d) All of the above

57) The futures market has its own terminology. If a trader was long in the market, what would that mean?

Ans:

- a) The trader sold a future contract
- b) The trader bought a futures contract
- c) The trader's open positions exceeded his net worth
- d) None of the above

58) Forward contracts can be cancelled with any counterparty in the market and not necessarily with the same counterparty with whom it was entered into

Ans:

- a) True
- b) False
- c) True only in Japan
- d) True only in Africa

59) In case of BSE Index futures, the monthly series matures on

Ans:

- a) First Thursday of the month
- b) Last Thursday of the month
- c) First Wednesday of the month
- d) Last Wednesday of the month

60) In which underlying asset, the futures contract cannot be used as a means of acquiring the underlying assets

Ans:

- a) foreign currency
- b) gold
- c) stock-index
- d) None of the above

61) Which of the following can be the underlying in a financial future?

Ans:

- a) Sugar
- b) T Notes
- c) Coffee
- d) Pork bellies

62) Hedgers and speculators strike a balance due to their needs as

Ans:

- a) Hedger has to take risk while speculator has to give up risk
- b) Both hedgers and speculators have to take risk
- c) Both hedgers and speculators have to give up risk
- d) Hedger avoids risk while the speculator takes risk

63) How are prices fixed in case of a forward contract?

Ans;

- a) They are decided at the time of entering into the contract.
- b) They are decided at the end of the contract period
- c) They are decided and revised from time to time based on market condition
- d) None of the above

64) Forward contract is a good means of avoiding price risk, but it also entails element of risk because
Ans:

- a) The contract is not standardised
- b) The party to the contract may not honour its part of obligation and default.
- c) The contract value is fixed
- d) None of the above

65) The risk which is measured by a 'Beta' value is called :

Ans:

- a) Unsystematic Risk
- b) Default Risk
- c) Systematic Risk
- d) None of the above

CHAPTER 2

OPTIONS

What type of Options are available?

Call Options and Put Options.

What are Call Options?

Call Options give the buyer the right to buy a specified underlying at a set price on or before a particular date. For example, Satyam 260 Feb Call Option gives the Buyer the right to buy Satyam at a price of Rs 260 per share on or before the last Thursday of February.

The price of 260 in the above example is called the strike price or the exercise price.

Call Options are also called teji in the Indian markets.

What are Put Options?

Put Options give the buyer the right to sell a specified underlying at a set price on or before a particular date. For example, Satyam 260 Feb Put Option gives the Buyer the right to sell Satyam at a price of Rs 260 per share on or before the last Thursday of February.

Put Options are also called mandi in the Indian markets.

What is the position of Sellers?

Call Option Sellers are under obligation to deliver shares whenever the Call Option Buyer exercises his right. Put Option Sellers are under obligation to buy shares whenever the Put Option Buyer exercises high right.

What happens in case of Index Options?

In case of Index Options, delivery of Index is not possible. Hence, these Options are cash settled. The seller of Options is under obligation to pay the difference between Market Value of the Index and Strike Price of the Option to the Option Buyer.

What are American Options and what are European Options? What type of Options are available in India?

American style Options can be exercised at any time on or before the expiry day. European style Options can be exercised on the day of expiry.

In India, both styles are available. Index Options are European style, while individual stock options are American style.

What happens on exercise?

On exercise, the buyer calls upon the exchange to pay up the difference between the market price and the strike price. The exchange in turn asks one of the Option sellers to make this difference payment.

It is generally believed that American style Call Options should not be exercised early, as it does not generate any special benefit to the buyer. The Buyer may be advised to sell such Options rather than exercise. On the other hand, American style Put Options could be exercised in some circumstances.

On what underlying assets can Options be created?

Options can be created on various underlying assets including Index, Shares, Foreign Exchange, Commodities, Swaps, other Derivatives.

An option over a Swap is called a Swaption.

What are the components of Option Value?

Option Value is made up of two components viz. Intrinsic Value and Time Value. Intrinsic Value is the amount the buyer would get if the option is exercised. The additional value (over and above the Intrinsic Value) is called Time Value.

None of these three values can be negative.

Intrinsic Value is also called 'parity value'. Time Value is also called 'premium over parity'.

For example, if a Satyam Feb 260 Call is quoting for Rs 25 while the Market Price of Satyam is Rs 262, the values are as under:

Total Option Value (i.e Option Price) :	Rs 25
Intrinsic Value (262 – 260)	Rs 2
Time Value (25 – 2)	Rs 23

On what factors do Option Values depend?

Option Values depend on the following six factors:

- Market Price
- Strike Price
- Volatility
- Time to Expiry
- Interest Rates
- Dividends

How do these factors affect Option Values?

Call Options:

Higher Market Price, Higher Option Value
Higher Strike Price, Lower Option Value
Higher Volatility, Higher Option Value
Longer Time to Expiry, Higher Option Value
Higher Interest Rates, Higher Option Value
Higher Dividends, Lower Option Value

Put Options:

Higher Market Price, Lower Option Value
Higher Strike Price, Higher Option Value
Higher Volatility, Higher Option Value
Longer Time to Expiry, Higher Option Value
Higher Interest Rates, Lower Option Value
Higher Dividends, Higher Option Value

What are Option Greeks and what do they stand for?

Option Greeks help us to understand Option behaviour better. They measure the extent of the impact of various factors on Option Prices.

Delta stands for the change in Option Premium for a unit change in the Price of the Underlying Share or Index (also stands for Hedge Ratio). Gamma stands for the change in Delta for a unit change in the Price of the Underlying Share or Index. Vega stands for the change in Option Premium for a unit change in the Volatility of the Underlying Share or Index. Theta stands for the change in Option Premium for a unit change in the Time to expiry. Rho stands for the change in Option Premium for a unit change in the Interest Rates

What are In the Money, At The Money and Out of the Money Options?

Those options which, if exercised, will generate Positive Return can be understood as In the Money, without taking the premium paid by the buyer into consideration.

For example, Satyam 260 Feb Call will be In the Money when Satyam share price is above Rs 260. If the share price is Rs 282, the Option will generate Rs 22 on exercise.

Infosys 3500 Feb Put will be In the Money when Infosys share price is below Rs 3,500. If the share price is Rs 3,375, the Option will generate Rs 125 on exercise.

Out of the Money Options are those which will not generate Negative Return if exercised. That is why, out of the money, options are usually never exercised.

For example, Satyam 300 Feb Call will be Out of the Money when Satyam share price is Rs 282.

Infosys 3000 Feb Put will be Out of the Money when Infosys share price is Rs 3,375.

At the Money Options are those whose Strike Prices are equal to the Market Prices. Near the Money Options are those whose Strike Prices are very near the Market Prices.

Out of the Money Options have zero Intrinsic Value. They only carry Time Value.

What are the relationships between Option Delta and type of Options?

Call Options have positive Deltas for buyers and negative deltas for sellers (implying Call Option values will increase when the price of the underlying increases). Put Options have negative Deltas for buyers and positive deltas for sellers (imply Put Option values will decrease when the price of the underlying increases). Out of the Money Options have very low Deltas. In the Money Options have high Deltas. At the Money Call Options have Deltas nearly equal to 0.5 for the buyer and -0.5 for the seller (minus 0.5 in case of Puts for the buyer and plus 0.5 in case of seller).

Far Out of the Money Options have Deltas nearly equal to zero.
Far In the Money Options have Deltas nearly equal to 1/-1 (for buyer 1 /for seller -1)
As the Option moves into the Money, Delta will increase in value.
As the Option moves out of the Money, Delta will decrease in value.

What does the numeric of Delta mean?

If Delta is 0.6 and the underlying share price moves up by Rs 20, the Option price is expected to move up by Rs 12 (i.e. 0.6×20).

What is Time Decay? Who gains because of Time Decay?

On expiry, the value of the Option will be equal to zero (if it expires Out of the Money) or become equal to Intrinsic Value (if it expires In the Money). The Time Value component of the Option will become zero.

Therefore Options are also called as Wasting Assets.

Time Decay will benefit the Seller of Options and works against Buyers of Options.

What are the common mathematical Option Pricing Models?

The most common mathematical Option Pricing Models are:

- Binomial Model (this model assumes that share prices and index values follow a Binomial Distribution)
- Black-Scholes Model (this model assumes that share prices and index values follow a Log-Normal Distribution)

What is the profit profile of the buyers and sellers of Options?

Buyers of options enjoy the potential of unlimited profits, but suffer limited losses. Sellers of options face the potential of unlimited losses, but make limited profits.

In Options market, Buyers are also called Holders. Sellers of Options are also called Writers.

This profit profile is called 'asymmetric'. In contrast, Futures payoffs are 'symmetric'. Both parties (buyers and sellers) can make unlimited profits and losses in Futures.

What are the speculative views of Option market participants?

Call Buyer – Bullish
Call Seller – Bearish or Neutral
Put Buyer – Bearish
Put Seller – Bullish or Neutral

Who pays Option Premium to whom?

Option Premium is paid by the Buyer of the Options to the Seller of Options through the exchange.

The Option Premium paid is the maximum loss a Buyer can ever make and represents the maximum profit the Seller can ever make.

What are Option Strategies?

Option strategies are complex positions created including a combination of options and underlying shares (and futures) which help the investor to benefit from his views.

Some common examples are:

Writing a Covered Call – where you hold the underlying shares and sell a Call Option with an objective to earn Call premium

Protective Put – where you hold the underlying shares and buy a Put Option to provide protection against fall in the value of the underlying shares

Bull Spread – where you buy one call option at a low strike price and sell another call option at a higher strike price (on the same underlying) and want to benefit in a limited manner from bullish view – you could also do this through put options

Bear Spread – where you buy one call option with a high strike price and sell another call option with a lower strike price (on the same underlying) and want to benefit in a limited manner from bearish view – you could also do this through put options

Straddle – where you sell a call option and a put option at the same strike price (or alternatively buy a call option and a put option at the same strike price) (these are also called Jhota / Duranga in the Indian markets)

Strangle – where you sell a call option and a put option at different strike prices on the same underlying (or alternatively buy a call option and a put option at different strike prices)

Combinations – other strategies involving a put and a call (also called fatak in Indian markets)

How can Options be squared up?

A buyer can square up his position by selling a similar option (same underlying, same option type, same expiry month, same strike price).

A seller can square up his position by buying a similar option.

The positions which expire worthless at the expiry automatically get squared up.

The option may be exercised by the buyer and thus the position extinguished.

Who can buy and sell Options in the Indian Market?

There are currently no restrictions on who can buy or sell Options. Accordingly, all investors can buy or sell Options.

What are Over the Counter Options?

Over the Counter Options are non-exchange traded products. These are generally structured by large broking firms and institutions and sold to their clients directly, without the intervention of the exchange. These Options are generally customized to suit client needs.

Participants do face counterparty risk in such Options.

What is the relationship between American and European Options?

American Options will have a value at least equal to European Options. They are more flexible. The minimum value of American Options will be the Intrinsic Value at all times.

What are Option Classes and Series?

All Options on the same underlying, same expiry and same type (Calls or Puts) are called as one Option Class (for example Reliance Feb Calls).

Within one Class, you can have several Series for each strike price (for example Reliance Feb 280 Calls).

Who are Market Makers?

Market Makers are the players who offer continuous bid and ask quotes for particular securities/series.

Who decides Strike Prices?

Strike Prices are decided by the exchange under SEBI guidelines.

Who pays Margins in Options?

Margins are paid only by Sellers in the Options market. Buyers pay Premium and hence no Margins are applicable.

Questions on Chapter 2 : Options

1) Which of the following is true?

Ans:

- a) An American option can be exercised on an American Options Exchange.
- b) An American option must be exercised on the expiration date
- c) An American option must be exercised before the expiration date
- d) An American option can be exercised on or before the expiration date

2) A stock option is an example of a

Ans:

- a) Commodity
- b) derivative instrument
- c) money market instrument
- d) foreign Exchange contract

3) Delta for a Call Option buyer is:

Ans:

- a) Positive
- b) Negative
- c) Cannot say
- d) Can be positive or negative

4) Delta is a measure of:

Ans:

- a) change in the premium with respect to the change in the price of underlying
- b) return on the instrument
- c) safety of an instrument
- d) change in an option value for a unit change in the volatility of the underlying

5) The Black-Scholes model is used for the pricing of:

Ans:

- a) Index futures
- b) Options
- c) Equity shares
- d) Corporate debt

6) Which is the ratio of change in delta for a unit change in the price of the underlying?

Ans:

- a) Vega
- b) Rho
- c) Theta
- d) Gamma

7) An European Option

Ans:

- a) can be exercised anytime during the life of the Option
- b) can be exercised only at maturity
- c) is traded only on the European Exchange
- d) is a floating rate option

8) A Call Option gives the Holder the right

Ans:

- a) to buy the underlying asset
- b) to sell the underlying asset
- c) to either sell or buy the underlying asset, as he wishes
- d) None of the above

9) An Over The Counter option

Ans:

- a) is a standardised contract traded on an Exchange
- b) is a contract tailored to suit individual requirements
- c) is an option on stocks of pharmaceutical companies
- d) can be bought from any option writer

10) Which of the following options will yield a profit to the purchaser?

Ans:

- a) An expired option that is "at the money"
- b) A call option when the price of the underlying share increases above the option's strike price by an amount greater than the premium paid for the option
- c) A put option when the price of the underlying increases above the option's strike price by an amount greater than the premium paid for the options
- d) An out-of-the-money option

11) Expiry date is the date on or before which the option must be exercised.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

12) Which of the following is true?

Ans:

- a) European options can be exercised anytime before the expiration date
- b) European options can be exercised on or before the expiration date
- c) European options must be exercised on the expiration date
- d) European options can be exercised only on the expiration date

13) Volatility of prices of the underlying assets and dividend yield do not affect the option values.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

14) The strategy of buying a put option on a stock that you possess is called

Ans:

- a) writing a naked option
- b) writing a covered call
- c) protective put strategy
- d) None of the above

15) A bull spread can be created by

Ans:

- a) buying one call and selling another call
- b) buying one put and buying one call
- c) selling one call and buying two puts
- d) None of the above

16) In an In-the-money call option the exercise price would be lower than the market price.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

17) Intrinsic value of an option cannot be negative.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

18) A long position in a call option may be squared up by taking a long position in a put option with identical exercised date and exercise price.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

19) Strike price is the price for which the underlying may be purchased (in case of a call) or sold (in case of put) by the option writer upon exercise of the option.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

20) An investor is bullish on a particular stock, but does not possess liquid cash to buy the scrip. What should he do?

Ans:

- a) buy an index-future
- b) wait till he saves enough money
- c) do nothing
- d) buy an option on the particular stock

21) Who can write an option?

Ans:

- a) Only Market Makers
- b) Only FIIS
- c) Any person whether he owns underlying stock or not
- d) Any person owning underlying stock

22) Selling long a stock means

Ans:

- a) seller does not own the stock he is supposed to deliver
- b) seller has to deliver the stock after a long time
- c) seller owns the stock he is supposed to deliver
- d) seller has to deliver the stock alongwith interest

23) Premium of Infosys call option can be more than market price of Infosys.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

24) Mr. X purchases 100 Infosys put option @ 200 per option with a strike price of Rs.3600. If on exercise date Infosys stock price is 3700, ignoring transaction cost Mr. X will choose

Ans:

- a) to exercise the option.
- b) not to exercise the option.
- c) may or may not exercise the option depending on whether he is in Mumbai or not at that time
- d) None of the above

25) Market makers add

Ans:

- a) Speculation to the market.
- b) Liquidity to the market.
- c) Fluctuation to the market.
- d) nothing to the market.

26) Longer the time to maturity of the call option, lesser will be its time value.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

27) With decrease in strike price, the premium on call decreases.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only

28) Higher values of stocks induce reduction in the premium on put options in absolute terms.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

29) In exercising call option on a stock, the option holder acquires long position in the underlying from the option writer (where settlement is effected by delivery)

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

30) Buyer of OTM put option is

Ans:

- a) bullish - payer of premium
- b) bullish - receiver of premium
- c) bearish - payer of premium
- d) bearish - receiver of premium

31) Which of the following is true.

Ans:

- a) A spread trading strategy involves taking a position in two or more options of the different type.
- b) A spread trading strategy involves taking a position in two or more options of the same type.
- c) A spread trading strategy involves taking a position in one put and five call options of different types.
- d) None of the above

32) A fatak (combination strategy) involves a call option and a put option.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

33) ACC and L&T are both quoted at Rs 300 per share. ACC is more volatile than L&T. Which Put will be priced higher?

Ans:

- a) ACC
- b) L&T
- c) Both will be equally priced
- d) Both will be priced at Rs 10

34) Three Call series of Satyam - March, April and May are quoted. Which will have the lowest Option Premium?

Ans:

- a) April
- b) May
- c) March
- d) All will be equal

35) The holder of a long position in call option benefits if the price of underlying asset

Ans:

- a) increases
- b) decreases
- c) does not change
- d) can not say

36) If an investor buys a call option with a low strike price and sell a call option with higher strike price on the same share and expiration date the strategy is called

Ans:

- a. bull spread
- b. bear spread
- c. butterfly spread
- d. calendar spread

37) An investor entering into a bear spread is expecting

Ans:

- a) increase in the price of underlying asset
- b) decrease in the price of underlying asset
- c) no change in the price of underlying asset
- d) Cannot Say

38) Options contracts are not symmetrical with respect to rights and obligations of the parties involved.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

39) A long position in a call option can be closed out by taking a short position in the same call option.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

40) A call option gives the holder the right but not the obligation of buying from the writer an underlying asset at a specified price on or before the expiry date.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

41) A naked call option is one for which the writer does not currently own the underlying.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

42) In option terminology, theta is the change in delta for a unit change in the price of the underlying.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

43) Options are

Ans:

- a) contracts that can be settled in cash or settled by delivery depending on the choice of the seller of the options
- b) contracts that can be settled in cash or settled by delivery depending on the choice of the buyer of the options
- c) contracts that can be settled in cash or settled by delivery depending on the terms of the contract as decided by the exchange
- d) None of the above

44) Exercise price is the price for which the underlying may be sold (in case of a call) or purchased (in case of put) by the option buyer upon exercise of the option.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

45) In an European option, the exercise date and expiration date

Ans:

- a) always differ.
- b) may be the same.
- c) are necessarily the same.
- d) None of the above.

46) Time value and Intrinsic value together comprise option premium.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

47) A covered call is one where

Ans:

- a) the writer does not own the underlying asset
- b) the writer owns the underlying asset
- c) the buyer does not have to pay a premium for buying the option
- d) None of the above

48) Interest rates affects option premium.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

49) Holders of Over the counter Option (I.e. those options not traded on any stock exchange)

Ans:

- a) have to pay mark-to-market margins daily
- b) have to pay mark-to-market margins once a week
- c) do not have to pay mark-to-market margins
- d) have to pay margins only for out-of-the-money options

50) The buyer of an option can lose no more than the option premium paid

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

51) The risk profile for an options contract is

Ans:

- a) symmetric
- b) asymmetric
- c) similar to that of a futures contract
- d) None of the above

52) Only shareholders of company can write an option.

Ans:

- a) True
- b) False
- c) True only in Mumbai
- d) True only in Delhi

53) Stock price is same as

Ans:

- a) Strike price
- b) Exercise price
- c) Price of the underlying
- d) None of the above

54) Exchange traded options are standardised options

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

55) American option can not have a value less than that of European option

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

56) Purchaser of a call option has expectation that stock price will

Ans:

- a) Increase
- b) Decrease
- c) Remain constant
- d) None of the above.

57) In an options contract on futures, the underlying asset is a

Ans:

- a) Present contract
- b) Past contract
- c) Futures contract
- d) None of the above.

58) An option series consist of

Ans:

- a) all options of different class with same expiration date & strike price.
- b) all options of a given class with different expiration date & strike price.
- c) Options of same type
- d) all options of a given class with same expiration date & strike price.

59) The bid is the price at which market maker is prepared

Ans:

- a) to buy.
- b) to sell.
- c) to remain idle
- d) None of the above

60) Exercise prices of options are specified by

Ans:

- a) Government
- b) Company
- c) Market makers
- d) Exchange

61) Higher the volatility of the stock, lower the premium the call option would fetch.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

62) Following are the assumptions of the Black-Scholes model

Ans:

- a) Information is not available to all market participants.
- b) Information is available only to Institutions.
- c) Funds can be borrowed and lent at different rates of interest.
- d) None of the above.

63) The purchase of a share in one market and the simultaneous sale in a different market to benefit from price differentials is known as

Ans:

- a) mortgage
- b) arbitrage
- c) garbage
- d) bandage

64) Steep margins would ensure the development of a successful market.

Ans:

- a) True
- b) False
- c) True only in USA
- d) True only in Japan

65) If Reliance weekly volatility is known then Reliance Annual Volatility is equal to

Ans:

- a) Weekly Volatility $\times$ 52
- b) Weekly Volatility $\times$ Sqrt of 52
- c) Weekly Volatility $\times$ 12
- d) Weekly Volatility $\times$ Sqrt of 12

CHAPTER 3

MARGINS AND REGULATIONS

What are the responsibilities of the Clearing Corporation?

Responsibilities include:

- Ensuring Collection of Margins on timely basis
- Ensuring smooth running of the Market
- Ensuring Daily Clearing and Settlement
- Acting as a legal counterparty for every contract
- Monitor positions in derivatives and cash segments
- Decide Daily Settlement Prices
- Keep track of margins at client level
- Take care not to appropriate client margins against brokers dues

The Clearing Corporation can transfer client positions from one broker member to another broker member in the event of a default by the first broker member.

What are the functions of SEBI in the derivatives market?

- To act as an overall policy maker for the market
- To approve new derivative products/contracts
- To approve changes in rules, regulations and bye-laws of exchanges
- To approve initial rules, regulations and bye-laws of the derivatives segment

Which brokers can trade in Derivatives?

Brokers who have become members of the Derivatives segment in an exchange, which is permitted to trade in Derivatives, can trade in Derivatives. Technically, Trading Members in such exchange segments are allowed to trade.

What kind of Broker-members operate in the Derivatives market?

There are two kinds of basic members, viz. Clearing Members and Trading Members. Clearing Members can clear trades with the Clearing Corporation. Trading Members are provided with terminals for trading.

Clearing Members can be of two types – viz – Clearing-cum-Trading Members (members who are allowed to clear as well as trade) and Professional Clearing Members (members who can only clear and not trade).

Trading Members cannot clear trades with the Clearing Corporation. They have to get their trades cleared through a Clearing Member. Each Trading Member should be associated only with One Clearing Member for this purpose.

Clearing Members can and will clear trades of:

- Their own proprietary trades
- Trades of their clients
- Trades of their Trading Members
- Trades of the clients of their Trading Members

Custodian Clearing Members are Professional Clearing Members.

Professional Clearing Members do not directly trade through their own terminals. They do not have any clients of their own. They do have Trading Members under them, who can trade for their own account and also trade on behalf of their clients. Professional Clearing Members are generally institutions.

There is a special category of members called Limited Trading Members allowed on the BSE, who are not cash market members of BSE.

Who decides the Net Worth criteria for Broker-members?

Net Worth criteria for Clearing Members has been provided by SEBI, while Net Worth criteria for Trading Members and limited Trading Members has been decided by stock exchanges.

What is the Net Worth requirement for Clearing Members?

Rs 3 crores

What assets are to be excluded while calculating Net Worth?

Fixed Assets
Pledged Securities
Value of the Membership Card
Unlisted Securities
Bad Deliveries
Doubtful Debts
Prepaid Expenses
Intangible Assets

What method of margining is applicable for Futures?

Value at Risk Method at 99% confidence.

How are derivatives settled in India currently?

Derivative transactions are currently settled in cash. It is expected that settlement of stock futures and stock options will be converted to physical settlement soon.

What is the Minimum Derivative Contract Value?

The Minimum Derivative Contract Notional Value should be Rs 2 lakhs at the point of introduction of the contract. For example, when the Sensex Futures contract was introduced in June 2000, the multiplier was fixed at 50 units, because the Sensex was above 4000 points and 4000×50 was over Rs 2 lakhs. It does not matter if the contract value goes below Rs 2 lakhs thereafter.

What happens if Margins are not paid?

The Clearing Corporation can close out positions of Clearing Members whose margins have not been paid in.

Similarly, Clearing Members can close out positions of Trading Members and Clients whose margins have not been paid in.

What is Risk Disclosure Document?

The broker is required to get a Risk Disclosure Document signed by the client, at the time of client registration. This document informs clients about the kind of risks that derivatives can involve for the client. It makes the client aware and well informed.

What are the records Trading Members are required to retain and for how long should these records be maintained?

Apart from other records, Trading Members are required to maintain trade confirmation slips and exercise notices from the trading system for a period of 5 years.

What is the Inspection requirement in derivatives segment?

All member brokers in the derivative segment should be inspected by the exchange at least once a year.

What type of Margins are payable on Futures and Options?

Both buyers and sellers of Futures should pay an Initial Margin to the exchange at the point of entering into Futures contracts. This Initial Margin is retained by the exchange till these transactions are squared up/expired. Initial Margin can be paid in cash or cash equivalents or equity securities. Cash equivalents include fixed deposits, treasury bills, bank guarantees, government securities and investment grade debt securities.

Further, Mark to Market Margins are payable based on closing prices at the end of each trading day on Futures. These Margins will be paid by the party who suffered losses and will be received by the party who made profits. The exchange thus collects these margins from the losers and pays them to the winners on a daily basis. Mark to Market Margins are payable in cash.

On Options, only sellers are required to pay Margins. These margins can be paid in cash or cash equivalents or equity securities.

Investors can withdraw any excess margins that may have paid to the exchange or its brokers.

What is the implication of default by a Member in the derivatives segment?

A default by a Member in the derivatives segment will be treated as default in all segments of that exchange and as default on all exchanges where he is a Member.

What are Position Limits and who sets them?

Position limits are the maximum exposure levels which the entire market can go upto and each Clearing Member or investor can go upto.

Position limits for the entire market and Clearing Members and investors are defined by SEBI.

Each Clearing Member may have several Trading Members with him. The trading limits for each such Trading Member are decided by Clearing Members on the computerized trading system.

If the Trading Member reaches his position limit, he will not be able to enter any fresh transactions which have the impact of increase his exposure. He will be enter only those transactions which have the impact of reducing his exposure. Thus new positions will not be permitted, but squaring up will be permitted.

What are the major recommendations of the L C Gupta Committee?

- The Report deals with equity derivatives and was approved by SEBI
- Margins should be based on Value at Risk Methodology at 99% confidence
- Volatility should be monitored on line
- Exposure should be monitored on line
- Mark to Market Margins must be collected on daily basis (on the next trading day)
- Volatility and margin methodology should be known to all market participants
- Entry norms for broker-members should be more stringent than the cash market
- Each dealer should pass SEBI approved certification exams (certificate will have a validity of 3 years)
- Derivatives segment must be separate from cash segment
- Margins should be grossed up at client level
- Separate Investor Protection Fund must be created for derivatives segment
- Off line order entry is permitted
- The derivatives segment should attract at least 50 members
- Clearing Members should have a Minimum Net Worth of Rs 3 crores
- Clearing Members should maintain a Minimum Deposit in Liquid Assets of Rs 50 lakhs with the exchange or its Clearing Corporation
- Mark to Margins should be settled only in Cash
- Both speculators and hedgers are required for a healthy derivatives market
- Exchanges and SEBI should both work together in regulating the derivatives market
- Exchanges should regulate at operational day to day level, while SEBI will oversee the process and formulate policy
- Mutual Funds should be allowed to hedge in derivatives segment
- Derivatives should begin with Index Futures and other products should be introduced in a phased manner
- Members exposure should be linked to the amount of liquid assets maintained by them with the clearing corporation
- Cross margining (linking overall cash and derivative positions for margining) is not permitted (this makes Indian margining system more costly compared to countries abroad).
- All clients should pay margins. Brokers should not fund margins of clients.
- In the long run, India should have a national level clearing corporation
- Clients should be provided with a Risk Disclosure Document by brokers
- Brokers should keep margins collected from clients in a separate bank account
- Brokers cannot use margins for any purpose except for payment of such margins to the clearing corporation
- Transactions should be entered in the trading system exclusive of brokerage
- Brokerage should be charged separately in the Contract Note
- In case of Clearing Member default, margins paid by the Clearing Member on his own account alone would be used to settle his dues
- All brokers in the derivatives segment should obtain SEBI Registration
- The clearing function should be organized as a separate entity, preferably in the form of a Clearing Corporation
- The Clearing Corporation has powers to levy additional margins, special margins, define maximum exposure limits and disable brokers from trading
- At the time of entering into a transaction, the broker must indicate the client on whose behalf the transaction is being entered into. Proprietary trading must also be clearly identified.
- SEBI should create a Special Derivatives Cell within itself to understand and supervise the market better
- SEBI should constitute an Advisory Council for derivatives
- Derivatives segment should have a separate Governing Council

- No common members should be allowed between the Cash segment Governing Board and the Derivatives segment Governing Council of the exchanges
- The exchange should set up Arbitration and Investor Grievance Cells in at least 4 regions across the country
- Derivatives trading must be through on-line systems
- Disaster recovery site (in case of computer failure) is a must
- Information about derivatives segment must be disseminated over at least two information vending networks (e.g. Reuters, Bloomberg)
- All brokers of the Cash segment will not automatically become members of the Derivative segment
- An efficient cash market is a must for a healthy derivatives market
- Delivery levels in the cash market should improve and increase
- Uniform settlement cycles across all exchanges is recommended
- A separate Governing Board should be constituted for the Clearing Corporation of the Derivatives segment
- No broker members should be allowed to sit on the Governing Board of the Clearing Corporation
- If your client is a Trust or a Company, you (as a broker) must obtain authorization from the Board of Trustees or Board of Directors for trading in derivatives on their behalf
- Providing Client ID for every transaction is mandatory

What reports does the derivatives segment have to provide to SEBI

1. Occasions when the 99% Value at Risk limit has been violated
2. Defaults by broker-members
3. Daily market activity report
4. Daily market report

What are the major recommendations of the J R Verma Committee

- Calendar spreads on futures will attract lower margins (minimum 1% and maximum 3% - the margin itself being 0.5% per month of spread on the far month value)
- Detailed methodology on Value at Risk provided
- Volatility should be calculated based on standard deviation of logarithmic daily returns
- Exponential weighted average method should be used for calculation of Volatility
- Initial Margin levels should be dynamic and recalculated continuously based on volatility levels
- Exchange should obtain SEBI approval if it wants to change the Initial Margin calculation methodology
- Initial Margin, if changed, will apply to all outstanding contracts and not only to fresh contracts
- Calendar spreads carry only basis risk and no market risk – hence lower margins are adequate
- Calendar spreads should be treated as open positions as the near month expires
- Differential margins on conversion of Calendar spread positions to open positions should be collected three days before expiry of the near month (technically, the J R Verma Committee recommendation was different, however currently as per SEBI guidelines, this is the regulation)
- Liquid Assets mean Deposits maintained by Clearing Members with the Clearing Corporation
- Liquid Assets can be in the form of Cash, Cash Equivalents (Government Securities, Fixed Deposits, Treasury Bills, Bank Guarantees, Investment Grade Debt Securities) and Equity Securities
- Equity Securities can form maximum 50% of Liquid Assets
- Cash and Cash Equivalents must form minimum 50% of Liquid Assets
- Liquid Net Worth is defined as Liquid Assets minus Initial Margin
- Liquid Net Worth of all Clearing Members at all points of time (including intra day) should be

maintained at Rs 50 lakhs minimum level

- Securities placed with the Clearing Corporation shall be marked to market on weekly basis
- Hair cut on equity securities is 15%
- Hair cut on debt securities is 10%

What are the relevant SEBI guidelines and SCRA provisions for this market?

The purpose of inspection of stock brokers records under the SEBI (Stock Broker & Sub- Brokers) Regulations , 1992 is to ensure that the books of accounts and other books are being maintained in the manner required.

The recognition to a stock exchange under the Securities Contract (Regulation) Act 1956 can be granted by the Central Government.

The board members of the Securities Exchange Board of India under the SEBI Act are appointed by the Central Government.

A penalty or suspension of registration of a stock - broker under the SEBI (Stock Broker & Sub - Broker) Regulations, 1992 can be ordered if:

- the stock broker violates the provisions of the Act
- the stock broker does not follow the code of conduct
- the stock broker fails to resolve the complaints of the investors
- the stock broker indulges in manipulating, or price rigging or cornering of the market
- the stock broker's financial position deteriorates substantially
- the Stock broker fails to pay fees
- the stock broker violates the conditions of registration
- the stock broker is suspended by the stock exchange

What is the Trade Guarantee Fund?

The main objectives of Trade Guarantee Fund (TGF) at BSE are:

- to guarantee settlement of bonafide transactions of the members of the exchange
- to inculcate confidence in the minds of market participants
- To protect the interest of the investors in securities

All active members of the BSE are required to make initial contribution towards Trade Guarantee Fund of the Exchange.

The SCRA was amended in December 1999 to provide for Index Futures as a Security. Ban on Options Trading was also lifted in this amendment.

Chapter 3 : Margins and Regulations

Questions

1) At the end of each trading day, the Clearing House process of settling your account on a cash basis (funds added to your balance if your position has made a profit, deducted if you sustained a loss) is called:

Ans:

- a) Marking to the market.
- b) Performance bond call.
- c) Maintenance performance bond call.
- d) Initial performance bond call.

2) Minimum networth for a trading member of the BSE's derivative segment shall be

Ans:

- a) Rs. 2 crore
- b) Rs. 3 crore
- c) Rs. 5 crore
- d) None of the above

3) Daily mark-to-market margin payments arise on adverse positions resulting from price movements in futures.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

4) Mark-to-market margins will be collected on a :

Ans:

- a) Weekly basis
- b) every 2 days
- c) every 3 days
- d) daily basis

5) Who will be eligible for clearing trades in stock futures?

Ans;

- a) All Indian citizens
- b) All members of the BSE
- c) Only members who are registered with the Derivatives Segment as Clearing Members
- d) All of the above

6) The minimum notional contract value of an stock futures contract (at the time of introduction of index futures) has been specified by the parliamentary committee as :

Ans;

- a) Rs. 1 lakh
- b) Rs. 2 lakh
- c) Rs. 3 lakh
- d) There was no minimum notional contract value

7) A trading member of a derivatives segment must maintain trade confirmation slips and exercise notice record from the trading system of the Exchange for a period of

Ans:

- a) 1 year
- b) 2 years
- c) 3 years
- d) 5 years

8) The daily settlement price for index futures shall be decided by

Ans:

- a) SEBI
- b) the Reserve Bank of India
- c) the Clearing Corporation / house
- d) None of the above

9) The risks associated with trading in derivatives have to be laid down in?

Ans;

- a) a verbal agreement with the client
- b) the risk disclosure document
- c) need not be laid down
- d) None of the above

10) If the price of a future contract decreases, the margin account of the buyer of futures is debited for the loss.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

11) Mark to market in futures means adjusting the portfolio value daily to the current market price of Futures on the exchange.

Ans;

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

12) If a trading member exceeds his prescribed position limit,

Ans:

- a) He would be able to only close his own contracts.
- b) He would be able to open new positions
- c) All his dealers will be disqualified.
- d) None of the above

13) Initial margin (and Price Scan Range) on Index Futures would be calculated on the basis of

Ans:

- a) volatility estimates on line
- b) volatility estimates at the end of yesterday.
- c) volatility estimates at the end of tomorrow.
- d) None of the above

14) Initial margin of the previous day must be paid

Ans:

- a) by the end of the day.
- b) before beginning of the next trading day.
- c) during banking hours next day.
- d) None of the above

15) Volatility estimation methodology

Ans:

- a) Is known to all market participants
- b) is kept secret by the exchange.
- c) should be known to few people only.
- d) None of the above

16) Daily Mark-to-market margin for index futures contract

Ans:

- a) is calculated on the daily closing price of index futures
- b) is calculated on the basis of weighted average of the index.
- c) is calculated on the basis of average of last 30 minutes values of the index.
- d) None of the above

17) Separation of trading, settlement, accounting and risk control function

Ans:

- a) minimises operation risk at the level of firm.
- b) creates new operation risk.
- c) forces people to cheat in the firm.
- d) None of the above

18) The purpose of initial margin is

Ans:

- a) to insure futures contract writer against any loss on their position.
- b) to account for daily profit or loss on position.
- c) to protect the clearing house from a one day adverse price movement on an open position.
- d) None of the above

19) The margin requirements for the derivatives segment would be prescribed by

Ans:

- a) The SEBI
- b) The Stock Exchange
- c) The RBI
- d) None of the above

20) A sub - Broker can charge commission from his client under the SEBI (Stock Broker and Sub- Brokers) Regulations, 1992

Ans:

- a) not exceeding one and half percent of the value mentioned in the sale or purchase note
- b) not exceeding half percent of the value mentioned in the sale or purchase note
- c) not exceeding two and half percent of value mentioned in the sale or purchase note
- d) None of the above

21) The L. C. Gupta Committee has recommended that initial margin should be calculated on

Ans:

- a) gross basis
- b) net basis
- c) no basis as margins should not be made applicable
- d) 200% margin should be collected

22) The minimum number of members for an Exchange to start trading in derivatives is:

Ans:

- a) 100
- b) 50
- c) 500
- d) 1000

23) The L C Gupta Committee recommended that the exchanges and SEBI be involved in regulation of the derivatives market.

Ans;

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

24) L.C.Gupta Committee is of the opinion that entry requirements for brokers/ dealers for derivatives market should be the same as that for the cash market.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

25) All active members of the BSE are required to make initial contribution towards Trade Guarantee Fund of the Exchange.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

26) In L.C. Gupta Committee's view, collection of initial and mark-to-market margins by brokers from their clients should be insisted upon in the case of derivatives trading

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

27) Margins' in 'Futures' trading are to be paid by

Ans:

- a) only the buyer
- b) only the seller
- c) both the buyer and seller
- d) the clearing corporation

28) Which method is used to obtain the volatility estimate?

Ans:

- a) Exponential weighted moving average method.
- b) Weighted average method.
- c) Simple average method
- d) None of the above.

29) Lower margins would induce more players to join the market.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

30) Higher margins would result in less number of players wanting to join the market

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

31) The L.C. Gupta Committee has recommended cross margining which takes into account a dealer's combined position in the cash and derivatives segments.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

32) Initial margin is set up taking into account the volatility of the underlying market. Generally higher the volatility, higher is the initial margin

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

33) The Securities Contract (Regulation) Act 1956 was amended in December 1999 in order to redefine the definition of 'securities' so as to include:

Ans:

- a) a share as a security
- b) share index as a security
- c) government bond as a security
- d) debenture as a security

34) Brokerage charged to clients must be indicated separately from the price in the contract note

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

35) There is a higher probability in derivatives market as compared to cash markets that client does not properly understand the risks involved

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

36) In case of a clearing member default, the margin paid by such member on his own account only would be allowed to be used by the clearing corporation for realising its own dues from the member. Clients margins will remain unaffected.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

37) Clearing corporation on a derivatives exchange should become a legal counterparty to all trades and be responsible for guaranteeing settlement for all open positions

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

38) Clearing members in derivatives exchange shall make a deposit of Rs.50 lakhs with the Exchange/ Clearing Corporation in the form of liquid assets.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

39) L.C. Gupta Committee has specified that derivatives exchange should have arbitration and investor grievance mechanism operating from at least four regions in the country

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

40) L.C. Gupta Committee has recommended that the existing stock exchanges having cash trading may also be permitted to trade derivatives provided they meet certain minimum eligibility conditions

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

41) The L.C. Gupta Committee has recommended that mutual funds be allowed to hedge as well as speculate in the index futures markets.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

42) Clearing members in derivatives exchange shall make a minimum deposit of Rs.100 lakhs with the exchange/clearing corporation in the form of liquid assets

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

43) In a derivatives exchange the networth requirement for a clearing member is less than that for a non-clearing member

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

44) L.C. Gupta Committee has stated that since derivatives exchanges are going to work as self Regulatory Organizations, they can frame and change their rules, bye-laws and regulations, subject to the approval of their governing council, but does not require the approval of any regulator.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

45) The derivatives market would be under the same governing council as the cash segment in one exchange

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

46) The Clearing Corporation/House has the power to disable a defaulting Clearing Member from trading further.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

47) Liquid Net Worth of Clearing Members defined as per the J R Verma Report as

Ans:

- a) Liquid Assets maintained with the Clearing Corporation/House less Initial Margin applicable
- b) Liquid Assets maintained with the bankers by the Clearing Members less Current Liabilities
- c) Working Capital as per the Balance Sheet of the Clearing Member
- d) None of the above

48) Treasury Bills are also permitted to be offered by Clearing Members to the Clearing Corporation/House as part of Liquid Assets.

Ans;

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

49) Liquid Assets maintained by Mr A (Clearing Member) are higher than that maintained by Mr B (Clearing Member). Which of the following statements is true?

Ans:

- a) Mr A can enjoy higher exposure levels in futures than Mr B.
- b) Mr B can enjoy higher exposure levels in futures than Mr A.
- c) Both Mr A and Mr B will enjoy the same exposure levels.
- d) None of the above

50) Liquid Net Worth is always higher than Liquid Assets maintained by Clearing Members with the Clearing Corporation/House.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

51) Liquid Assets minus Initial Margin is equal to Liquid Net Worth.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

52) Liquid Assets offered by a Clearing Member to the Clearing Corporation/House can comprise of equity shares to the extent of 75% of such Liquid Assets.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

53) Mr A (Clearing Member) has maintained Liquid Assets of Rs 5 crores with the Clearing Corporation/ House comprising partly of equity shares 30 days ago. He has not withdrawn any of the Assets in the last 30 days. Which of the following statements is true?

Ans:

- a) The value of Liquid Assets will be reckoned as Rs 5 crores as of today.
- b) The value of Liquid Assets will certainly increase as time passes, as some of the securities will earn interest and dividends.
- c) The value of Liquid Assets will certainly decrease due to deterioration in the value of securities in a bad market.
- d) None of the above is necessarily correct.

54) Clearing Member A has 3 Trading Members (all in Mumbai), while Clearing B has 3 Trading Members (all outside Mumbai). Which of the following statements is true?

Ans:

- a) Clearing Member A enjoys a higher exposure limit than B.
- b) Clearing Member A enjoys a lower exposure limit than B.
- c) None of the above.

55) Client A has purchased one contract in December series and Client B has sold one contract in December series of the BSE Sensex Futures. Both the clients operate through the same Trading Member. Will these positions qualify as a calendar spread transaction?

Ans:

- a) Yes
- b) No
- c) Yes only in 2002
- d) Yes only in 2001

56) In a falling market, calendar spread margins will be increased by the stock exchange authorities to curb volatility.

Ans:

- a) True
- b) False
- c) True only in 2001
- d) True only in 2002

57) Calendar spread transactions on index futures carry a high level of risk for the stock exchange authorities as they attract very low margins.

Ans:

- a) True
- b) False

58) A Professional Clearing Member:

Ans:

- a) Is a member on the cash segment of the stock exchange.
- b) May or may not be a member on the cash segment of the stock exchange.
- c) Should become a member on cash segment of the stock exchange within 3 years
- d) None of the above

59) You are a Trading Member. One of your clients A has purchased 10 contracts (50 Units each) of December series index futures and another client B has sold 15 contracts of January series index futures. Your exposure will be:

Ans:

- a) Grossed up at 25 contracts
- b) Netted out at 5 contracts
- c) Grossed up at 5 contracts .
- d) None of the above

60) Value-at-risk is calculated on the basis of

Ans:

- a) historical volatility
- b) perfect market hypothesis
- c) equilibrium market prices.
- d) None of the above

CHAPTER 4

FUTURES – ARITHMETICAL PROBLEMS

1) An investor has done the following two spread trades in sensex futures contracts. What is her profit (+) or loss(-)? Bought 10 contracts Jan-Feb @ 2, Sold 10 contracts Jan-Feb @ 17.

Ans:

- a) Rs.150
- b) Rs.7500
- c) Rs.375000
- d) None of the above

2) An investor has done the following two spread trades in sensex futures contracts. What is her profit (+) or loss(-)? Bought 10 Jan-Feb Spread [Sold Jan @ 3660 ;Bought Feb @ 3662], Sold 10 Jan-Feb Spread [Bought Jan @ 3700 ; Sold Feb @ 3717]

Ans:

- a) Rs.375000
- b) Rs.150
- c) Rs.7500
- d) None of these

3) An investor has open position of 10 contract long and 20 contract short in sensex future March and April series respectively. What are her open positions in March series after considering the spread position.

Ans:

- a) 0
- b) 10
- c) 20
- d) None of these

4) An investor has open position of 10 contract long, 10 contract long and 10 contract short in sensex future March, April and May series respectively. What are her spreads across March-April?

Ans:

- a) 0
- b) 10
- c) 20
- d) None of these

5) An investor has an open position of 10 contracts short and 23 contracts long in March and April Series respectively. How many contracts are covered under calendar spread?

Ans:

- a) 23
- b) 13
- c) 10
- d) None of these

6) You have taken a short position of one contract on the June Sensex futures at a price of 3,000. You desire to make a profit of Rs 10,000. Which of the following actions will enable to generate your profit? You may ignore brokerage costs.

Ans:

- a) Buying 2 June Sensex futures contracts at 2900
- b) Buying 1 September Sensex futures contract at 2700.
- c) Buying 1 June Sensex futures contract at 2800.
- d) Selling 1 June Sensex futures contract at 3200.

7) At a sensex futures price level of 3000, what will be the value of one sensex futures contract?

Ans:

- a) Rs.3000
- b) Rs.300000
- c) Rs.150000
- d) None of these

8) If you have bought a Sensex future at 3200 and sold at 3600 what is your profit/loss?

Ans:

- a) loss Rs.18,000
- b) gain Rs.20,000
- c) gain Rs.18,000
- d) loss Rs.20,000

9) If you have short sold a Sensex future at 3000 and bought it at 3100, what is your gain / loss?

Ans:

- a) A loss of Rs. 5000
- b) A gain of Rs. 500
- c) A gain of Rs. 5000
- d) A loss of Rs. 500

10) The shares of XYZ Ltd are currently quoted at Rs 100. Futures on this share are quoted at Rs 110. In what situation would you buy these futures?

Ans:

- a) You expect the price of the share to move up by 5%
- b) You expect the price of the share to move up by 7%
- c) You expect the price of the share to move up by 25%
- d) You expect the price of the share to move up by 8%

11) You own 10,000 shares of ABC at a share price of Rs. 100. The stock has a beta of 1. You wish to create a perfect hedge by selling stock index futures. What should be the value of stock index futures that you should sell?

Ans:

- a) Rs.10,000
- b) Rs.10,00,000
- c) Rs.100
- d) None of these

12) Which of the following is closest to the forward price of a share price if Cash Price = Rs.750, Forward Contract Maturity = 6 months from date, Market Interest rate = 12%?

Ans:

- a) Rs.845
- b) Rs.795
- c) Rs.745
- d) None of these

13) On BSE, for its index futures what would be the opening day of its January series?

Ans:

- a) 1st trading day after last Thursday in December
- b) 1st trading day after last Thursday in October
- c) 1st trading day after last Thursday in January
- d) 1st trading day after last Friday in February

14) In an Index Futures Contract, if the tick size is 0.1 of an index point and the index multiple is at Rs.50, 'a tick' is valued at:

Ans:

- a) Rs 5.00
- b) Rs.12.50

c) Re.0.25

d) Re.0.50

15) A stock Index is currently at 3000. The risk-free rate of return is 12% and the dividend yield on the Index is 2% per annum. Which of the following comes closest to the futures price for a contract with 3 months to expiration

Ans:

- a) 3040
- b) 3075
- c) 3090
- d) 3095

16) A trader bought 10 Jan Sensex contracts at the BSE. How will the trader close out this position in the market?

Ans:

- a) Sell 10 Jan sensex contracts
- b) Sell 15 Feb. nifty contracts
- c) Buy 15 March sensex contracts
- d) Buy 15 March nifty contracts

17) If you are holding a stock with a beta of 1.2 for value of Rs.30,00,000 how many BSE Index futures contracts would you sell for the best hedge, if the Index futures are quoted at 4,200? You may choose the nearest round figure for your purposes.

Ans:

- a) 22
- b) 17
- c) 12
- d) None of these

18) You bought January Satyam Futures @ Rs 268 and the lot size is 1,200. What is your profit (+) or loss(-) if you sell at Rs 270 ?

Ans:

- a) Rs.3400
- b) Rs.2400
- c) Rs.1400
- d) None of these

19) You sold January Satyam Futures @ Rs 278 and the lot size is 1,200. What is your profit (+) or loss(-) If you purchase at Rs 250 ?

Ans:

- a) Rs.34,600
- b) Rs.33,600
- c) Rs.32,600
- d) None of these

20) You sold January Satyam Futures @ Rs 248 and the lot size is 1,200. What is your profit (+) or loss (-) if you purchase at Rs 274?

Ans:

- a) Rs.-30,200
- b) Rs.-31,200
- c) Rs.-32,200
- d) None of these

21) You bought January Satyam Futures @ Rs 268 and the lot size is 1,200. What is your profit (+) or loss(-) if you sell at Rs 225 ?

Ans:

- a) -50,600
- b) -51,600
- c) -52,600
- d) None of these

CHAPTER 5

OPTIONS – ARITHMETICAL PROBLEMS

1) You have bought Satyam Call strike price Rs. 240 at a premium of Rs.25. Lot size is 1,200. What is your profit (+) or loss(-) if you sell the Call at Rs 40?

Ans:

- a) Rs.19,000
- b) Rs.17,000
- c) Rs.18,000
- d) None of these

2) You have bought Satyam Call strike price Rs. 270 at a premium of Rs.55. Lot size is 1,200. What is your profit (+) or loss(-) if you sell the Call at Rs 20?

Ans:

- a) Rs.-41,000
- b) Rs.-42,000
- c) Rs.-43,000
- d) None of these

3) You have sold Satyam Call strike price Rs. 250 at a premium of Rs.50. Lot size is 1,200. What is your profit (+) or loss(-) if you purchase the Call at Rs 23?

Ans:

- a) Rs 32,400
- b) Rs 33,400
- c) Rs 31,400
- d) None of these

4) You have sold Satyam Call strike price Rs. 240 at a premium of Rs.25. Lot size is 1,200. What is your profit (+) or loss(-) if you purchase the Call at Rs 30?

Ans:

- a) Rs -5,000
- b) Rs -7,000
- c) Rs -6,000
- d) None of these

5) You have bought Satyam Put strike price Rs. 260 at a premium of Rs.20. Lot size is 1,200. What is your profit (+) or loss(-) if you sell the Put at Rs 25?

Ans:

- a) Rs 7,000
- b) Rs 8,000
- c) Rs 5,000
- d) None of these

6) You have bought Satyam Put strike price Rs. 260 at a premium of Rs.45. Lot size is 1,200. What is your profit (+) or loss(-) if you sell the Put at Rs 18?

Ans:

- a) Rs -32,400
- b) Rs -31,400
- c) Rs -33,400
- d) None of these

7) You have sold Satyam Put strike price Rs. 220 at a premium of Rs.48 Lot size is 1,200. What is your profit (+) or loss(-) if you buy the Put at Rs 22?

Ans:

- a) Rs 32,200
- b) Rs 31,200
- c) Rs 30,200
- d) None of these

8) You have sold Satyam Put strike price Rs. 230 at a premium of Rs.23 Lot size is 1,200. What is your profit (+) or loss(-) if you buy the Put at Rs 25?

Ans:

- a) Rs -1,400
- b) Rs -3,400
- c) Rs -2,400
- d) None of these

9) You bought a Satyam Call at Rs 240 strike price for Rs 25 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 300 and the option expired worthless. What is your net profit (+) or loss (-)?

Ans:

- a) Rs 43,000
- b) Rs 41,000
- c) Rs 42,000
- d) None of these

10) You bought a Satyam Call at Rs 280 strike price for Rs 23 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 221 and the option expired worthless. What is your net profit (+) or loss (-)?

Ans:

- a) Rs -27,600
- b) Rs -26,600
- c) Rs -28,600
- d) None of these

11) You sold a Satyam Call at Rs 230 strike price for Rs 28 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 260. What is your net profit (+) or loss (-)?

Ans:

- a) Rs -1,400
- b) Rs -2,400
- c) Rs -3,400
- d) None of these

12) You sold a Satyam Call at Rs 280 strike price for Rs 28 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 220. What is your net profit (+) or loss (-)?

Ans:

- a) Rs 34,600
- b) Rs 33,600
- c) Rs 32,600
- d) None of these

13) You bought a Satyam Put at Rs 240 strike price for Rs 25 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 300. What is your net profit (+) or loss (-)?

Ans:

- a) Rs -30,000
- b) Rs -29,000
- c) Rs -31,000
- d) None of these

14) You bought a Satyam Put at Rs 280 strike price for Rs 27 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 221. What is your net profit (+) or loss (-)?

Ans:

- a) Rs 39,400
- b) Rs 38,400
- c) Rs 37,400
- d) None of these

15) You sold a Satyam Put at Rs 230 strike price for Rs 28 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 261. What is your net profit (+) or loss (-)?

Ans:

- a) Rs 34,600
- b) Rs 32,600
- c) Rs 33,600
- d) None of these

16) You sold a Satyam Put at Rs 280 strike price for Rs 28 each. The lot size is 1,200. On the expiry day, Satyam closed at Rs 221. What is your net profit (+) or loss (-)?

Ans:

- a) Rs -36,200
- b) Rs -37,200
- c) Rs -38,200
- d) None of these

17) Current Price of Reliance is Rs. 272. If Rs. 260 strike call is quoted at Rs. 45. What is the Intrinsic Value?

Ans:

- a) Rs.12
- b) Rs. 33
- c) Rs.45
- d) None of these

18) Current Price of Reliance is Rs. 272. If Rs. 260 strike call is quoted at Rs. 45. What is the Time Value?

Ans:

- a) Rs. 12
- b) Rs. 45
- c) Rs. 33
- d) None of these

19) Current Price of Reliance is Rs. 272. If Rs. 300 strike call is quoted at Rs. 7. What is the Intrinsic Value?

Ans:

- a) Rs. 21
- b) Rs. Nil
- c) Rs. 7
- d) None of these

20) Current Price of Reliance is Rs. 272. If Rs. 300 strike call is quoted at Rs. 7. What is the Time Value?

Ans:

- a) Rs. 7
- b) Rs. 21
- c) Rs. 28
- d) None of these

21) Current Price of Reliance is Rs. 248. If Rs. 260 strike put is quoted at Rs. 45. What is the Intrinsic Value?

Ans:

- a) Rs. 12
- b) Rs. 21
- c) Rs. 33
- d) None of these

22) Current Price of Reliance is Rs. 248. If Rs. 260 strike put is quoted at Rs. 45. What is the Time Value?

Ans:

- a) Rs. 12
- b) Rs. 33
- c) Rs. 57
- d) None of these

23) Current Price of Reliance is Rs. 248. If Rs. 220 strike put is quoted at Rs. 7. What is the Intrinsic Value?

Ans:

- a) Rs. 7
- b) Rs. 28
- c) Nil
- d) None of these

24) Current Price of Reliance is Rs. 248. If Rs. 220 strike put is quoted at Rs. 7. What is the Time Value?

Ans:

- a) Rs. 24
- b) Rs. 17
- c) Rs. 7
- d) None of these

25) If you buy a call option on a share with a strike price of Rs. 130, market price of Rs. 136, and a premium of Rs. 20, how much is the maximum that you may gain on expiry on this position?

Ans:

- a) Rs. 20
- b) unlimited
- c) Rs. 6
- d) None of these

26) If you sell a call option on a share with a strike price of Rs. 375, market price of Rs. 360, and a premium of Rs. 21, how much is the maximum gain that you may have on expiry of this position?

Ans:

- a) Rs. 21
- b) Rs. 20
- c) Rs. 6
- d) None of these

27) If you buy a put option on a share with a strike price of Rs. 260, market price of Rs. 245, and a premium of Rs. 24, how much is the maximum gain that you may have on expiry of this position?

Ans:

- a) Rs. 236
- b) Rs. 221
- c) Rs. 24
- d) None of these

28) If you sell a put option on a share with a strike price of Rs. 245, market price of Rs. 260, and a premium of Rs. 18, how much is the maximum gain that you may have on expiry of this position?

Ans:

- a) Rs. 263
- b) Rs. 18
- c) Rs. 242
- d) None of these

29) If you buy a call option on a share with a strike price of Rs. 230, market price of Rs. 236, and a premium of Rs. 21. What is the maximum loss on expiry of this position?

Ans:

- a) Rs. 21
- b) Rs. 215
- c) Rs. 251
- d) None of these

30) If you sell a call option on a share with a strike price of Rs. 375, market price of Rs. 360, and a premium of Rs. 21. What is the maximum loss on expiry of this position?

Ans:

- a) Rs. 354
- b) Unlimited
- c) Rs. 396
- d) None of these

31) If you buy a put option on a share with a strike price of Rs. 260, market price of Rs. 245, and a premium of Rs. 24. What is the maximum loss on expiry of this position?

Ans:

- a) Rs. 236
- b) Rs. 284
- c) Rs. 24
- d) None of these

32) If you sell a put option on a share with a strike price of Rs. 245, market price of Rs. 260, and a premium of Rs. 18. What is the maximum loss on expiry of this position?

Ans:

- a) Rs. 18
- b) Rs. 227
- c) Rs. 209
- d) None of these

CHAPTER 6

MARGINS – ARITHMETICAL PROBLEMS

1) What should be the minimum percentage of cash and cash equivalents in liquid assets deposited by clearing members with the Clearing Corporation?

Ans:

- a) Rs. 50
- b) Rs. 25
- c) Rs. 60
- d) Rs. 100

2) What are the eligible Liquid Assets, if a clearing member has deposited total assets of Rs. 200 Lakhs of which Rs. 50 Lakhs is in cash equivalents viz. Cash, bank guarantee, fixed deposits, T-bills and dated government securities?

Ans:

- a) Rs.200 lakhs
- b) Rs.100 lakhs
- c) Rs.50 lakhs
- d) None of these

3) What are the eligible Liquid Assets, if a clearing member has deposited total assets of Rs. 100 Lakhs of which Rs. 30 Lakhs is by way of acceptable equity securities after considering the applicable hair-cuts in valuation of equity securities?

Ans:

- a) Rs.100 lakhs
- b) Rs.60 lakhs
- c) Rs.70 lakhs
- d) None of these

4) A clearing member has deposited eligible liquid assets of Rs. 55 Lakhs. What is his Liquid Net Worth if the Initial Margin applicable on his position is Rs. 20,000 ?

Ans:

- a) Rs.54.80 lakhs
- b) Rs.54.89 lakhs
- c) Rs.54.98 lakhs
- d) None of these

5) A clearing member has deposited eligible liquid assets of Rs. 54 Lakhs. The exchange has minimum liquid net worth requirement of Rs. 50

Lakhs . He has not entered into any transactions so far. What is the margin available for trading?

Ans:

- a) Rs.50 lakhs
- b) Rs.4.00 lakhs
- c) Rs.54.00 lakhs
- d) None of these

6) A clearing member has deposited eligible liquid assets of Rs. 55 Lakhs. The exchange has minimum liquid net worth requirement of Rs. 50 Lakhs and initial margin rate of 6% (computed based on Price Scan Range). He has bought 2 futures contracts each of Rs 1,50,000. What is the further maximum exposure (in Rs Lakhs) the Member can take in Sensex futures?

Ans:

- a) 80.33
- b) 83.33
- c) 77.33
- d) None of these

7) A clearing member has deposited eligible liquid assets of Rs. 51 Lakhs. The exchange has minimum liquid net worth requirement of Rs. 50 Lakhs and initial margin rate of 6% (computed based on Price Scan Range). He has not transacted so far. What is the maximum exposure (in Rs. Lakhs) the Member can take in futures market?

Ans:

- a) 13.67
- b) 16.67
- c) 19.67
- d) None of these

8) A member has deposited liquid assets worth INR 55 Lakhs, minimum liquid net worth requirement is INR 50 Lakhs. If the member has open position of 9 contracts in a Sensex Future series at current mark to market price of 3550, what will be the initial margin still available for further utilisation (in INR), if the rate of initial margin is 6% (computed based on Price Scan Range)?

Ans:

- a) 4,24,150
- b) 4,14,150
- c) 4,04,150
- d) None of these

9) An investor wants to purchase 10 contracts at 4,550. Initial margin is 6% (computed based on Price Scan Range). How much will be the initial margin to be paid?

Ans:

- a) Rs.2,730
- b) Rs.27,300
- c) Rs. 1,36,500
- d) None of these

10) An investor wants to sell 11 contracts at 4,550. Initial margin is 6% (computed based on Price Scan Range). How much will be the initial margin to be paid?

Ans:

- a) Rs.30,030
- b) Rs.1,50,150
- c) Rs.3,003
- d) None of these

11) An investor wants to buy 7 contracts of August series and 4 contracts of September series at 4,500 and 4,550 respectively. The Initial Margin is fixed at 6% (computed based on Price Scan Range) by the Clearing Corporation. How much Initial Margin is required to be brought in by the investor?

Ans:

- a) Rs.94,500
- b) Rs.54,600
- c) Rs.1,49,100
- d) None of these

12) An investor has an open long position of 8 contracts in August series. The Initial Margin was 6% (computed based on Price Scan Range) till yesterday, but has been revised to 7% today. The closing price both yesterday and today is 4,500. How much additional Initial Margin will the investor be required to bring in?

Ans:

- a) Rs.1,08,000
- b) Rs.18,000
- c) Rs.1,26,000
- d) None of these

13) A member and his client have open position of 26 and 81 contracts in Sensex Futures January Series. If the rate of initial margin is 6% (computed based on Price Scan Range) and the price of the January Series is 3,500, what is the initial margin requirement for the member?

Ans:

- a) Rs.11,23,500
- b) Rs.1,87,25,000
- c) Rs.22,470
- d) None of these

14) An investor had a long open position of 8 contracts a Sensex Futures February series that was marked to market at previous day's closing price at Rs 16,00,000. Today, the closing price of the series is 4,050. How much mark to market margin will the investor have to pay or receive?

Ans:

- a) Rs.20,000
- b) Rs. 1,60,000
- c) Rs. 3,200
- d) None of these

15) A broker has two clients C1 and C2. Client C1 had open position of 112 contracts long and client C2 had open position of 62 contracts long in a sensex futures series which were marked to market at previous day's closing at rupees Rs 2,24,00,000 and Rs 1,24,00,000 respectively. Today the closing price is 4,050. What is the mark to market margin (in rupees) for the member-broker?

Ans:

- a) 2,80,000
- b) 4,35,000
- c) 8,700
- d) None of these

16) An investor has open position of 12 contract long and 22 contract short in sensex future March and April series respectively. The rate of initial margin is 6% (computed based on Price Scan Range) and prices of March and April series are 3,700 and 3,730 respectively. Take initial margin for one month spread contract as 1%. It is beginning of the March series, what is her initial margin obligation (in rupees) towards the clearing corporation?

Ans:

- a) 22,380
- b) 1,11,900
- c) 1,34,280
- d) None of these

17) A member has two clients C1 and C2. C1 has purchased and sold 250 and 350 contracts respectively and C2 has purchased and sold 550 and 350 contracts respectively in a Sensex Future series. What is the outstanding liability (open position) of the member?

Ans:

- a) 300
- b) 250
- c) 350
- d) None of these

ANSWERS

CHAPTER 1 INTRODUCTION, FUTURES, FOR- WARDS

- 1) An agreement to buy a refrigerator today at the posted price.
- 2) Determined by demand and supply
- 3) on few selected stocks only
- 4) He expects the market to fall.
- 5) He should buy Rice Futures
- 6) Algorithm used to calculate closing Sensex value
- 7) depends on the value of an underlying asset
- 8) None of the above
- 9) True
- 10) BSE 30 Sensex
- 11) Hedging
- 12) You can take a higher position with smaller investments using derivatives
- 13) Both the buyer and the seller pay initial margin to the exchange
- 14) False
- 15) can be structured as required by the buyer and seller
- 16) True
- 17) True
- 18) by the exchange
- 19) False
- 20) False
- 21) False
- 22) False
- 23) True
- 24) False
- 25) the long position becomes profitable
- 26) buy the index future
- 27) Sell the Index futures
- 28) the minimum permitted price movement in a futures contract
- 29) True
- 30) True
- 31) True
- 32) True
- 33) True
- 34) False
- 35) False
- 36) Futures prices go down.
- 37) A derivative instrument
- 38) Buy near month and sell far month
- 39) Creating a hedge
- 40) market risk
- 41) Value of your portfolio * Beta of your portfolio
- 42) True
- 43) False
- 44) credit exposure in the event of default and the probability of a counter party's default.
- 45) All of the above
- 46) sale of large number of shares which depress price significantly.

- 47) inadequate contingency planning.
- 48) A contract cannot be enforced
- 49) exposure limits.
- 50) cross deal
- 51) either 12 months from the stamped date or till next book closure following stamped date whichever is later.
- 52) auction
- 53) New York Stock Exchange
- 54) closed-out
- 55) selling the same scrip and same quantity.
- 56) All of the above
- 57) The trader bought a futures contract
- 58) False
- 59) Last Thursday of the month
- 60) stock-index
- 61) T Notes
- 62) Hedger avoids risk while the speculator takes risk
- 63) They are decided at the time of entering into the contract.
- 64) The party to the contract may not honour its part of obligation and default.
- 65) Systematic Risk

CHAPTER 2

OPTIONS

- 1) An American option can be exercised on or before the expiration date
- 2) derivative instrument
- 3) Positive
- 4) change in the premium with respect to the change in the price of underlying
- 5) Options
- 6) Gamma
- 7) can be exercised only at maturity
- 8) to buy the underlying asset
- 9) is a contract tailored to suit individual requirements
- 10) A call option when the price of the underlying share increases above the option's strike price by an amount greater than the premium paid for the option
- 11) True
- 12) European options can be exercised only on the expiration date
- 13) False
- 14) protective put strategy
- 15) buying one call and selling another call
- 16) True
- 17) True
- 18) False
- 19) False
- 20) buy an option on the particular stock
- 21) Any person whether he owns underlying stock or not

- | | |
|--|--|
| 22) seller owns the stock he is supposed to deliver | 46) True |
| 23) False | 47) the writer owns the underlying asset |
| 24) not to exercise the option. | 48) True |
| 25) Liquidity to the market. | 49) do not have to pay mark-to-market margins |
| 26) False | 50) True |
| 27) False | 51) asymmetric |
| 28) True | 52) False |
| 29) True | 53) Price of the underlying |
| 30) bearish - payer of premium | 54) True |
| 31) A spread trading strategy involves taking a position in two or more options of the same type. | 55) True |
| 32) True | 56) Increase |
| 33) ACC | 57) Futures contract |
| 34) March | 58) all options of a given class with same expiration date & strike price. |
| 35) increases | 59) to buy. |
| 36) bull spread | 60) Exchange |
| 37) decrease in the price of underlying asset | 61) False |
| 38) True | 62) None of the above. |
| 39) True | 63) arbitrage |
| 40) True | 64) False |
| 41) True | 65) Weekly Volatility x Sqrt of 52 |
| 42) False | |
| 43) contracts that can be settled in cash or settled by delivery depending on the terms of the contract as decided by the exchange | |
| 44) False | |
| 45) are necessarily the same | |

CHAPTER 3

MARGINS AND REGULATIONS

- 1) Marking to the market.
- 2) None of the above
- 3) True
- 4) daily basis
- 5) Only members who are registered with the Derivatives Segment as Clearing Members
- 6) Rs. 2 lakh
- 7) 5 years
- 8) the Clearing Corporation / house
- 9) the risk disclosure document
- 10) True
- 11) True
- 12) He would be able to only close his own contracts.
- 13) volatility estimates on line
- 14) during banking hours next day.
- 15) should be known to all market participants
- 16) is calculated on the daily closing price of index futures
- 17) minimises operation risk at the level of firm.
- 18) to protect the clearing house from a one day adverse price movement on an open position.
- 19) The Stock Exchange
- 20) not exceeding two and half percent of value mentioned in the sale or purchase note
- 21) gross basis
- 22) 50
- 23) True
- 24) False
- 25) True
- 26) True
- 27) both the buyer and seller
- 28) Exponential weighted moving average method.
- 29) True
- 30) True
- 31) False
- 32) True
- 33) share index as a security
- 34) True
- 35) True
- 36) True
- 37) True
- 38) True
- 39) True
- 40) True
- 41) False
- 42) False
- 43) False
- 44) False
- 45) False
- 46) True
- 47) Liquid Assets maintained with the Clearing Corporation/House less Initial Margin applicable

- 48) True
- 49) Mr A can enjoy higher exposure levels in futures than Mr B.
- 50) False
- 51) True
- 52) False
- 53) None of the above is necessarily correct.
- 54) None of the above.
- 55) No
- 56) False
- 57) False
- 58) May or may not be a member on the cash segment of the stock exchange.
- 59) Grossed up at 25 contracts
- 60) historical volatility

CHAPTER 4

FUTURES – ARITHMETICAL PROBLEMS

1) 7500

Logic:

Purchase Price Rs. 2

Sale Price Rs. 17

Number of contracts 10

Lot Size 50

Profit = $(17 - 2) \times 10 \times 50 = 7500$

2) Rs.7500

Profit = $[(3717 - 3700) - (3660 - 3662)] \times 10 \times 50 = \text{Rs.7500}$

3) 0

4) 0

5) 10

6) Buying 1 June Sensex futures contract at 2800.

7) Rs.1,50,000

Sensex Price : Rs. 3,000

Lot Size : 50

Value = $3,000 \times 50 = \text{Rs.1,50,000}$

8) gain 20,000

Purchase Price : Rs. 3,200

Sales Price : Rs. 3,600

Profit per unit : Rs. 400

Lot Size : 50

Profit = $(3,600 - 3,200) \times 50 = 20,000$

9) A loss of Rs. 5000

Purchase Price : Rs. 3,100

Sale Price : Rs. 3,000

Loss per unit : Rs. 100

Lot Size : 50

Loss = $(3,100 - 3,000) \times 50 = 5,000$

10) You expect the price of the share to move up by 25%

11) 10,00,000

Shares Owned : 10,000

Share price : Rs. 100

Beta : 1

Value of Index Future : 10,00,000

12) Futures price is Cash Price plus Interest
i.e. $750 + 6\% \text{ interest for 6 months approximately} = 795$

13) 1st trading day after last Thursday in October

14) Rs 5.00

Tick Size : 0.1

Index Multiple : 50

Tick Value = $50 \times 0.1 = 5$

15) Futures Price = Spot + Interest – Dividends
i.e. $3,000 + 12\% \text{ (for 3 months)} - 2\% \text{ (for 3 months)} = 3,000 + 90 - 15 = 3,075$

16) Sell 10 Jan sensex contracts

17) Value of Futures contracts required for a perfect hedge
 $= 30,00,000 \times 1.2 = 36,00,000$
 Value of One Futures contract $= 4,200 \times 50 = 2,10,000$
 No of contracts to be sold $= 36,00,000 / 2,10,000 = 17$

18) 2400

Purchase Price : Rs. 268
 Sales price : Rs. 270
 Profit per unit : Rs. 2
 Lot size : 1,200
 Profit $= (270 - 268) \times 1,200 = \text{Rs. } 2,400$

19) 33600

Purchase Price : Rs. 278
 Sales price : Rs. 250
 Profit per unit : Rs. 28
 Lot size : 1,200
 Profit $= (278 - 250) \times 1,200 = \text{Rs. } 33,600$

20) -31200

Purchase Price : Rs. 274
 Sales price : Rs. 248
 Loss per unit : Rs. 26
 Lot size : 1,200
 Loss $= (274 - 248) \times 1,200 = \text{Rs. } 31,200$

21) -51600

Purchase Price : Rs. 268
 Sales price : Rs. 225
 Loss per unit : Rs. 43
 Lot size : 1,200
 Loss $= (268 - 225) \times 1,200 = \text{Rs. } 51,600$

CHAPTER 5

OPTIONS – ARITHMETICAL PROBLEMS

1) Rs. 18,000

Purchase Price : Rs. 25
 Sales price : Rs. 40
 Profit per unit : Rs. 15
 Lot size : 1,200
 Profit $= (40 - 25) \times 1,200 = \text{Rs. } 18,000$

2) Rs. -42,000

Purchase Price : Rs. 55
 Sales price : Rs. 20
 Loss per unit : Rs. 35
 Lot size : 1,200
 Loss $= (20 - 55) \times 1,200 = \text{Rs. } 42,000$

3) Rs. 32,400

Purchase Price : Rs. 50
 Sales price : Rs. 23
 Profit per unit : Rs. 27
 Lot size : 1,200
 Profit $= (23 - 50) \times 1,200 = \text{Rs. } 32,400$

4) Rs. -6,000

Purchase Price : Rs. 30
 Sales price : Rs. 25
 Loss per unit : Rs. 5
 Lot size : 1,200
 Loss $= (30 - 25) \times 1,200 = \text{Rs. } 6,000$

5) None of these

Purchase Price : Rs. 20
 Sales price : Rs. 25
 Profit per unit : Rs. 5
 Lot size : 1,200
 Profit $= (25 - 20) \times 1,200 = \text{Rs. } 6,000$

6) Rs. -32,400

Purchase Price : Rs. 45
 Sales price : Rs. 18
 Loss per unit : Rs. 27
 Lot size : 1,200
 Loss $= (18 - 45) \times 1,200 = \text{Rs. } 32,400$

7) Rs. 31,200

Purchase Price : Rs. 22
 Sales price : Rs. 48
 Profit per unit : Rs. 26
 Lot size : 1,200
 Profit $= (48 - 22) \times 1,200 = \text{Rs. } 31,200$

8) Rs. -2,400

Purchase Price : Rs. 25
 Sales price : Rs. 23
 Loss per unit : Rs. 2
 Lot size : 1,200
 Loss $= (23 - 25) \times 1,200 = \text{Rs. } 2,400$

9)Rs.42,000

Strike Price of Call : Rs.240
Premium Paid : Rs. 25
Closing Price : Rs. 300
Profit Per Unit : 35
Lot Size : 1,200
Profit = $[300 - (240 + 25)] \times 1,200 = \text{Rs.}42,000$

10) Rs.-27,600

Strike Price of Call : Rs.280
Premium paid : Rs. 23
Closing Price : Rs. 221
Loss Per Unit : Rs. 23
Lot Size : 1,200
Loss = $23 \times 1,200 = \text{Rs.}27,600$

11)Rs.-2400

Strike Price of Call : Rs.230
Premium Received : Rs.28
Closing Price : Rs.260
Loss Per Unit : $260 - (230 + 28) = 2$
Lot Size : 1,200
Loss = $2 \times 1200 = \text{Rs.} 2,400$

12) Rs.33600

Strike Price of Call : Rs.280
Premium Received : Rs.28
Closing Price : Rs.220
Profit Per Unit : 28
Lot Size : 1,200
Profit = $28 \times 1200 = \text{Rs.} 33,600$

13) Rs.-30,000

Strike Price of Put : Rs.240
Premium Paid : Rs.25
Closing Price : Rs.300
Loss Per Unit : Rs.25
Lot Size : 1,200
Loss = $25 \times 1,200 = \text{Rs.}30,000$

14) Rs.38,400

Strike Price of Put : Rs.280
Premium Paid : Rs.27
Closing Price : Rs.221
Profit Per Unit : Rs.32
Lot Size : 1,200
Profit = $[280 - (221 + 27)] \times 1,200 = \text{Rs.}38,400$

15) The entire premium collected ($1,200 \times 28$) i.e. Rs 33,600 is Income. Reliance has closed above the strike price and hence the Put Option has expired worthless.

16) You sold a Reliance Put at Rs 280 strike price for Rs 28 each. The lot size is 1,200. On the expiry day, Reliance closed at Rs 221. Your option was automatically exercised. What is your net profit (+) or loss (-)?

Ans:

- a) -36200
- b) -37200
- c) -38200
- d) None of these

Strike Price of Put : Rs.280
Closing Price : Rs.221
Loss on Exercise : Rs 59
Premium Earned : Rs 28
Net Loss per Unit : Rs 31
Lot Size : 1,200
Loss = : Rs 37,200

17) Rs. 12

18) Rs. 33

19) Nil

20) Rs. 7

21) Rs. 12

22) Rs. 33

23) Nil

24) Rs. 7

25) unlimited

26) Rs. 21

27) Rs. 236

28) Rs. 18

29) Rs. 21

30) Unlimited

31) Rs. 24

32) Rs. 227

CHAPTER 6

MARGINS – ARITHMETICAL PROBLEMS

1) 50%

2) Cash and Cash Equivalents should be minimum 50% of Liquid Assets. These are Rs 50 lakhs. Hence Liquid Assets will be Rs 100 lakhs.

3) Equity Securities are allowed upto a maximum of 50% of eligible Liquid Assets. These are only Rs 30 lakhs here, which implies that Cash and Cash Equivalents are Rs 70 lakhs. Hence, the entire Rs 100 lakhs are eligible.

4) Liquid Net Worth = Liquid Assets minus Initial Margin

i.e., $55 - 0.20 = \text{Rs.}54.80$ lakhs

5) $54 - 50 = \text{Rs.}4.00$ lakhs

6) Margin available = $55 - 50 = \text{Rs } 5$ lakhs. Margin rate is 6%. Accordingly total exposure of $5,00,000/6\% = 83.33$ lakhs is available. Exposure currently is Rs 3 lakhs. Balance exposure possible is Rs 80.33 lakhs.

7) Margin available = $51 - 50 = \text{Rs } 1$ lakh. Margin rate is 6%. Accordingly total exposure of $1,00,000/6\% = \text{Rs } 16.67$ lakhs is available.

8) Total Margin available = Rs 5 lakhs. Margin applicable on Open Positions = $3,550 \times 50 \times 9 \times 6\% = \text{Rs } 95,850$.

Balance Margin available = Rs 4,04,150

9) $4,550 \times 10 \times 50 \times 6\% = \text{Rs.}1,36,500$

10) $4,550 \times 11 \times 50 \times 6\% = \text{Rs.}1,50,150$

11) $4,500 \times 7 \times 50 \times 6\% = \text{Rs.}94,500$

$4,550 \times 4 \times 50 \times 6\% = \text{Rs.}54,600$

Total = Rs.1,49,100

12) Rs.18,000 (1% of $4,500 \times 8 \times 50$)

13) Rs.11,23,500 ($26 + 81 = 107$ contracts at 6% on 3,500 at lot size of 50)

14) Rs.20000 (yesterday's closing price must have been 4,000 i.e. $16,00,000/8 = 2,00,000/50 = 4,000$ – today's price is 4,050 – hence difference of 50 on 8 contracts of 50 units each)

15) The mark to market price yesterday must have been 4,000. (You can check by dividing Rs 2,24,00,000 by 112 and by 50). Hence there is a profit of Rs 50 per Sensex Unit. Mark to Market Margin will be:

Client C1 : $50 \times 112 \times 50 = 2,80,000$

Client C2 : $50 \times 62 \times 50 = 1,55,000$

Total : Rs.4,35,000

16) 12 contracts will be covered under Calendar Spread. This will attract margin at 1% on April price. The balance 10 contracts will attract margin at 6% on April price.

Spread : $12 \times 50 \times 3,730 \times 1\% = 22,380$

Open : $10 \times 50 \times 3,730 \times 6\% = 1,11,900$

Total : Rs.1,34,280

17)

Client C1 : Net 100

Client C2 : Net 200

Total : Net 30