

## Chapter 1 Understanding Neat System

### Learning Objectives:

After reading this chapter, you should be able:

1. To identify the various market types under the capital market segment.
2. To understand the working of the IT system at NSE.
3. To understand the corporate hierarchy so as to analyse the responsibilities and powers at all levels.
4. To apply the acquired knowledge in real life trading system.

### Your guide engine to learning:

- 1.1 Introduction
- 1.2 Trading network of NSE
- 1.3 NEAT System
- 1.4 Corporate hierarchy
- 1.5 Logging on to the neat system
  - 1.5.1 User ID
  - 1.5.2 Trading Member ID
  - 1.5.3 Password
  - 1.5.4 New Password
- 1.6 How to login
- 1.7 Exit from the system

### 1.1 Introduction

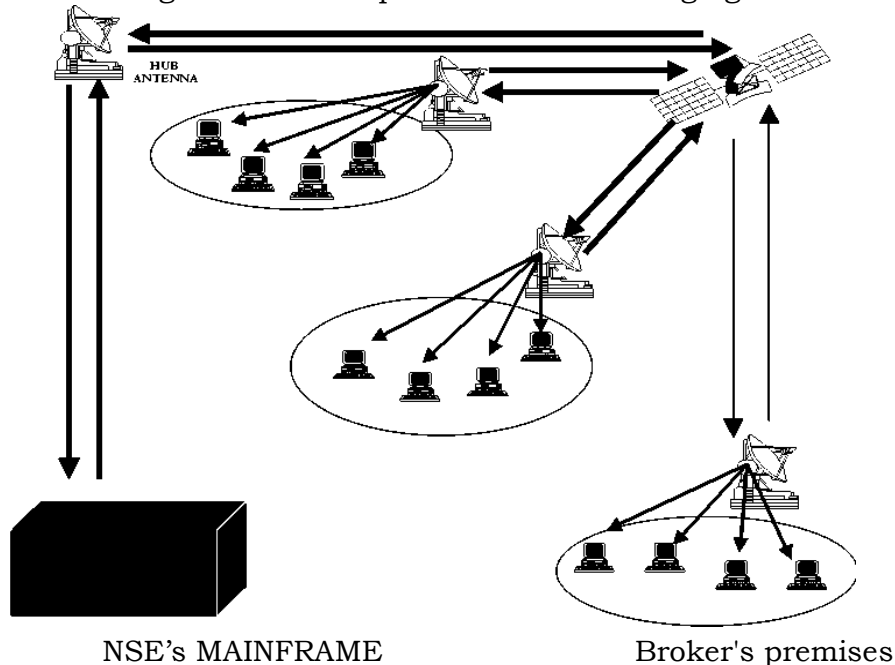
The trading on stock exchanges in India used to take place through open outcry without use of information technology for immediate matching or recording of trades. This was time consuming and inefficient. This imposed limits on trading volumes and efficiency. In order to provide efficiency, liquidity and transparency, NSE introduced a nation-wide on-line fully-automated **SCREEN BASED TRADING SYSTEM (SBTS)** where a member can punch into the computer quantities of securities and the prices at which he likes to transact and the transaction is executed as soon as it finds a matching sale or buy order from a counter party. SBTS electronically matches orders on a strict price/time priority and hence cuts down on time, cost and risk of error, resulting in improved operational efficiency. It allows faster incorporation of price sensitive information into prevailing prices, thus increasing the informational efficiency of markets. It enables market participants, irrespective of their geographical locations, to trade with one another simultaneously, improving the depth and liquidity of the market. It provides full anonymity by accepting orders, big or small, from members without revealing their identity. It also provides a perfect audit trail, which helps to resolve disputes by logging in the trade execution process in entirety. In the very first year of its operation, NSE became the leading stock exchange in the country.

Today India can boast that almost 100% trading takes place through electronic order matching. Technology was used to carry the trading platform from the trading hall of stock exchanges to the premises of brokers and to the PC's at the residence of Investors through the Internet.

This made a huge difference in terms of equal access to investors, in a geographically vast country like India.

### 1.2 Trading Network of NSE

The trading network is depicted in the following figure.



NSE has main computer which is connected through Very Small Aperture Terminal (VSAT) installed at its office. The main computer runs on a fault tolerant mainframe computer at the Exchange. Brokers have terminals (identified as the PCs in the Figure 1) installed at their premises which are connected through VSATs/leased lines/modems.

An investor informs a broker to place an order on his behalf. The broker enters the order through his PC, which runs under Windows NT and sends signal to the Satellite via VSAT/leased line/modem. The signal is directed to mainframe computer at NSE via VSAT at NSE's office. A message relating to the order activity is broadcast to the respective member. The order confirmation message is immediately displayed on the PC of the broker. This order matches with the existing passive order(s), otherwise it waits for the active orders to enter the system. On order matching, a message is broadcast to the respective member.

The trading system operates on a strict price time priority. All orders received on the system are sorted, with the best priced order getting the first priority for matching i.e., the best buy orders match with the best sell order. Similar priced

orders are sorted on time priority basis, i.e. the one that came in earlier gets priority over the later order. Orders are matched automatically by the computer keeping the system, transparent and fair. Where an order does not find a match, it remains in the system for the day till a fresh order comes in or the earlier order is cancelled or modified.

The NSE trading system (NEAT) generates and maintains an audit trail of the orders entered in the system by assigning a unique order number to all the orders placed on the NEAT system.

The system is normally made available for trading on all days except Saturdays, Sundays and other holidays. Holidays are declared by the Exchange from time to time.

### 1.3 NEAT System

The NEAT system has **four types** of market. They are:

#### 1. Normal Market

All orders which are of regular lot size or multiples thereof are traded in the Normal Market. For shares that are traded in the compulsory dematerialised mode the market lot of these shares is one. Normal market consists of various book types wherein orders are segregated as Regular lot orders, Special Term orders, Negotiated Trade Orders and Stop Loss orders depending on their order attributes.

#### 2. Odd Lot Market

All orders whose order size is less than the regular lot size are traded in the odd-lot market. An order is called an odd lot order if the order size is less than regular lot size. These orders do not have any special terms attributes attached to them. In an odd-lot market, both the price and quantity of both the orders (buy and sell) should exactly match for the trade to take place. Currently the odd lot market facility is used for the Limited Physical Market as per the SEBI directives.

#### 3. Auction Market

In the Auction Market, auctions are initiated by the Exchange on behalf of trading members for settlement related reasons. There are 3 participants in this market.

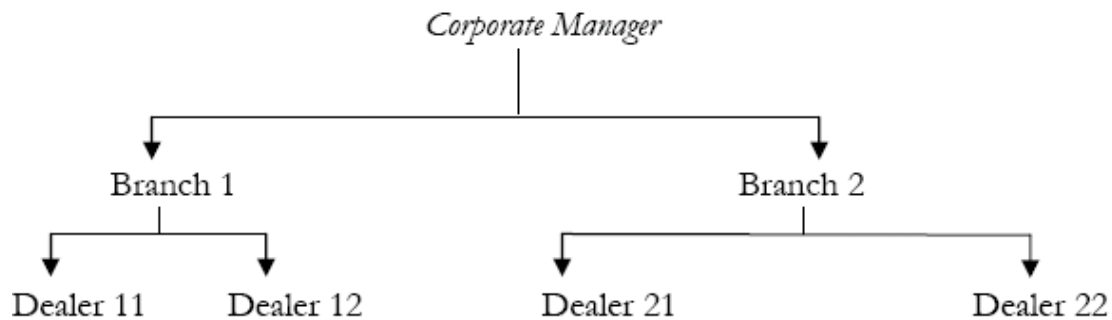
- (i) Initiator - the party who initiates the auction process is called an initiator
- (ii) Competitor - the party who enters orders on the same side as of the initiator
- (iii) Solicitor - the party who enters orders on the opposite side as of the initiator

#### 4. RETDEBT Market

The RETDEBT market facility on the NEAT system of capital market segment is used for transactions in Retail Debt Market session. Trading in Retail Detail Market takes place in the same manner as in equities (capital market) segment. The main features of this market are detailed in a separate section (1.15) on RETDEBT market.

### 1.4 Corporate hierarchy

The trading member has the facility of defining a hierarchy amongst its users of the NEAT system. This hierarchy comprises:



The users of the trading system can logon as either of the user type. The significance of each type is explained below:

**Corporate Manager:** - The corporate manager is a term assigned to a user placed at the highest level in a trading firm. Such a user receives **at** the End of the Day Reports for all branches of the trading member. The facility to set Branch Order Value Limits and User Order Value Limits is available to the corporate manager.

**Branch Manager:** - The branch manager is a term assigned to a user who is placed under the corporate manager. The branch manager receives **at** End of the Day reports for all the dealers under that branch. The branch manager can set user order value limit for each of his branch.

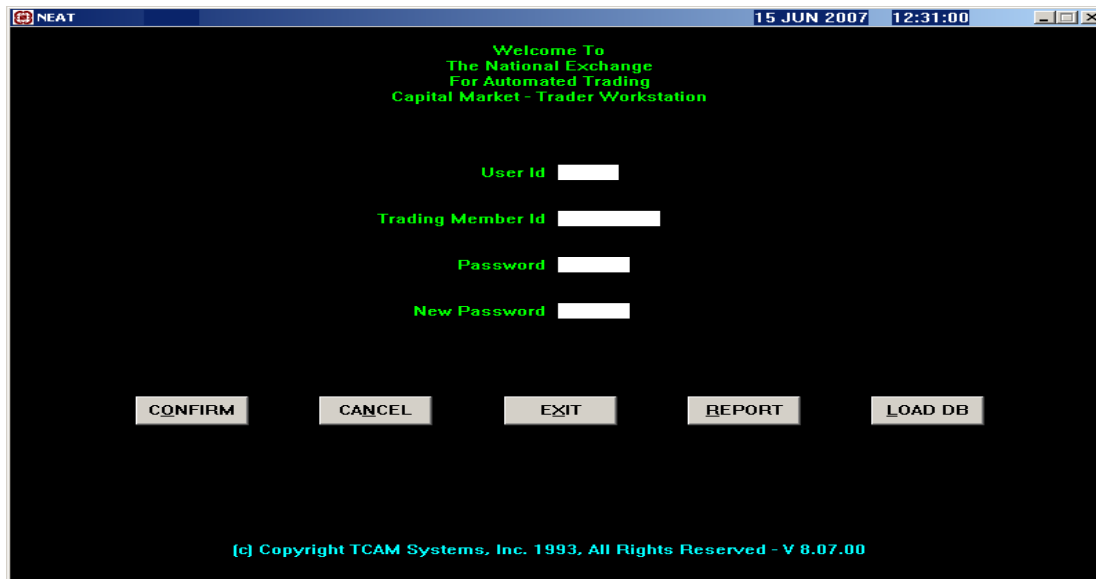
**Dealer:** - Dealers are users at the lower most level of the hierarchy. A dealer can view and perform order and trade related activities only for himself and does not have access to information about other dealers under the same branch or other branches.

### 1.5 Logging on to the neat system

On starting NEAT application, the **login screen** appears with the following details:

- User ID
- Trading Member ID
- Password
- New Password

In order to sign in to the system, the User must specify a valid User ID, Trading Member ID and the corresponding password. A valid combination of User ID, Trading Member ID and the password is needed to access the system. Press [Tab] key to move to the next field. [Shift+Tab] keys can be used to move to the previous field(s). After entering IDs and password, press the [Enter] key to complete the logon procedure.



NEAT 15 JUN 2007 12:31:00

Welcome To  
The National Exchange  
For Automated Trading  
Capital Market - Trader Workstation

User Id

Trading Member Id

Password

New Password

CONFIRM CANCEL EXIT REPORT LOAD DB

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### 1.5.1

#### User ID:

Each Trading Member can have more than one User. The number of Users allowed for each Trading Member is notified by the Exchange from time to time. Each User of a Trading Member must be registered with the Exchange and is assigned a unique User ID. To get a user ID, the users need to have the NSE's certification (NCFM) in the desired module. The User ID is provided by National Stock Exchange (NSE) through its member, after passing the NSE's certification exam. User IDs are issued to only registered NSE trading members.

### 1.5.2 Trading Member ID:

Any individual who is a registered member of the exchange, participating in trading himself or on the behalf of its clients, is a trading member. The Exchange assigns a Trading Member ID to each Trading Member. The Trading Member ID is unique and functions as a reference for all orders/trades of different Users. This ID is common for all the Users of a particular Trading Member. The Trading Member ID and User ID form a unique and valid combination.

### 1.5.3 Password:

When a User logs-in for the first time, he has to enter the default password 'NEATCM' provided by the Exchange. On entering this password, the system requests the User to enter a new password in the 'New Password' field. On entering the 'new password', the system requests for a confirmation of this 'new password'. This new password is known to the User only.

If three attempts are made by a User to log on, with an incorrect password, then that User is automatically disabled. In case of such an event, the Trading Member makes a written request to the Exchange for resetting of password.

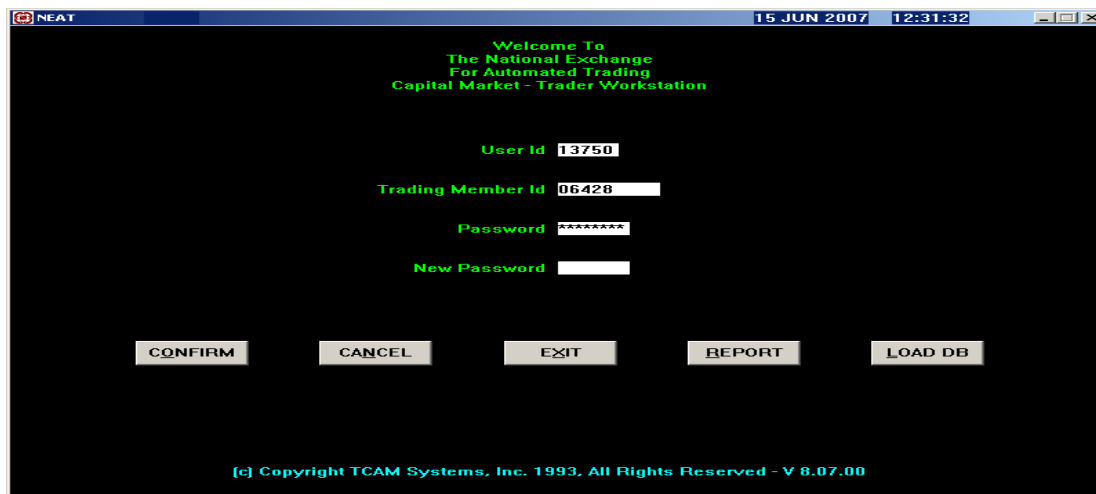
### 1.5.4 New Password:

The password can be changed if the User desires so and a new password can be entered. The new password must be different from the old password. Password appears in the encrypted form and thus complete secrecy is maintained. It is used to change the old password by the users, for their own security.

- **Confirm** : To confirm the above details, press enter.
- **Cancel** : To cancel the operation, press cancel.
- **Exit** : To exit from the logon screen, press exit.

### 1.6 How to login

In the following example, the User ID is '13750', Trading Member ID is '06428' and the password (password must be 6 to 8 character and it may be alpha or numeric) is typed. Whenever a new password is typed a message window appears showing the message that your password will expire within 15 days. On or before the expiry of the period, the user has to submit a new password. It is advisable that a user should change his password at least once or twice a week to ensure security.

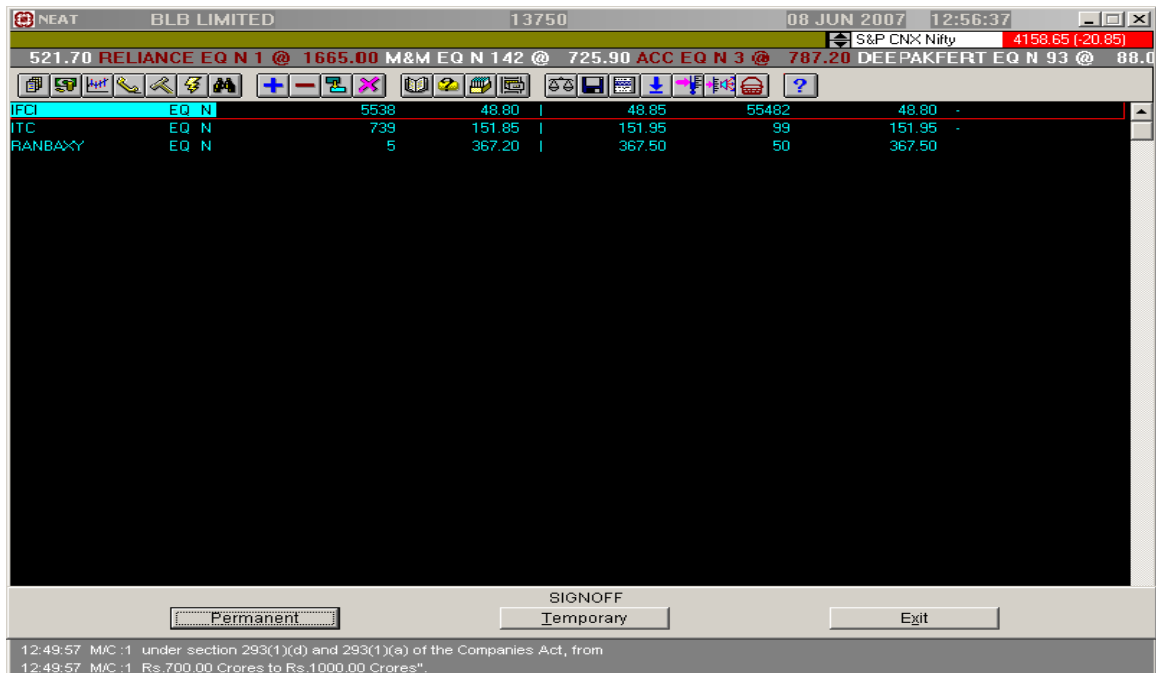


### 1.7 Exit from the system (Alt + F4):

At the Log on, Screen one can exit from the application on pressing [Alt+F4] keys

## Understanding Neat System

Within the Application, press [Alt+F4] keys to generate the log off screen. The log off screen displays the following options:



- **Permanent Sign Off:** As the name suggests, a User can log off permanently from the trading system by selecting this option. The User is logged off and the logon screen appears.
- **Temporary Sign Off:** Temporary sign off is a useful feature which allows the User to disallow the use of the trading software without actually logging off. During a temporary sign-off period, the application continues to receive all market updates. However, the User cannot enter orders or make inquiries at this point of time. Apart from this it allows the User to leave the trading system temporarily inactive and prevent unauthorized access for the system.
- On selecting the temporary sign-off option, a password entry screen is displayed. The use of the NEAT system is activated on entering the correct password.
- The temporary sign-off is automatically activated when the User is inactive for a more than a period of 5 minutes. The User has to enter the password to resume activities. If three attempts are made to sign in with an incorrect password, the User is permanently logged off. In this case the User has to login again.

**Exit:** On selection of this option, the User comes out of Sign off screen.

## Summary/Recapitulation

## Understanding Neat System

- Open outcry system has been replaced by screen based trading system, thus making the market more efficient, liquid and transparent.
- All the trading terminals are interconnected to each other through VSATs/ leased lines / modems.
- When a client wants to trade, he places an order with a trader who in turn enters the order through his PC, which runs under Windows NT.
- The capital market segment has four types of market: Normal market, Odd- lot market, RETDEBT market, Auction market.
- Under the corporate hierarchy, the highest position is taken by the corporate manager, then the branch manager and finally the dealers at the lowest level.
- The market time is divided into various phases: Opening, Open phase, market close, Surcon.
- The details that appear on the log on screen are: User ID, Trading member ID, Password and New password.
- For logging off, there are various options available. They are: Permanent sign off, Temporary sign off and Exit.

### Let's revise - New Terms

- 
- |                                |                     |
|--------------------------------|---------------------|
| • Screen Based Trading System  | • Trading member ID |
| • Very Small Aperture Terminal | • NEAT              |
| • Leased lines                 | • RETDEBT market    |
| • Normal market                | • Auction market    |
| • Odd lot market               | • Surcon            |
- 

### Multiple Choice Questions – Time your efforts

- Q1** In order to provide efficiency, liquidity & transparency, NSE introduced a nation-wide on-line fully automated \_\_\_\_\_.  
a) Screen based trading system.  
b) State based ticketing system.  
c) Small based ticketing system.  
d) Screen based fast system.
- Q2** Neat system supports an order driven market, wherein orders match on the basis of \_\_\_\_\_ & \_\_\_\_\_ priority.  
a) Size, bid.  
b) Time, price.  
c) Quality, quantity.  
d) Bid, lot size.
- Q3** The odd lot market facility is used for \_\_\_\_\_.  
a) Normal market.  
b) Retdebt market.  
c) Odd lot market.



- d) Auction market.
- Q4** In the auction market, auctions are initiated by the \_\_\_\_\_ on behalf of \_\_\_\_\_ for settlement related reasons.
- a) NSDL, brokers.
  - b) SEBI, sub-broker.
  - c) Exchange, trading members.
  - d) CRISIL, client.
- Q5** The branch manager receives end of day reports for all the \_\_\_\_\_ under that branch.
- a) Dealers.
  - b) Corporate manager.
  - c) Clients.
  - d) NCFM certificate holders.
- Q6** The corporate manager is a term assigned to a user placed at the \_\_\_\_\_.
- a) Lowest level.
  - b) Highest level.
  - c) Middle level.
  - d) Junior level.
- Q7** After login to the NEAT system & before the market opens for trading; a trading member can set up \_\_\_\_\_ & \_\_\_\_\_.
- a) Market watch, viewing inquiry screen.
  - b) Security descriptor. Market by price.
  - c) Previous trades, outstanding orders.
  - d) Activity log, order status.
- Q8** Which of the following statement (s) are true?
- i) During the open phase order entry is allowed.
  - ii) During this phase, orders are matched on a continuous basis.
  - iii) Trading in all the instruments is allowed unless they are specifically prohibited by the exchange.
  - iv) The activities that are allowed at this stage are inquiry, order entry, order modification, order cancellation & order matching.
- a) Only (i)
  - b) Only (ii)
  - c) Only (i), (ii) & (iii)
  - d) All of the above
- Q9** Surveillance & control (SURCON) is that period after market \_\_\_\_\_ during which, the user have \_\_\_\_\_ only.
- a) Open, inquiry access.
  - b) Close, inquiry access.
  - c) Open, order access.
  - d) Close, order modification access.

- Q10** Each user of a trading member must be registered with the \_\_\_\_\_ & is assigned an unique \_\_\_\_\_.
- a) SEBI, code.
  - b) NSDL, password.
  - c) Exchange, user id.
  - d) NSCCL, user id.
- Q11** When a user logs in for the first time, he has to enter the default password \_\_\_\_\_ provided by the exchange.
- a) NEATID.
  - b) NEATCD.
  - c) NEATCM.
  - d) NEATPASSWORD.
- Q12** If a trading member forgets his password then he is required to \_\_\_\_\_ in writing with a request to reset the password.
- a) Inform the client.
  - b) Inform the SEBI.
  - c) Inform the exchange.
  - d) Inform the NSDL.
- Q13** Temporary sign off is a useful feature that allows the user to disallow the use of the trading software without actually \_\_\_\_\_.
- a) LOGGING IN.
  - b) Logging off.
  - c) Typing anything.
  - d) Entering order.
- Q14** The temporary sign off is automatically activated when the user is inactive for a period of \_\_\_\_\_.
- a) 5 minutes.
  - b) 10 minutes.
  - c) 15 minutes.
  - d) 20 minutes.
- Q15** Name the period after market close during which, the users have inquiry access only?
- a) SURCON.
  - b) Open Phase.
  - c) Market Close.
  - d) None of the above.
- Q16** The NEAT system provides an order driven market, wherein orders match on the \_\_\_\_\_ basis of \_\_\_\_\_.
- a) First come bases.
  - b) Highest price bases.
  - c) Time and price priority.
  - d) None of the above.

## Understanding Neat System

- Q17** Capital market has how many types of markets?  
a) 5 markets.  
b) 4 markets.  
c) 2 markets.  
d) 3 markets.
- Q18** What is the full form of VSAT?  
a) Very small Aperture terminal.  
b) Very small Alternative terminal.  
c) Very smallest Aperture trading.  
d) None of the above.
- Q19** Who receives End of the day reports for all the branches of the Trading member?  
a) Dealer.  
b) Branch manager.  
c) Broker.  
d) Corporate manager.
- Q20** Who can view and perform order and trade related activities only for oneself?  
a) Broker.  
b) Dealer.  
c) Branch Manager.  
d) None of the above.

### Answers

Q1 (a)	Q2 (b)	Q3 (c)	Q4 (c)	Q5 (a)	Q6 (b)
Q7 (a)	Q8 (d)	Q9 (b)	Q10 (c)	Q11 (c)	Q12 (c)
Q13 (b)	Q14 (a)	Q15 (a)	Q16 (c)	Q17 (b)	Q18 (a)
Q19 (d)	Q20 (b)				

### Very short answer type:

- Q1 Give the full names of the following terms—NEAT, VSAT, OECLOB.  
Q2 Name the four types of market of the capital system.  
Q3 What is odd lot market?  
Q4 Explain the term auction market.  
Q5 What are the names of the different market phases.  
Q6 What is market close?  
Q7 On starting NEAT application, what details appear on the logon screen?

### Short answer type:

- Q1 What is NEAT system? & how does it work?  
Q2 What is normal market?

## Understanding Neat System

- Q3 What kind of market is RETDEBT market.
- Q4 Who is a corporate manager & as a NEAT user, he has what facilities?
- Q5 What is open phase?
- Q6 What is SURCON period?

### **Long answer type:**

- Q1 Why SBTS was introduced & what was its impact?
- Q2 Explain the various market types.
- Q3 Explain corporate hierarchy in terms of trading system.
- Q4 What are the different market phases?