1. What Is Business Intelligence?

Ans.

- BI is a broad category of applications, technologies, and processes for gathering, storing, accessing, and analyzing data to help business users make better decisions.
- BI applications enable decision makers to quickly ascertain the status of a business enterprise by examining key information.
- Example: Large firms that want to invest in single family homes to rent need current, timely, and accurate information to predict the rents they can charge to maximize their return on investment (ROI).
- The essential goal of this information systems is to provide the right information to the right person, in the right amount, at the right time, in the right format.
- In essence, BI achieves this goal. BI systems provide business intelligence that you can act on in a timely fashion.

2. Use a decision support framework to demonstrate how technology supports managerial decision making.

Ans.

- A decision support system gathers and analyzes data, synthesizing it to produce comprehensive information reports. In this way, as an informational application, a DSS differs from an ordinary operations application, whose function is just to collect data.
- The DSS can be employed by operations management and other planning departments in an organization to compile information and data and synthesize it into actionable intelligence. In fact, these systems are primarily used by mid- to upper-level management.
- For example, a DSS may be used to project a company's revenue over the upcoming six months based on new assumptions about product sales. Due to a large number of factors that surround projected revenue figures, this is not a straightforward calculation that can be done manually. However, a DSS can integrate all the multiple variables and generate an outcome and alternate outcomes, all based on the company's past product sales data and current variables..
- **Uses Decision Support System**
    - In organizations, a decision support system (DSS) analyzes and synthesizes vast amounts of data to assist in decision-making. With this information, it produces reports that may project revenue, sales, or manage inventory. Through the integration of multiple variables, a DSS can produce a number of different outcomes based on the company’s previous data and current inputs.
- **Example of a Decision Support System**
    - Many different industries, from medicine to agriculture, use decision support systems. To help diagnose a patient, a medical clinician may use a computerized decision support system for diagnostics and prescriptions. Combining clinician inputs and previous electronic health records, a decision support system may assist a doctor in diagnosing a patient.
- **Benefits of a Decision Support System**
    - Broadly speaking, decision support systems help in making more informed decisions. Often used by upper and mid-level management, decision support systems are used to make actionable decisions, or produce multiple possible outcomes based on current and historical company data. At the same time, decision support systems can be used to produce reports for customers that are easily digestible and can be adjusted based on user specifications.

3. Mention the capabilities of DSS (Decision Support systems)

Ans.

- Decision support systems (DSSs) combine models and data to analyze semi-structured problems and some unstructured problems that involve extensive user involvement. Models are simplified representations, or abstractions, of reality. DSSs enable business managers and analysts to access data interactively, to manipulate these data, and to conduct appropriate analyses.
- Decision support systems can enhance learning and contribute to all levels of decision making.
- DSSs also employ mathematical models. Finally, they have the related capabilities of sensitivity analysis, what–if analysis, and goal-seeking analysis.
- Sensitivity Analysis. Sensitivity analysis is the study of the impact that changes in one or more parts of a decision-making model have on other parts. Most sensitivity analyses examine the impact that changes in input variables have on output variables.
- What–If Analysis. A model builder must make predictions and assumptions regarding the input data, many of which are based on the assessment of uncertain futures. The results depend on the accuracy of these assumptions, which can be highly subjective. What–if analysis attempts to predict the impact of a change in the assumptions (input data) on the proposed solution.
- Goal-Seeking Analysis. Goal-seeking analysis represents a “backward” solution approach. It attempts to calculate the value of the inputs necessary to achieve a desired level of output.

4. Give examples of Business Intelligence Applications for Presenting Results.

Ans.

Dashboards:

Business intelligence dashboards are information management and data visualization solutions used to analyze your data. Content creators can use interactive elements like filters and actions to combine charts, graphs and reports in a single screen for snapshot overviews. Dashboards are one of the most popular capabilities of BI platforms because they present easily understandable data analysis, allow you to customize which information you want to view, and provide a way to share the results of your analysis with others. Dashboards and reports are critical for business intelligence, and dashboards can help users understand complex reports. Dashboards are ideal for stakeholders who need at-a-glance overviews of performance.

Data Visualization Technologies

- For business intelligence, it can be a story that tracks a company's performance across key indicators. How does the company compare to competitors? It can be about how an email or product marketing campaign is doing based on metrics. Is the campaign on track to reach its goal? Or it can be a story about what's happening with data sources.
- Good data visualization is essential for analysing data and making decisions based on that data. It allows people to quickly and easily see and understand patterns and relationships and spot emerging trends that might go unnoticed with just a table or spreadsheet of raw numbers. And in most cases, no specialized training is required to interpret what's presented in the graphics, enabling universal understanding.
- A well-designed graphic can not only provide information, but also heighten the impact of that information with a strong presentation, attracting attention and holding interest as no table or spreadsheet can.
- Most data-visualization tools are capable of connecting with data sources such as relational databases. This data, which may be stored on premises or in the cloud, is retrieved for analysis. Users can then select the best way to present the data from numerous options. Some tools automatically provide display recommendations based on the type of data presented.

Real-Time BI

- Real-time business intelligence (RTBI or Real-Time BI) is the process of sorting and analyzing business operations and data as they occur or are stored. RTBI allows organizations to evaluate business processes and take strategic action on the current overall business environment.
- RTBI is important in scenarios that require live business insight in a fast-paced environment. RTBI is implemented on operational systems and live data storage components that maintain business processes, events and data in real time. It also works on big data or past data repositories to combine them, derive inferences or compare/correlate previous statistics.
- RTBI has several types of deployment and operational architectures, including:
    - Event-based data analytics that trigger the detection of specific data events
    - Server-less data analytics used to directly extract data from the source, rather than the data warehouse or repository

5. Differentiate between OLTP and OLAP

	OLTP	OLAP
Characteristics	Handles a large number of small transactions	Handles large volumes of data with complex queries
Query types	Simple standardized queries	Complex queries
Operations	Based on INSERT, UPDATE, DELETE commands	Based on SELECT commands to aggregate data for reporting
Response time	Milliseconds	Seconds, minutes, or hours depending on the amount of data to process
Design	Industry-specific, such as retail, manufacturing, or banking	Subject-specific, such as sales, inventory, or marketing
Source	Transactions	Aggregated data from transactions
Purpose	Control and run essential business operations in real time	Plan, solve problems, support decisions, discover hidden insights
Data updates	Short, fast updates initiated by user	Data periodically refreshed with scheduled, long-running batch jobs
Space requirements	Generally small if historical data is archived	Generally large due to aggregating large datasets
Backup and recovery	Regular backups required to ensure business continuity and meet legal and governance requirements	Lost data can be reloaded from OLTP database as needed in lieu of regular backups
Productivity	Increases productivity of end users	Increases productivity of business managers, data analysts, and executives
Data view	Lists day-to-day business transactions	Multi-dimensional view of enterprise data
User examples	Customer-facing personnel, clerks, online shoppers	Knowledge workers such as data analysts, business analysts, and executives
Database design	Normalized databases for efficiency	Denormalized databases for analysis

6. Why ERP systems?

Ans.

The functional area information systems were developed independent of one another, resulting in information silos. These silos did not communicate well with one another, and this lack of communication and integration made organizations less efficient. This inefficiency was particularly evident in business processes that involve more than one functional area, such as procurement and fulfilment.

Enterprise resource planning (ERP) systems are designed to correct a lack of communication among the functional area IS. ERP systems resolve this problem by tightly integrating the functional area IS via a common database.

ERP systems were originally deployed to facilitate business processes associated with manufacturing, such as raw materials management, inventory control, order entry, and distribution. However, these early ERP systems did not extend to other functional areas, such as sales and marketing. They also did not include any customer relationship management (CRM) capabilities that enable organizations to capture customer-specific information. Finally, they did not provide Web-enabled customer service or order fulfilment.

Benefits of ERP:

ERP systems can generate significant business benefits for an organization. The major benefits fall into the following categories:

- Organizational flexibility and agility: As you have seen, ERP systems break down many former departmental and functional silos of business processes, information systems, and information resources. In this way, they make organizations more flexible, agile, and adaptive. The organizations can therefore respond quickly to changing business conditions and capitalize on new business opportunities.
- Decision support: ERP systems provide essential information on business performance across functional areas. This information significantly improves managers' ability to make better, more timely decisions.
- Quality and efficiency: ERP systems integrate and improve an organization's business processes, generating significant improvements in the quality of production, distribution, and customer service.

Limitations of ERP:

Despite all of their benefits, however, ERP systems do have drawbacks. The major limitations of ERP implementations include the following:

- The business processes in ERP software are often predefined by the best practices that the ERP vendor has developed. Best practices are the most successful solutions or problem-solving methods for achieving a business objective. As a result, companies may need to change their existing business processes to fit the predefined business processes incorporated into the ERP software. For companies with well-established procedures, this requirement can create serious problems, especially if employees do not want to abandon their old ways of working and therefore resist the changes.

7. The different features of On Premise ERP Implementation methods Dematerialization

Ans.

Depending on the types of value chain processes managed by the ERP system and a company's specific value chain, there are three strategic approaches to implementing an on-premise ERP system:

1) **The vanilla approach:**
   a) In this approach, a company implements a standard ERP package, using the package's built-in configuration options. When the system is implemented in this way, it will deviate only minimally from the package's standardized settings. The vanilla approach can enable the company to perform the implementation more quickly. However, the extent to which the software is adapted to the organization's specific processes is limited.
   b) Vanilla implementation provides general functions that can support the firm's common business processes with relative ease, even if they are not a perfect fit for those processes.
2) **The custom approach:**
   a) In this approach, a company implements a more customized ERP system by developing new ERP functions designed specifically for that fi rm. Decisions concerning the ERP's degree of customization are specific to each organization. To utilize the custom approach, the organization must carefully analyze its existing business processes to develop a system that conforms to the organization's particular characteristics and processes.
   b) Customization is expensive and risky because computer code must be written and updated every time a new version of the ERP software is released. Going further, if the customization does not perfectly match the organization's needs, then the system can be very difficult to use.
3) **The best of breed approach**:
   a) This approach combines the benefits of the vanilla and customized systems while avoiding the extensive costs and risks associated with complete customization. Companies that adopt this approach mix and match core ERP modules as well as other extended ERP modules from different software providers to best fit their unique internal processes and value chains. Thus, a company may choose several core ERP modules from an established vendor to take advantage of industry best practices
   b) For example, for financial management and human resource management. At the same time, it may also choose specialized software to support its unique business processes—for example, for manufacturing, warehousing, and distribution. Sometimes companies arrive at the best of breed approach the hard way.

For example, Dell wasted millions of dollars trying to customize an integrated ERP system from a major vendor to match its unique processes before it realized that a smaller, more flexible system that integrated well with other corporate applications was the answer.

8. 5G features for businesses

Ans.

KEY FEATURES OF BUSINESS 5G

To get a baseline understanding of why 5G is the hottest topic in terms of network connectivity, here's a look at the features that set it apart.

5G SPEEDS

One of the biggest selling points of 5G is the internet speed. With the Internet of Things (IoT) introducing a much more internet-reliant way of life, fast internet is crucial for almost all business-related activities. 5G is eventually anticipated to be around 100 times faster than the current 4G networks, offering speeds of around 10Gb/s.

REDUCED LATENCY

Delayed communication will be a thing of the past as 5G networks take hold. Considering the dramatic rise in conference and video calling amidst the Covid-19 pandemic, a reduction in latency is crucial for modern business operations. Currently, the 4G networks have a lag of up to 50 milliseconds – this will be reduced to 1 millisecond (or less) with 5G networks.

INCREASED CAPACITY

The aforementioned IoT in the workplace means an ever-increasing number of devices will be connected to the network. 5G will have the capacity to cope with the higher demand of mobile devices.

NETWORK SLICING

With 5G, a single physical network can be sliced into multiple virtual networks. These are able to support different radio access networks (RANs), or different service types running across a single RAN. This allows businesses to tailor the network for their requirements.

IMPROVED RELIABILITY

The advancements in 5G technology will result in a much more reliable network overall. This means issues such as dropped calls and interrupted connectivity will be eliminated. This is vital for businesses dealing in critical operations such as healthcare or data storage.

WHAT THIS MEANS FOR BUSINESS

Ultimately, these key features will all work to create a much more effective workspace, where businesses are able to operate, unencumbered by connectivity issues. Some of the impacts of 5G on business include:

BETTER BATTERY LIFE

Costs related to the replacement of batteries across industries is exceptionally high. Added to this is the productivity impact of devices with shortened battery lives. The 5G network is actually expected to extend the battery life of all workplace devices – in some instances, by up to 10 times.

DISTANCE WORKING

If there's one thing the national lockdown has shown, it's that many businesses are able to operate in a decentralised manner. This means employees don't necessarily have to be sitting at a desk, 9 to 5, to be productive. However, remote working depends on reliable mobile connectivity – which is where 5G comes in. Businesses will be able to save on expenses related to property rental and office equipment when they can rely more and more on employees to perform through distance working.

AUGMENTED REALITY (AR) AND VIRTUAL REALITY (VR)

What was once limited to the realm on online gaming has subsequently entered the business environment as 5G enables AR and VR capabilities. The support provided for these applications will see many industries adopting AR and VR innovations, including the retail, entertainment, tourism, manufacturing, property and construction industries. At the most basic level, elements such as video conferencing will drastically improve through 5G capability; while advancements in simulations will allow people to 'visit' tourism destinations or properties ahead of investing.

RURAL INNOVATION

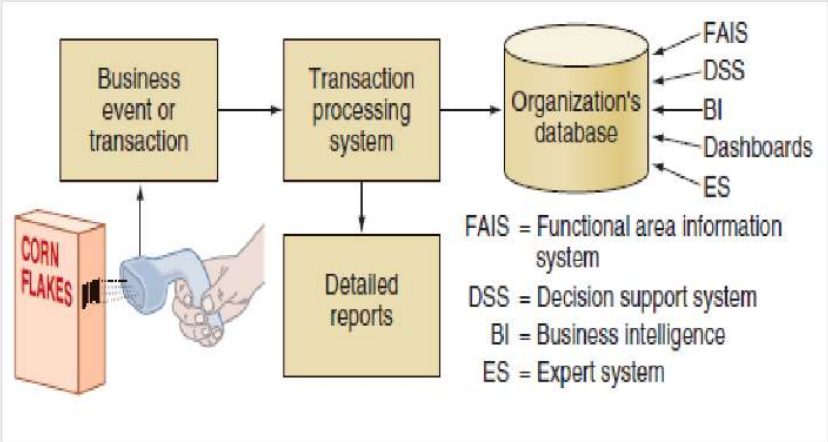
5G will allow Indians residing in rural locations to access internet more easily. This will unlock a number of business opportunities in the more remote areas, in terms of retail, agriculture and even access to online services. This could minimise the ongoing urbanisation and overcrowding, while empowering Indians in rural areas with connectivity.

The opportunities 5G affords business are seemingly endless, and with the network only really taking hold now, there is so much business potential to be explored. It's worth consulting with leading 5G suppliers on the possibility of 5G connectivity if you want to stay ahead of the competition.

9. With a neat diagram discuss how Transaction Processing Systems manages complex data.

Ans.

- A transaction is any business event that generates data worthy of being captured and stored in a database.
- A transaction processing system (TPS) supports the monitoring, collection, storage, and processing of data from the organization's basic business transactions, each of which generates data.
- The TPS collects data continuously, typically in real time—that is, as soon as the data are generated—and it provides the input data for the corporate databases.
- TPSs have to efficiently handle both high volumes of data and large variations in those volumes
- Must avoid errors and downtime, record results accurately and securely, and maintain privacy and security.



- Complexities in Data: While many businesses have strived to make data-driven decisions, the last few years made way for a data revolution in every industry. Now, more than ever, businesses have the ability to harness deep, complex data from most of the software solutions they use
- Data complexity – or the measure of how complex data is – describes large data sets from disparate sources and needs many resources to process. Often, complex data comes from several sources, with each having a different structure, size, query language and type. Of the other different types of data (simple, big and diversified), complex data can be described as a combination of big data and diversified data.
- When more than one person or application program can access the database at the same time, the database has to be protected from errors resulting from overlapping updates.
- When processing a transaction involves more than one computer, the database and all users must be protected against inconsistencies arising from a failure of any component at any time.
- It must be possible to reverse a transaction in its entirety if it turns out to have been entered in error. It is also necessary to reverse a transaction when a customer returns a purchased item.
- It is frequently important to preserve an audit trail. In fact, for certain transactions an audit trail may be legally required.

10. What is FAIS (Functional Area Information System)?

Ans.

A primary mission of the accounting and finance functional areas is to manage money flows into, within, and out of organizations.

Financial Planning and Budgeting. Appropriate management of financial assets is a major task in financial planning and budgeting. Managers must plan for both acquiring and utilizing resources

- Financial and economic forecasting
- Budgeting:

Managing Financial Transactions. Many accounting/finance software packages are integrated with other functional areas.

- Organizations, business processes, and business activities operate with, and manage, financial transactions. Consider these examples:
- Global stock exchanges:
- Managing multiple currencies:
- Virtual close:
- Expense management automation

Investment Management.

- Organizations invest large amounts of money in stocks, bonds, real estate, and other assets. Managing these investments is a complex task, for several reasons.
- First, organizations have literally thousands of investment alternatives dispersed throughout the world to choose from.
- In addition, these investments are subject to complex regulations and tax laws, which vary from one location to another.
- To monitor, interpret, and analyze the huge amounts of online financial data, financial analysts employ two major types of IT tools:
- Internet search engines and
- business intelligence and decision support software.

Control and Auditing:

- it is essential that organizations effectively control their finances and financial statements
- **Budgetary control:** Managers at various levels monitor departmental expenditures and compare them against the budget and the operational progress of corporate plans.
- **Auditing:** Auditing has two basic purposes:
    - to monitor how the organization's monies are being spent and
    - to assess the organization's financial health
- **Financial ratio analysis**: to monitor the company's financial health by assessing a set of financial ratios.
    - liquidity ratios (the availability of cash to pay debt),
    - activity ratios (how quickly a fi rm converts noncash assets to cash assets),
    - debt ratios (measure the firm's ability to repay long-term debt), and
    - profitability ratios (measure the fi rm's use of its assets and control of its expenses to generate an acceptable rate of return).

11. Mention some of the functions of HRIS (IS for Human Resources).

Ans.

Information Systems for Human Resource Management

- Recruitment. Recruitment involves finding potential employees, evaluating them, and deciding which ones to hire
- Human Resources Development. After employees are recruited, they become part of the corporate human resources pool, which means they must be evaluated and developed. IT provides support for these activities.
- Human Resources Planning and Management. Managing human resources in large organizations requires extensive planning and detailed strategy. IT support is particularly valuable in the following three areas:
    - Payroll and employees' records:.
    - Benefits administration.
    - Employee relationship management:

12. Mention the functionalities of IS for Marketing Department.

Ans

A marketing information system, or an MIS, is a system for gathering, storing, analyzing and distributing valuable marketing data to help marketers make better decisions. The input of a marketing information system focuses on collecting relevant internal and external data to analyze and interpret. The output of a marketing information system relates to distributing the findings to all essential internal marketing team members and managers. Marketers can then use the data to make more informed marketing decisions to promote the success of the business.

A marketing information system can be beneficial for multiple types of marketing decisions, such as:

- Control decisions: Middle-level marketing manager decisions related to corrective actions based on deviation from strategic plans implemented by higher-level marketing managers
- Operational decisions: Decisions related to the day-to-day activities of marketing professionals, especially related to accomplishing specific tasks
- Strategic decisions: High-level marketing manager decisions about matters that affect the entire organization, such as organizational policies, objectives and structure

Marketing information systems use a sequential process to synthesize data and share findings to influence decision-making. Here are the steps of the marketing information system process:

- Determine the appropriate marketing metrics.
- Gather relevant data from external and internal sources.
- Graph the data to visualize trends.
- Distribute the trend information to the appropriate departments.
- Use the data to determine the right course of action to take.

13. Types of reports with examples?

Ans.

Routine reports

- Routine reports are produced at scheduled intervals. They range from hourly quality control reports to daily reports on absenteeism rates.
- Managers frequently need special information that is not included in the routine reports. Such out-of-the routine reports are called ad hoc (on-demand) reports.
- Example:
    - Managers receive daily sales reports
    - Managers receive monthly performance reports of salespersons

Ad hoc reports

Ad hoc reports can also include requests for the following types of information:

• Drill-down reports display a greater level of detail. For example, a manager might examine sales by region and decide to "drill down" by focusing specifically on sales by store and then by salesperson.

• Key indicator reports summarize the performance of critical activities. For example, a chief financial officer might want to monitor cash flow and cash on hand.

• Comparative reports compare, for example, the performances of different business units or of a single unit during different times.

Example:

- Manager demand a detailed report of Western region sales
- Manager requires the comparative analysis report of West and South regions
- Manager want to see the performance improvement of a salesperson

Exception reports

Exception reports include only information that falls outside certain threshold standards. To implement management by exception, management first establishes performance standards and creates systems to monitor performance (via the incoming data about business transactions such as expenditures), to compare actual performance to the standards, and to identify exceptions to the standards. The system alerts managers to the exceptions via exception reports.

Example:

- A report on sudden cash flow to a regional office noticed.
- A report on falling stock prices

14. What are the significant ways in which Electronic commerce influences/helps organizations ?

Ans.

- E-commerce is transforming all of the business functional areas as well as their fundamental tasks, from advertising to paying bills. Its impact is so pervasive that it is affecting almost every modern organization.
- Electronic commerce influences organizations in many significant ways.
- First, it increases an organization's reach, defined as the number of potential customers to whom the company can market its products.
- Many small businesses can now operate and compete in market spaces that formerly were dominated by larger companies.
- Another major impact of electronic commerce has been to remove many of the barriers that previously impeded entrepreneurs seeking to start their own businesses.
- Electronic commerce is also fundamentally transforming the nature of competition through the development of new online companies, new business models, and the diversity of EC-related products and services.

15. What are the different types of E-Commerce. Mention some of the major E-commerce models with examples.
    Ans
    - Business-to-consumer electronic commerce (B2C): In B2C, the sellers are organizations, and the buyers are individuals..
    - Business-to-business electronic commerce (B2B): In B2B transactions, both the sellers and the buyers are business organizations
    - Consumer-to-consumer electronic commerce (C2C): In C2C (also called customer-to-customer),
    - Business-to-employee (B2E): In B2E, an organization uses EC internally to provide information and services to its employees
    - E-government: E-government is the use of Internet technology in general and e-commerce in particular to deliver information and public services to citizens (called government-to-citizen or G2C EC) and to business partners and suppliers (called government-to-business or G2B EC).
    - Mobile commerce (m-commerce): The term m-commerce refers to e-commerce that is conducted entirely in a wireless environment

E-Commerce Business Models

Online direct marketing	Manufacturers or retailers sell directly to customers. Very efficient for digital products and services. Can allow for product or service customization (*www.dell.com*)
Electronic tendering system	Businesses request quotes from suppliers. Uses B2B with a reverse auction mechanism
Name-your-own-price	Customers decide how much they are willing to pay. An intermediary tries to match a provider (*www.priceline.com*)
Find-the-best-price	Customers specify a need; an intermediary compares providers and shows the lowest price. Customers must accept the offer in a short time, or they may lose the deal (*www.hotwire.com*)
Affiliate marketing	Vendors ask partners to place logos (or banners) on partner's site. If customers click on logo, go to vendor's site, and make a purchase, then the vendor pays commissions to the partners

Viral marketing	Recipients of your marketing notices send information about your product to their friends
Group purchasing (e-coops)	Small buyers aggregate demand to create a large volume; the group then conducts tendering or negotiates a low price
Online auctions	Companies run auctions of various types on the Internet. Very popular in C2C, but gaining ground in other types of EC as well (*www.ebay.com*)
Product customization	Customers use the Internet to self-configure products or services. Sellers then price them and fulfill them quickly (*build-to-order*) (*www.jaguar.com*)
Electronic marketplaces and exchanges	Transactions are conducted efficiently (more information to buyers and sellers, lower transaction costs) in electronic marketplaces (private or public)
Bartering online	Intermediary administers online exchange of surplus products and/or company receives "points" for its contribution, which it can use to purchase other needed items (*www.bbu.com*)
Deep discounters	Company offers deep price discounts. Appeals to customers who consider only price in their purchasing decisions (*www.half.com*)
Membership	Only members can use the services provided, including access to certain information, conducting trades, etc. (*www.egreetings.com*)

16. Mentions some of the mechanisms through which E-commerce is done

Ans

- Catalogs have been printed on paper for generations. Today, however, they are available over the Internet. Electronic catalogs consist of a product database, a directory and search capabilities, and a presentation function. They are the backbone of most e-commerce sites.

- An auction is a competitive buying and selling process in which prices are determined dynamically by competitive bidding. Electronic auctions (e-auctions) generally increase revenues for sellers by broadening the customer base and shortening the cycle time of the auction. Buyers do not have to travel to an auction at a physical location.

- There are two major types of auctions: forward and reverse.

- In forward auctions, sellers solicit bids from many potential buyers. Usually, sellers place items at sites for auction, and buyers bid continuously for them. The highest bidder wins the items. Both sellers and buyers can be either individuals or businesses. The popular auction site eBay.com is a forward auction.

- In reverse auctions, one buyer, usually an organization, wants to purchase a product or a service. The buyer posts a request for quotation (RFQ) on its Web site or on a third-party site. The RFQ provides detailed information on the desired purchase. Interested suppliers study the RFQ and then submit bids electronically. Everything else being equal, the lowest-price bidder wins the auction. The reverse auction is the most common auction model for large purchases (in terms of either quantities or price). Governments and large corporations frequently use this approach, which may provide considerable savings for the buyer.
- An electronic storefront is a Web site that represents a single store.

- An electronic mall, also known as a cybermall or an e-mall, is a collection of individual shops consolidated under one Internet address. Electronic storefronts and electronic malls are closely associated with B2C electronic commerce.

- An electronic marketplace (e-marketplace) is a central, virtual market space on the Web where many buyers and many sellers can conduct e-commerce and e-business activities. Electronic marketplaces are associated with B2B electronic commerce.

17. E-Payment Mechanisms

Ans

- Electronic payment mechanisms enable buyers to pay for goods and services electronically, rather than writing a check or using cash.

- Traditional payment systems are not effective for EC, especially for B2B. Cash cannot be used because there is no face-to-face contact between buyer and seller. A better method is needed to pay for goods and services in cyberspace. This method is electronic payment systems

- Electronic Checks. Electronic checks (e-checks), which are used primarily in B2B, are similar to regular paper checks.

- Like regular checks, e-checks carry a signature (in digital form) that can be verified (ex: www.authorize.net). Properly signed and endorsed e-checks are exchanged between financial institutions through electronic clearinghouses

- Electronic Cards. There are a variety of electronic cards, and they are used for different purposes. The most common types are electronic credit cards, purchasing cards, stored-value money cards, and smart cards.

- Electronic credit cards allow customers to charge online payments to their credit card account. These cards are used primarily in B2C and in shopping by small-to-medium enterprises (SMEs).

- Purchasing cards are the B2B equivalent of electronic credit cards. In some countries, purchasing cards are the primary form of payment between companies. Unlike credit cards, where credit is provided for 30–60 days (for free) before payment is made to the merchant, payments made with purchasing cards are settled within a week.

- Stored-value money cards allow you to store a fixed amount of prepaid money and then spend it as necessary.

- Finally, smart cards contain a chip that can store a large amount of information

- Digital Wallets. A digital wallet is an application used for making financial transactions. These apps can be on users' desktops or on their smartphones. When the app is on a smartphone, it becomes a mobile payment system.

- A digital wallet allows the user to pay for merchandise in a store by tapping the phone on the merchant's terminal or by scanning a QR code. Security is provided by the phone's fingerprint reader or by entering a PIN. The wallet transmits user data to the terminal using Bluetooth or near field communication (NFC).

18. What are the limitations of E-Commerce.

Ans.

- EC has some limitations, both technological and nontechnological, that have restricted its growth and acceptance.
- One major technological limitation is the lack of universally accepted standards.
- Also, in less-developed countries, telecommunications bandwidth often is insufficient, and accessing the Web is expensive.
- Nontechnological limitations include the perceptions that EC is insecure, has unresolved legal issues, and lacks a critical mass of sellers and buyers.