Unit: 1 Systems Analysis Fundamentals

Short answer questions:

1. Compare treating information as a resource to treating humans as a resource.
2. What are the advantages of TPS over manual system?
3. What is the use of KWS?
4. How MIS do not replace transaction processing system?
5. How DSS is similar to traditional information system?
6. Which system helps the executives to take decisions?
7. Which is the more general term, CSCWS or GDSS?
8. How GDSS helps to solve the problem?
9. Why user involvement throughout the systems project is necessary?
10. Why system analyst needs to be hired in an organization?
11. Why is system analystscalled as agent of change?
12. Which basic qualities must system analysts have to perform its basic roles?
13. What are reasons for using CASE tools?
14. How agile approach is different from SDLC?
15. What are the activities involved in the first stage of SDLC?
16. The values such as communication, simplicity, feedback and courage must be adopted while using which software development approach.
17. Which phase of agile approach system analyst is using while he is adopting a curious attitude towards the work environment ,its problems, technologies and people?
18. What do you understand by the prouctionizing phase of agile approach?

Long Questions:

1. List and explain the higher level systems.
2. List the problems of group interaction that GDSS and CSCWS were designed to address.
3. Write note on wireless system and open source software.
4. Explain needs, roles and qualities of system analyst.
5. Explain software development life cycle in brief.
6. Explain five stages of agile modelling development process.
7. List down four situation under which system analyst choose SDLC and Agile approach.
8. List the advantages of using systems analysis and design techniques in approaching computerized information systems for business.

Multiple Choice Questions:

1. Which of these systems permit the organization to interact with external environments?
   a. Transaction Processing Systems

b. Knowledge Work Systems

c. Decision Support Systems

d. Management Information Systems

2. Which of these systems support professional workers such as scientists, engineers, and doctors to create new knowledge?

a. Transaction Processing Systems

b. Knowledge Work Systems

c. Decision Support Systems

d. Management Information Systems

3. Which of these systems help executives organize their interactions with the external environment by providing graphics and communications technologies in boardrooms?

a. Group Decision Support Systems

b. Computer-Supported Collaborative Work Systems

c. Transaction Processing Systems

d. Executive Support Systems

4. Which one of the following is not a benefit of using the Web?

a. Increasing awareness of the availability of the service, product, industry, person or group

b. 24-hour access for users

c.   Improving the interface design

d.   Creating a global system

e. All of above

5. Enterprise Resource Planning systems integrate:

a. External and internal environments

b. Design systems and information

c. Information systems existing on different management levels and within different functions

d. Intranet and Internet sources

6. Widely known open source software is:

a. Microsoft Office

b. Visible Analyst

c. Primavera

d. Mozilla Firefox

7. Which of the following is not an open source community categorized by researchers?

a. Adhoc

b. Organized

c. Standardized

d. Retail

8. Which of these is not a primary role of a systems analyst?

a.   Agent of change

b.   Consultant

c.   Database designer

d. Supporting expert

9. Which of the following is not true for the Systems Development Life Cycle?
   a. Determining information requirements
   b. Developing and documenting software
   c. Testing and maintaining the system
   d. Implementing and evaluating the system is the first phase of SDLC

10. During which phase of the SDLC do the users, analysts, and systems managers coordinate the project?
    a. First phase
    b. Third phase
    c. Fourth phase
    d. Seventh phase

11. In which phase of the SDLC does the system analyst prepare the systems proposal that summarizes users and the usefulness of current of systems?
    a. Determining human information requirements
    b. Analyzing system needs
    c. Developing and documenting software
    d. Testing and maintaining the system

12. During which phase of the SDLC does the system analyst work with programmers to develop any original software that is required?
    a. Analyzing system needs
    b. Determining human information requirements
    c. Developing and documenting software
    d. Designing the recommended system

13. In which phase of the SDLC does the maintenance of the system and its documentation begin?
    a. Testing and maintaining the system
    b. Determining human information requirements
    c. Analyzing system needs
    d. Implementing and evaluating the system

14. Which phase involves training users to handle the system?
    a. Implementing and evaluating the system
    b. Testing and maintaining the system
    c. Determining human information requirements
    d. Analyzing system needs

15. Systems are enhanced under which of the following situations?
    a. Adding features to the computer system
    b. Business requirements change over time
    c. Hardware and software are changing rapidly
    d. All of the above

16. The disadvantage of using lower CASE tools to generate computer source code is:
    a. The time to develop new systems increases
    b. The time to maintain generated code is less than to maintain traditional systems
    c. Code can be generated in more than one language
    d. Generated code is free from program coding errors
17. Which of the following is the most popular alternate methodology to the SDLC?
    a. Ethics
    b. project champion
    c. prototyping
    d. multiview
18. Which of the following is not one of the four values of the agile approach?
    a. Communication
    b. Simplicity
    c. Feedback
    d. Fear

True or False:

1. Transaction Processing Systems function at the higher level in the organization.
2. Office automation systems support data workers who create knowledge.
3. MIS replace transaction processing systems.
4. At a time system analysts perform only one role in the organization.
5. Management Information Systems are intended to bring a group together to solve a problem with supports such as questionnaires, brainstorming, and polling.
6. To access information users of MIS share a common database.
7. WLANs, Wi-Fi, and PDAs are all systems under the standard Bluetooth.
8. Examples of open source projects include Apache for developing a Web server, the browser called Mozilla Firefox, and Linux.
9. ESS reply on the information generated by TPS and MIS.
10. Systems analysis and design is used to analyze, design, and implement improvements in the support of users and the functioning of businesses.
11. Ajax is a technique that uses a combination of two or more programming languages to upload a program.
12. The three primary roles of the systems analyst are consultant, supporting expert, and agent of change.
13. A supporting expert is a person who serves as a catalyst for change, develops a plan for change, and works with others in facilitating that change.
14. The first phase of the Systems Development Life Cycle requires identifying problems in the given system.

15. A data dictionary lists all the data items used in a system, as well as their specifications.
16. Physical user interfaces include designing files or databases, design controls, and backup procedures.
17. The last phase of systems development involves maintenance of the system, program updates, and its documentation.
18. Analysts rely on CASE tools to increase productivity, communicate more effectively with users, and integrate the work they do on the system from start to the end of life cycle.
19. Visible Analyst enables systems analysts to perform graphical planning, analysis, and design in order to build complex client/server applications and databases.
20. CASE tools are used to integrate databases and terminate after the third phase of SDLC.
21. Lower CASE tools are used more often by programmers who must implement the systems designed via upper CASE tools.
22. A disadvantage of using lower CASE tools is that the amount of time spent on maintenance decreases with code generation.

Fill in the blanks:

1. _____ function at the knowledge level of the organization.
2. An expert system is also called _____.
3. At the knowledge level of the organization are _____ classes of systems.
4. ESS helps _____ organize their interaction with external environment.
5. Systems analysts need to be aware that integrating technologies affects _____ types of systems.
6. Popular ERP software includes that from _____ and _____.
7. In DSS ultimate judgement is in the hand of _____.
8. Abbreviated form of Wi-Fi is _____.
9. _____ support professional workers such as executives and data-entry operators by helping them in their efforts to create new knowledge.
10. ESS extends and supports the capabilities of _____.
11. The top level or strategic level supported by ESS, GDSS and CSCWS provides _____decision support
12. _____ are boundary-spanning systems.
13. _____ support management functions of organization.
14. Wireless communication is referred as _____.
15. AJAX stands for _____.
16. Implementing _____ into SDLC implies emphasizing people rather than the work to be done or the IT that is involved.
17. Maintenance documentation is the activity of _____ phase.
18. _____ are used more often by programmers who must implement the systems designed via upper CASE tools.

19. _____ has specific philosophy, practices and values to address rapidly changing user requirements.

Unit: 2 Information Gathering

Short Questions:

1. State reasons why system analyst uses open-ended questions.
2. List the situations that warrant use of JAD in place of personal organizational interviews.
3. "List your top two priorities for improving the technology infrastructure". State the type of question.
4. Which type of questions help in saving time, keeping control over interviews and getting relevant data.
5. In which type of questions arrangement, specific questions are asked first then general type of questions and end with a specific questions.

Long Questions:

1. The Nokia consultant company wants to update the accounting functions, a maker of digital cameras, you as a system analyst have to interview Mr. Ankit Shah , the chief accountant. Write four to six interview objectives covering his use of decision-making frequency, desired qualities of information, and decision-making style.
    a. In a paragraph, write down how you will approach Ankit Shah to set up an interview.
    b. State which structure you will choose for this interview. Why?
    c. Ankit Shah has four subordinates who also use the system. Would you interview them also? Why or why not?
    d. d. Would you also try to interview customers (visitors to the Web site)? Are there better ways to get the opinions of customers? Why or why not?
    e. e. Write three open-ended questions that you will email to Ankit Shah prior to your interview.
    2. Examine the interview structure presented in the sequencing of the following questions:
        1. How long have you been in this position?
        2. What are your key responsibilities?
        3. What reports do you receive?
        4. How do you view the goals of your department?
        5. How would you describe your decision-making process?
        6. Who is consulted when you make a decision?
        7. What is the one decision you make that is essential to departmental functioning?
    a. What structure is being used in above questionnaire? How can you tell?
    b. Restructure the interview by changing the sequence of the questions (you may omit some if necessary). Label the reordered questions with the name of the structure you have used.

C. Other than above mentioned questions which other questions can you formed for this scenario.

Multiple Choice Questions:

1. Interviewing is a valuable time to explore:
   a. HCI concerns.
   b. System usability.
   c. Supporting individual tasks.
   d. All of the above.
2. Which of the following is not a step in interview preparation?
   a. Reading background material
   b. Establishing interview objectives
   c. Deciding whom to interview
   d. Preparing the interviewee
   e. Researching your organization
3. The benefit of using open-ended interview questions does not include:
   a. Putting the interviewee at ease.
   b. Providing richness of detail.
   c. Revealing avenues of further questioning that may have gone untapped.
   d. Not allowing naturalness.
4. The drawback of using open-ended interview questions includes:
   a. Asking questions that may result in too much irrelevant detail.
   b. Making terminology easier for the interviewee.
   c. Making it more interesting for the interviewee.
   d. Allow more spontaneity.
5. Interviews can be structured in a:
   a. Funnel structure.
   b. Cuboids structure.
   c. Cylinder structure.
   d. Cube structure.
6. Which of the following is not used by systems analyst to prepare the interview?
   a. Establishing interviewing objectives.
   b. Reading background material.
   c. Deciding whom to interview.
   d. Exploring work history of the interviewee.
7. One drawback of closed interview question is:
   a. Saving time.
   b. Failing to obtain rich detail.

    c. Covering main ideas.

    d. Building rapport between interviewer and interviewee.

8. The purpose of a probe is:

    a. To make the interviewee feel at ease.

    b. To understand the system and business situation.

    c. To clarify, draw out and expand on the interviewee's point.

    d. To understand the approach.

9. Which structure should be used when the interviewee needs to warm up to a topic?

    a. Pyramid structure

    b. Cylinder

    c. Diamond

    d. Funnel

10. Which of the following interview structures combines the pyramid and funnel structures?

    a. Pyramid

    b. Cylinder

    c. Diamond-shaped structure

    d. Funnel

11. JAD may not be used when:

    a. Participating in creative development of design.

    b. Users take early ownership of the information systems.

    c. The systems analyst supports individual problem-solving behaviors.

    d. The systems analysts forecast an increase in the number of ideas using JAD.

    e. The absence of key personnel during a two-to-four-day block of time.

12. JAD sessions are used:

    a. When you would like a one-on-one interview.

    b. When users need a standard solution to a typical problem.

    c. When organizational workflow permits the presence of key personnel during a two-to-four day block of time.

    d. To cut the time required by personal interviews.

13. A JAD session involves:

    a. A session leader with excellent communication skills to facilitate appropriate interactions.

    b. One or two observers who are design engineers.

    c. At least one IS analyst who interacts actively.

    d. A session leader who reports to another person in the group.

14. Which of the following person(s) should be included in a JAD session?

    a. Observers

    b. A scribe

    c. A session leader

    d. All of the above.

15. Which of the following is a disadvantage of Joint Application Design (JAD)?

a. Time savings over traditional one-on-one interviews.

b. Possibility of improved ownership of the information system.

c. The time to develop the system is reduced.

d. JAD requires the commitment of a large block of time from all participants.

16. A situation that does not help make questionnaires appropriate is:

a. The respondents are widely dispersed.

b. Many people are involved in the systems project, and it is meaningful to know what proportion of a given group approves or disapproves of a particular feature.

c. An exploratory study for gauging overall opinion.

d. Problems with the current system are not addressed in follow-up interviews.

17. The biggest difference between the questions used for most interviews and those used on questionnaires is:

a. Interviewing permits interaction between the questions and their meanings.

b. Interview question types may be open-ended.

c. Interview question types require constraints.

d. The flow of the questionnaire may be unconvincing.

18. Closed questions should be used when the systems analyst:

a. Needs an opinion about some aspect of the system.

b. Is able to list all possible responses.

c. Needs to make a questionnaire.

d. Has to respond to an answer in a specific way.

19. Scaling is the process of measuring:

a. The accuracy of questions.

b. The reading level of questions.

c. The size of questions.

d. The attributes or characteristics of the questionnaire.

20. One of the forms of measurement scales commonly used by systems analysts is:

a. Nominal.

b. Distance.

c. Distributive.

d. Polynomial.

21. The problem associated with careless construction of scales is:

a. Attitude.

b. Central tendency.

c. Validity.

d. Reliability.

22. Which of the following actions is not conducive for designing a good questionnaire?

a. Allowing ample white space.

b. Allowing adequate space to write responses.

c. Asking respondents to clearly mark their answers.

d. Attitude.

23. The control (or field) not used on Web forms is:
   a. Single line text box.
   b. Scrolling text box, used for one or more paragraphs of text.
   c. Check box for yes-no or true-false answers.
   d. Drop-down label.

24. Method of administering the questionnaire includes:
   a. Convening all concerned respondents one at a time.
   b. Allowing respondents to self-administer the questionnaire.
   c. Uploading questionnaires on print media.
   d. Allowing respondents to administer questionnaires.

25. The first question on the questionnaire should be:
   a. Cluster.
   b. Controversial.
   c. Important.
   d. Insignificant.

True or False:

1. The two key interactive methods to elicit human information requirements are interviewing, and JAD.
2. Opinions, in an interview, may be more important and more revealing than facts.
3. When establishing interviewing objectives, use background information you gathered and the feelings of the interviewee.
4. When preparing an interviewee, call ahead or send an email message and allow the interviewee time to think about the interview.
5. A special kind of closed question is the bipolar question.
6. The purpose of a probe is to draw out and expand on the interviewee's point.
7. A pyramid structure for interviewing goes from general to specific questions.
8. A diamond-shaped structure for interviewing combines the strengths of funnel and pyramid structure.
9. JAD is useful when organizational workflow permits the presence of key personnel during a two-to-four day block of time.
10. A JAD session should be held away from the corporate headquarters and in comfortable surroundings.
11. A potential drawback of using JAD is the creative development of designs.
12. When you decide to survey users via email or the Web, you face problems such as confidentiality and/or authentication of identity.
13. In an interview, the analyst has an opportunity to refine a question, respond to a puzzled look, and control the context.

14. Open-ended questions must be used when the systems analyst is able to list effectively all the possible responses to a question.
15. The language of questionnaires is not an important aspect for systems development.
16. The two forms of measurement scales commonly used by systems analysts are distance scales and distributive scales.
17. The halo effect is a problem that arises when an impression formed in one question carries into the next question.
18. Interval scales are the weakest of the forms of measurement.
19. One aspect of designing a good questionnaire allows ample space to write or type in responses.
20. Choice of administration method is determined by the existing business situation.

Fill in the blanks

1. Interviews can be structured in a _____.
2. _____Structure should be used when the interviewee needs to warm up to a topic.
3. _____Interview structures combines the pyramid and funnel structures.
4. One of the forms of measurement scales commonly used by systems analysts is _____.
5. The problem associated with careless construction of scales is _____.
6. The first question on the questionnaire should be _____.
7. The _____ is a problem that arises when the impression formed in one question carries into the next question.
8. Choice of administration method is determined by the _____.
9. _____steps are use for interview preparation.
10. A special kind of _____question is the bipolar questions.
11. _____ may be open-ended or closed questions.
12. The use of questionnaires is an _____technique.
13. _____ scales possess the characteristic that the intervals between each of the numbers are equal.
14. Diamond-shaped structure for interviewing combines the _____ and _____ structure.
15. _____ structure for interviewing goes from specific to general questions.
16. Funnel structure for interviewing begins with _____ to _____ questions.
17. Bipolar interview questions are a special kind of _____ question.
18. JAD stands for _____.
19. _____ scales are the weakest forms of the measurement.
20. _____ is a problem caused by respondents who are easy raters.

Unit: 3 Using Data Flow Diagrams

Short Questions:

1. What is a Data Flow Diagram? State its use?
2. List out any two advantages and disadvantages of Data Flow Diagram.
3. State the rules for constructing a context level diagram.
4. State the rules for constructing a zero level diagram.
5. What is a physical DFD?
6. What is a logical DFD?
7. Give the key difference between physical DFD and logical DFD.
8. For what purpose is a CRUD used?
9. How much maximum process does a zero level DFD have?
10. Define Data Store.
11. What is the purpose of partitioning DFD?

Long Questions:

1. Compare and contrast context diagram with zero level diagram.
2. State any explain the rules of creating zero level DFD with example.
3. What is a physical DFD? Explain its advantages in detail.
4. Draw a physical DFD for customer order process in supermarket information system.
5. Which are the elements of a DFD? Define and explain all of the elements.
6. Explain in detail child diagrams.
7. What do you mean by partitioning DFD? Describe website partitioning in detail.
8. Write a short note on Communicating DFD.
9. Draw a DFD for the following:
   a. Music Course Management system

      "A ballet studio receives an inquiry from a customer. A receptionist logs the inquiry into an inquiry file, and forwards the inquiry to the facilities planning department and to the scheduling department. The scheduling department coordinator searches the online course catalog file to find a course description that best matches the customer's needs. The scheduling coordinator then searches the schedule file to find dates and times for that course. Finally, the scheduling coordinator sends the course description along with scheduled dates and times to the customer."

   b. Gym Management System

      "Gym Management System is an easy-to-use gym and health club membership management system. It helps you keep records of your members and their memberships, and allows easy communication between you and your members. Gym Master is also feature-packed, helping you in the management and growth of fitness club."

Main Features :
Member Management
Payments
Performance Tracking

c. Online Courier Management System

"Courier Management System is a Windows-based solution specifically designed for the courier and parcel delivery industries. Courier Management System automates the in-field courier process such as, inbound and outbound airway bills, delivery run sheets, accounts receivable and real-time courier tracking.

The web-enabled interface allows the user to login from anywhere in the world, and track their courier and also view the customer rate chart. The system is designed to integrate with Financial Accounting, to eliminate duplication of data entry and is also scalable to grow along with your company."

Features :
1. Order & dispatch
2. Customer Information
3. Driver management
4. Billing (Using crystal reports)
5. Accounting reports (Using crystal reports)

d. **Electronic Device Repair Management System**

"An operator receives a request from a customer for repairing of an electronic device through telephone/email. The device is received in the office for repairing by the customer after fixing the date and time through telephone/email. A repair analyst reviews the request and determines the type of repair needed by accessing a repair codes file. The analyst makes an entry of the request in the customer repair order file and forwards a copy to a technician. The technician completes the repair and forwards the order to the quality control department. A quality control analyst tests the customer's device to verify that the problem has been resolved. The quality control analyst updates the customer repair order file and sends one copy of the invoice/bill to the customer , and a second copy to the head of the quality control department. The customer makes payment by cash/money order or cheque when he is delivered the repaired device by a delivery man."

Multiple Choice Questions:

1. Systems analysts can put together a graphical representation of data processes through:
   a. Database design.
   b. Data flow diagrams.

c. Structured design.

d. Database management.

2. The biggest advantage of the data flow approach over narrative explanations is:

a. Freedom from committing to the technical implementation of the system too early.

b. Further understanding of the interrelatedness of systems and subsystems.

c. Communicating current system knowledge of users through data flow diagrams.

d. Conceptual freedom found in the use of entity, data flow, process, and data store.

3. Which of the following is not one of the four basic symbols used to chart data movement on data flow diagrams?

a. Oval

b. Arrow

c. Rectangle with rounded corners

d. Open-ended rectangle

4. Which of the following is not included in the context level diagram?

a. Basic inputs

b. Processes

c. Data store

d. Outputs

5. A primitive process is:

a. A process that is not exploded to a child diagram.

b. The central process on a context level diagram.

c. A process that requires two or more data flow into it.

d. A process that has only base elements flowing in or out of it.

6. Which of the following describes an error condition?

a. External entities directly connected to other external entities

b. External entities connected to processes

c. Data stores connected to processes

d. Several data flow entering or leaving a process

7. Which of the following is not an error when drawing a data flow diagram?

a. All data flowing into a process or out of a process

b. Data flow on a child diagram that has only one end connected to a process, the other end is a point in space

c. Connecting data stores and external entities directly to each other

d. Placing more than nine processes on a data flow diagram

8. When the data flow in and out of a parent process do not match the data flow in or out of a child diagram, it is called:

a. A primitive process.

b. A disordered pair.

c. A logical data flow diagram.

d. Unbalanced decomposition.

9. A logical data flow diagram:
   a. Includes types of programs, such as online or batch.
   b. Is a model of how the system will be implemented.
   c. Does not include any primitive processes.
   d. Is a model of how the business works.

10. Which of the following is not an advantage of using a logical model?
    a. A system based on a logical model is more stable.
    b. The logical model helps the analyst understand the business being studied.
    c. It facilitates communication with the users.
    d. A logical model clarifies which processes are automated.

11. Which of the following is not an advantage of using a physical model?
    a. Transaction data stores are identified.
    b. It is easier to create compared with the logical model.
    c. The sequence of processes is identified.
    d. Controls are included.

12. Physical data flow diagrams:
    a. Include processes for adding, updating, changing, and deleting records.
    b. Are used to model business events, along with their input and output.
    c. Enable the analyst to better understand the business.
    d. Include no interface data flow in or out of processes.

13. Transaction files:
    a. Are used when interface data flow exists on data flow diagrams.
    b. May be used to link processes that execute at different times.
    c. Are included to store all derived elements.
    d. Are required to implement all online processes.

14. A CRUD matrix is used to show:
    a. Places in the system where the data is inaccurate.
    b. Where records are updated, added, deleted, or used.
    c. Which Web pages are placed on a secure server.
    d. The partitioning of data flow diagrams in a client/server environment.

15. In a CRUD matrix, each row represents the data stores used for each:
    a. Process.
    b. Database table.
    c. Data flow child diagram.
    d. Activity.

16. The process of creating a simple data flow diagram fragment for each unique system trigger is called:
    a. Event modeling.
    b. Trigger analysis.
    c. Response cases.

d. CRUD model analysis.

17. Which of the following is not a reason for partitioning processes into separate programs?
    a. The processes represent different user groups.
    b. The processes execute at different times.
    c. To control system security.
    d. To maintain consistency of data.

18. A use case:
    a. Summarizes an activity, its trigger, input, and output.
    b. Describes a subsystem of a data flow diagram showing how the processes use data produced by other processes.
    c. Describes how the data is partitioned into programs for different users.
    d. Shows when the data is updated, read, created or deleted.

19. Partitioning on a data flow diagram for an ecommerce Web site may be used to show:
    a. External events.
    b. Triggers.
    c. Security.
    d. Derived elements.

20. The advantage of building data flow diagrams based on events is that:
    a. Events are small scale and easy to analyze for input and output.
    b. Users are familiar with the events within their business and know how the events drive other activities.
    c. Events fall into one of four categories: read, update, create, delete.
    d. Events are predictable and lend a high degree of stability to the data flow diagram.

21. Which of the following is a goal of dividing a Web site into a series of Web pages?
    a. Improve the ease of maintaining the Web site
    b. Improve the collection of Web metrics
    c. Improve tracking of page movement by the customer
    d. Improve the revenue obtained by page marketing

22. What should be created each time data must be obtained from a data store or an external partner?
    a. A transaction data store
    b. A new browser window and DFD process to validate the window's data
    c. A unique Web form and DFD process to validate and process the data
    d. A Web form that extends the previous Web form

23. Having separate Web forms to collect transaction data means that:
    a. The forms are each quite complex with complex validation.
    b. The forms are less complex and easier to fill out.
    c. The processing will take place slowly.
    d. The Web site will not be as attractive.

24. Each time an external company or system is involved:

a. The processes that handle each of the interactions should be partitioned into one program for security reasons.
b. A new temporary data store must be used with a process to create the data store.
c. The process that handles the interaction must be on a secure server.
d. The process involved needs to be partitioned into a separate program.

True or False:

1. Systems analysts can put together a graphical representation of data processes using Data Flow Diagrams (DFDs).
2. The biggest advantage of the data flow approach lies in the conceptual freedom found in the use of the four symbols.
3. One of the symbols used in data flow diagrams is an arrow in both directions.
4. A double rectangle is used to represent an external entity.
5. Processes in a rectangle with rounded corners always denote change in or transformation of data.
6. In logical data flow diagrams, the type of physical storage is specified.
7. Entities should be named with a verb-adjective-noun.
8. The first step in developing a data flow diagram is to make a list of data elements: external entity, data flow, process, and data store.
9. The highest level in a data flow diagram is the context diagram which contains only one process.
10. Diagram 0 is the explosion of the context diagram and includes only one process.
11. Data flow diagrams must be drawn working forward or backward through the diagram.
12. The diagram on Diagram 0 that is exploded is called the child process.
13. In Diagram 0, the child diagram is given a different number than its parent process.
14. Data flow that matches the parent flow is called an interface data flow.
15. One of the common errors made when drawing data flow diagrams is pointing an arrow in the wrong direction.
16. Data stores and external entities must connect only with a process.
17. Each child diagram should have different input or output data flow as the parent process.
18. A physical data flow diagram focuses on the business and how the business operates.
19. A logical data flow diagram focuses on how the system will be constructed.
20. Systems formed using logical data flow diagrams are more stable because they are based on business events rather than on a particular technology.
21. Physical data flow diagrams are often more complex than logical data flow diagrams because of the many data stores present in a system.
22. A CRUD matrix is a tool used to represent where master files are Created, Read, Updated, and Deleted within a system.
23. Physical data flow diagrams contain the same items as found in logical data flow diagrams.

24. Elements that are not keyed but are based on a calculation or logical operation are called base elements.
25. The systems analyst determines the data stores required for the process by examining the input and output data flows.
26. Partitioning is the process of examining a data flow diagram and creating a set of computer programs and manual procedures.

Fill in the blanks

1. When the data flow in and out of a parent process do not match the data flow in or out of a child diagram, it is called _____.
2. Partitioning on a data flow diagram for an ecommerce Web site may be used to show _____.
3. The process of creating a simple data flow diagram fragment for each unique system trigger is called _____.
4. The _____ diagram does not contain any data store.
5. Through a structured analysis technique called _____, the systems analyst can put together a graphical representation of data processes throughout the organization.
6. A(n) _____ is used to show the occurrence of transforming process.
7. With _____ approach to diagramming data movement, the diagrams move from general to specific.
8. The _____ diagram is the highest level in the data flow diagram and contains only one process, representing the entire system.
9. Data flow that matches the parent flow is called _____.
10. _____ sends data to or receives data from the system.
11. The process on Diagram 0 that is exploded is called the _____ process and the diagram that results is called the _____.
12. _____diagram describes the business events that take place and the data required and produced by each event.
13. Every row in an event table represents _____and is used to create a single process on a data flow diagram.
14. The trigger and response columns become the _____ and _____ data flows, and the activity becomes the _____ in the event response table.
15. Each processes number with an integer, generally starting from the _____corner of the diagram and working toward the _____ corner.
16. The major data stores of the system and all external entities are included on _____diagram.
17. _____ are usually not shown on the child diagrams below Diagram 0.

Unit: 4 Analyzing Systems using Data Dictionaries and Process Specifications

Short Questions:

1. Define the term data dictionary. Define metadata.
2. What are four reasons for compiling a complete data dictionary?
3. What information is contained in the data repository?
4. What is the difference between logical and physical data structures?
5. List three reasons for producing process specifications.
6. Define what is meant by a structured decision.
7. What are the two building blocks of structured English?
8. List five conventions that should be followed when using structured English.
9. What is the advantage of using structured English to communicate with people in the organization?
10. What is the first step to take in developing decision table?
11. List the four main problems that can occur in developing decision tables.
12. What is one of the major advantages of decision tables over other methods of decision analysis?
13. List the four major steps in building decision trees.
14. What three advantages do decision trees have over decision tables?
15. In which two situations should you use structured English?
16. In which two situations do decision tables work best?
17. In which two situations are decision trees preferable?

Long Questions:

1. List the eight specific categories that each entry in the data dictionary should contain. Briefly give the definition of each category.
2. What are the basic differences among data dictionary entries prepared for data stores, data structures, and data elements?
3. Describe the difference between base and derived elements.
4. What are the main benefits of using a data dictionary?
5. How does a document type definition help to ensure that an XML document contains all necessary elements?
6. Which quadrant of the decision table is used for conditions? Which is used for condition alternatives?
7. What are the main uses of decision trees in systems analysis?
8. Why shouldn't compiling the data dictionary be viewed as an end in itself?
9. What does extensible markup language (XML) describe?
10. What four elements must be known for the systems analyst to design systems for structured decisions?

11. Create a data dictionary for the registration and login process of a library management system.
12. Create a data dictionary for customer order process of a Pizza Delivery System.
13. Create a data dictionary for billing process of an Online Shopping System.

Multiple Choice Questions:

1. Which of the following is not used for a data dictionary?
    a. Project requirements
    b. Providing a starting point for developing screens and reports
    c. Determine the contents of data stored in files
    d. Develop the logic for data flow diagram processes
2. The data repository does not contain the following types of information:
    a. Information about system data
    b. Procedural logic
    c. Screen and report design
    d. E-R diagram
3. One of the data dictionary categories is:
    a. Data flows
    b. Data algorithm
    c. Data implementation
    d. Data control
4. System inputs and outputs are determined from:
    a. Interviewing
    b. Collecting personal information of users
    c. Analyzing data patterns
    d.   The existing database
5. The information captured for each data flow is not one of the following:
    a. Screen shots
    b.   General description of the data flow
    c.   Source of data flow
    d.   Name of the data structure describing the elements
6. Data flows for all inputs and outputs should be described first because they:
    a. Represent the human interface.
    b. Describe the structure of the entity.
    c. Identify the source point.
    d. Indicate the data structure of the elements.
7. Data structures are described using _____ notation.
    a. Object-oriented
    e. Distributed

f. Algebraic

g. Network

8. The symbol used to represent the data structure is:

    a. The greater than sign

    b. The minus sign

    c. Braces {} meaning repetitive elements

    d. A tilde ~ for an either/or situation

9. Which data structure shows what data the business needs for its day-to-day operations?

    a. Logical

    b. Network

    c. Physical

    d. Conceptual

10. Which of the following is not included in a physical data structure?

    a. Key fields used to locate records in a database table

    b. Codes to indicate the status of master records

    c. Codes to identify triggers

    d. A password used by a customer accessing a secure Web site

11. When determining the length of an element do not consider:

    a. Numeric amount lengths determined by the largest number the amount will contain.

    b. Name and address fields.

    c. Displaying the entity in design form.

    d. Sampling historical data found in the organization space.

12. A base element is one that:

    a. Is initially keyed into the system.

    b. Has a default value.

    c. Includes an entity relationship constraint.

    d. Is a foreign element.

13. The following is one of the data types used in PC systems:

    a. Decimal

    b. Double binary

    c. Real cursor

    d. Image

14. X(8) represents:

    a. Eight spaces.

    b. Eight XXXXXXXX.

    c. A pattern repeating eight times.

    d. A data type for an attribute.

15. Data elements should be defined with:

    a. Descriptive information

    b. Structure of data

    c. Entity-related criteria

    d. Unique values

16. The information included on a typical form used to describe a data store is:

    a. Data store id

    b. Master data structure.

    c. Maximum number of similar patterns of data.

    d. Description of the method used to analyze data.

17. A default value on a GUI screen may be used for:

    a. Drop-down lists

    b. Radio buttons.

    c. Check boxes.

    d. All of the above.

18. Which elements must be found in the data structure?

    a. Primary and secondary keys

    b. Master key

    c. Composite key

    d. Candidate key

19. An analyst may develop the data flow diagram using a top-down approach by using:

    a. Binary notation

    b. Database structure

    c. Algebraic notation and structural records.

    d. Appropriate data for the level.

20. An important step in creating a data dictionary is:

    a. To identify and categorize system input and output data flow

    b. To find number of characters in output data flow

    c. To create data pattern of data flow diagram

    d. To write codes for generating the data

21. Data flows represent data in _____.

    a. Motion

    b. Rest

    c. Top-down pattern

    d. Horizontal

22. Data dictionaries may be used to:

    a. Create reports, screens, and forms

    b. Write codes in any language

    c. Generate normalized entities

    d. Analyze data pattern

23. A derived element is one that:

    a. Is derived from the master database

    b. Is derived from a data flow diagram

c. Is created by a processes based on calculations or logic

d. Specifies the disk space for the element

25. A goal of producing process specifications is to:

a. Reduce process relationships.

b. Obtain descriptions of data anomalies.

c. Validate the system design, including data flow diagrams and the data dictionary.

d.   To obtain formatted reports.

26. Primitive process specifications are not created for:

a. Physical input and/or output processes.

b. Processes that represent simple data validation.

c. Processes for which prewritten code already exists.

d. All of the above.

27. Process specification forms should not contain the following information:

a. Brief description of what the process accomplishes.

b. Process name.

c. List of symbol table.

d. List of input data flows.

28. Which of the following is not a business rule?

a. Definition of business terms

b. Data integrity constraints

c. Referential integrity

d. Processing sequences

29. Process logic may be represented as:

a. Structured English.

b. A decision table.

c. A decision tree.

d. Any combination of the above.

30. Structured English is not based on _____.

a. Instructions organized into nested and grouped procedures.

b. Simple English statements.

c. Data redundancies.

d. Add, multiply, and move.

31. In order to write structured English, which convention is not used?

a. Express all logic in terms of four types of structures.

b. Indent blocks of statements to show nesting clearly.

c. Use and capitalize accepted keywords such as IF, THEN, ELSE.

d. Words in a data dictionary should be with brackets.

32. Which of the following is true for Structured English?

a. It is a communication tool.

b. It is a software tool.

    c. It is a scaling tool.

    d. It is a planning and design tool.

33. Which of the following is not one of the basic constructs used to write computer source codes?

    a. Sequence

    b. Selection

    c. Looping

    d. Interaction

34. Which of the following is not true when creating structured English?

    a. Simple structured English statements are required.

    b. If...then...else structured English statements must be present.

    c. DO WHILE, DO UNTIL or PERFORM UNTIL structured English statements must be included.

    d. A simple relationship diagram.

35. In drawing a decision tree, which of the following statements is incorrect?

    a. Identify all conditions and actions and the order and timing of these.

    b. Begin building the tree from left to right.

    c. Logic moves clockwise beginning from the upper left.

    d. Identify the set of classification rules.

36. The following standard format is not used for presenting a decision table?

    a. Upper-left, action-conditions

    e. Upper-right, action-condition alternatives

    f. Lower-right, rules for executing actions

    g. Lower-left quadrant, action-communication

37. Which of the following is not required for building decision trees?

    a. Identify the number of conditions.

    b. Identify the number of condition alternatives.

    c. Identify the possible actions.

    d. Identify the sequence of decision tables.

38. How many columns would be there if a decision table has four conditions and two alternatives (Y or N) for each of the conditions?

    a. 4

    b. 8

    c. 16

    d. 32

39. The following problem can occur in developing decision tables:

    a. Redundancy.

    b. Accuracy.

    c. Completeness.

    d. Possible state.

40. Contradictions often occur if the following is incorrectly inserted into a table:

    a. Dashes [__].

b. Greater than [>].

c. Question mark [?].

d. Percentage [%].

41. To reduce the complexity of unwieldy decision tables, do not use:

a. Extended entries.

b. ELSE rules.

c. Construct multiple tables.

d. IF-WHEN-WHERE rules.

42. Unlike the decision tree used in management science, the analyst's tree does not contain:

a. Probabilities and outcomes.

b. Complex analysis tables.

c. Partitioned tables.

d. Splitting of tree at lowest level.

43. Which of the following is not one of main advantages of a decision tree over a decision table?

a. Takes advantage of high-level programming.

b. Sequential structure of decision tree branches.

c. Conditions and actions of decision trees are found on some branches.

d. More readily understood by others in the organization.

44. Which structured decision analysis technique is not correct?

a. Use structured English when complex combinations of actions and rules are found.

b. Use structured English when communication to end users is important.

c. Use structured English when there are many repetitious actions.

d. Use decision tables when you require a method that avoids redundancies.

45. Each data flow diagram process does not expand to:

a. A child diagram.

b. A structure chart.

c. Structured English.

d. A parent diagram.

46. The rule for horizontal balancing is:

a. All base elements on an output data flow must be present on an input flow.

b. All derived elements on an output data flow must not be present on an input data flow.

c. All derived elements on an output data flow must be created by the analyst.

d.   Base elements in an input data flow must be present in derived elements.

47. Minispecs are created for the following processes:

a. Higher-level processes that explode to a child diagram.

b. Modern processes on a diagram.

c. Lower-level processes that merge to a parent diagram.
    Lower-level processes that split at child level.

True or False:

1. The data dictionary is one that is compiled by systems analysts to guide them through analysis and design.
2. Data about data is called metadata.
3. A data dictionary may be used to determine the stored procedures and triggers.
4. A data dictionary contains information about data items and procedures.
5. A repository concept may contain procedural logic and use cases.
6. The four data dictionary categories are: data flows, data structures, data elements, and data stores.
7. Data structures are usually the first components of a data dictionary to be defined.
8. Brackets [ ] represent an either/or situation.
9. Parentheses ( ) represent repetitive elements, also called repeating groups or tables.
10. The logical design stage shows what data the business needs for its day-to-day operations.
11. A data element is not an important element in the data dictionary and may not be entered in an element description form.
12. An alias is another name used by different users in different systems.
13. The final length of an element is based on the OLE data type used to create an entity.
14. Zoned decimal format is one of the standard formats for mainframe computers.
15. A discrete data element is one that has all variable values.
16. All derived elements, such as the employee year-to-date gross pay, must be stored in a repository.
17. The use of the binary number system allows the analyst to develop the data dictionary and the data flow diagrams.
18. As child diagrams are created, the data flow into and out of the processes becomes more detailed.
19. An important step in creating a data dictionary is to identify the attributes of forms and reports.
20. Once a form is complete, each element should be analyzed to determine the duplicate elements.
21. Data stores represent data in motion.
22. Data stores created for only one report or screen are referred to as "user profiles."
23. The data dictionary should be tied into a number of systems programs so that when an item is updated, it is automatically updated in the database.
24. Extensible Markup Language (XML) is a language that can be used to exchange data between businesses or between systems within a business.
25. A Document Type Definition is used to determine the validity of an XML document.
26. A "role" is a more precise way to define the content of an XML document.
27. Process specifications may be created for class methods in object-oriented design.
28. One of the goals to produce process specifications is to obtain a description of a system.
29. Subprograms are written and documented a number of times to validate the system design.
30. Process specifications link the process to the data flow diagram, and hence the data dictionary.

31. Process specifications should not be entered on a form or into a CASE tool screen.
32. Process logic may be represented as structured English, a decision table, or a decision tree.
33. Structured English is based on programming languages, iterative statements.
34. To write structured English, use indent blocks of statements to show their nesting.
35. Besides the obvious advantage of clarifying the logic and relationships found in human languages, structured English is also a communication tool.
36. If communication is unimportant, structured English is a viable alternative for decision analysis.
37. If a data dictionary contains a series of fields without any basic constructs, the process specification will contain looping statements.
38. A decision table is a table made up of rows and columns, separated into four quadrants.
39. What makes a decision table worthwhile is the set of rules for each of the actions.
40. To build a decision table, determine the structure of the table, and data anomalies.
41. Calculate the maximum number of columns in a decision table by finding the cross-product of two tables.
42. Redundancy can occur in developing decision tables when identical sets of alternatives require the exact same action.
43. Decision tables can become very burdensome because they grow rapidly as the number of conditions and alternatives increases.
44. One advantage of using decision tables is that tables help the analyst remove data anomalies.
45. Decision trees are most often drawn on their side, with the root of the tree on the left-hand side of the paper, the tree branching out to the right.
46. While drawing a decision tree, a square node indicates a condition, and a circle indicates an action.
47. In drawing a tree, identify all conditions and actions and their order and timing.
48. Use structured English when you require a method that effectively avoids redundancies and inconsistencies.
49. Use decision trees when the sequence of conditions and actions is critical.
50. Process specifications may be used for generating computer source code and for analyzing the system design.
51. Horizontal balancing means that all output data flow elements must be obtained from structured English descriptions.

Fill in the blanks

1. System inputs and outputs are determined from _____.
2. _____columns would be there if a decision table has four conditions and two alternatives (Y or N) for each of the conditions.
3. Data structures are described using _____ notation.
4. Data flows represent data in _____.
5. _____ elements must be found in the data structure.

6. _____ data structure shows what data the business needs for its day-to-day operations.

Unit: 5 Designing Effective Input and Output

Short Questions:

1. List six objectives the analyst pursues in designing system output.
2. Give two instances that indicate that display output is the best solution for the choice of output technology.
3. List potential electronic output methods for users.
4. List 10 factors that must be considered when choosing output technology.
5. What output type is best if frequent updates are a necessity?
6. What kind of output is desirable if many readers will be reading, storing, and reviewing output over a period of years?
7. What are two of the drawbacks to audio output?
8. List three main ways in which presentations of output are unintentionally biased.
9. Why is it important to show users a prototype output report or display?
10. List four guidelines to facilitate the design of good display output.
11. Define stickiness.
12. What is the "three-clicks" rule?
13. How does a cascading style sheet allow the analyst to produce output?
14. What are RSS feeds?
15. How can the Web administrator use RSS feeds?
16. What are dashboards mainly used for?
17. What are widgets (or gadgets)?
18. List the four guidelines for good form design.
19. What is proper form flow?
20. What are the seven sections of a good form?
21. List four types of captioning for use on forms.
22. List the four guidelines for good display design.
23. What are the three sections useful for simplifying a display?
24. What are the advantages of using onscreen windows?
25. What are the disadvantages of using onscreen windows?
26. List two ways display screens can be kept consistent.
27. Give three ways to facilitate movement between display pages.
28. When should check boxes be used?
29. When should option buttons be used?
30. What are two different ways that form values are used?
31. What are hidden fields used for on a Web form?
32. List four different types of events.

33. What are dynamic Web pages?
34. What are three-dimensional Web pages?
35. Define what is meant by the term skins when used in Web design.

Long Questions:

1. Contrast external outputs with internal outputs produced by the system. Remember to consider differences in external and internal users.
2. What are three situations that point to printers as the best choice for output technology?
3. What are the drawbacks of electronic and Web-based output?
4. What are five ways the analyst can avoid biasing output?
5. What is the difference between constant and variable information presented on a report?
6. List six functional elements of printed reports.
7. List five stylistic or aesthetic elements of printed reports.
8. In what ways do displays, printed output, and Web-based documents differ?
9. What differentiates output for a DSS from that of a more traditional MIS?
10. What are the four primary considerations the analyst has when designing graphical output for decision support systems?
11. List seven guidelines for creating good Web sites.
12. List five guidelines for using graphics in designing Web sites.
13. List seven ideas for improving the presentation of corporate Web sites that you design.
14. In what ways can you encourage companies to promote their Web sites that you have developed?
15. What are the advantages of using XSLT instead of a cascading style sheet?
16. Why should a systems designer be aware of the popularity of widgets (or gadgets)?
17. How does a cascading style sheet allow the analyst to produce output?
18. What are the advantages of using an extensible style language transformation instead of a cascading style sheet?
19. How does a Ajax help to build effective Web pages?
20. What are the design objectives for paper input forms, input screens, or Web-based fill-in forms?
21. What is a specialty form? What are some disadvantages of using specialty forms?
22. List four graphical interface design elements. Alongside each one, describe when it would be appropriate to incorporate each of them in a display design or on a Web-based fill-in form.
23. How does Ajax improve a Web page that changes based on user actions?
24. List the five most legible foreground and background color combinations for display use.
25. What are four situations in which color may be useful for display and Web-based fill-in form design?
26. List seven design guidelines for a Web-based fill-in form.
27. Design an output webpage for profile page of a social networking website "SocialZone". The profile page should contain the following information:

a. Name
b. Age/Birthdate
c. Relationship Status
d. City/State
e. Tagline
f. Qualification
g. Hobbies
h. Occupation
i. Description about the user.

28. Design an output webpage for online quiz homepage "TechQuiz". The page should contain the following information:
    a. Name (Firstname/Middlename/Lastname)
    b. Birthdate
    c. Seat Number
    d. Date
    e. Duration of the exam
    f. General Rules
    g. Cancel and Logout Button.

Multiple Choice Questions:

1. Which of the following is not an objective of output design?
    a. Providing appropriate output distribution.
    b. Choosing the most effective output method.
    c. Designing output to serve a specific user or organizational purpose.
    d. Making output meaningless.
2. An example of external output is:
    a. Advertisements.
    b. Short summary reports.
    c. Detailed reports.
    d. Various reports to decision makers.
3. Which of the following serves as both input and output?
    a. External output
    b. Internal output
    c. Exception report output
    d. Turnaround documents
4. Which is not a key factor of printers to keep in mind?
    a. Reliability
    b. Type

    c. Compatibility with software and hardware

    d. Manufacturer support

5. Which of the following is an advantage of audio output and podcasts?

    a. They are expensive to develop.

    b. They are good for transient messages.

    c. They have limited application.

    d. They are difficult to format.

6. Which of the following is a disadvantage of a printer?

    a. Flexible in types of location

    b. Compatibility problems with computer software

    c. Handles large output

    d. Affordable

7. Which of the following is not a good state for using video clips?

    a. Supplementing static, printed output

    b. Distance collaboration

    c. Tracking activities of employees

    d. Providing brief training episodes that are job specific

8. Which of the following is a step to making a podcast?

    a. Make a script of the podcast.

    b. Document the show.

    c. Track sequence of the show.

    d. Identify number of files created.

9. Which of the following is not a form of electronic output?

    a. Fax

    b. Email

    c. Bulletin board messages

    d. Flash drives

10. Push technology is used to:

    a. Send solicited or unsolicited information to a customer or client.

    b. Extract information from a Web site.

    c. Help organizational members find what they need.

    d. Relieve users' typical burden of searching the Web.

11. Which of the following is not a factor to consider when choosing output technology?

    a. Number of output pages

    b. How many people need the output

    c. Purpose of the output

    d. How frequently the output will be accessed

12. Presentations of output are unintentionally biased in:

    a. How information is sorted.

    b. Setting of acceptable limits.

c. Choice of graphics.

d. All of the above.

13. Which of the following does not focus on avoiding bias in the design of output?

    a. Awareness of the sources of bias

    b. Creating interactive design of output during prototyping

    c. Creating output that is flexible and allows users to modify limits

    d. Train selective users

14. Reports fall into the following category:

    b. Page.

    c. Folder.

    d. Master.

    e. Summary.

15. The functional attributes of a printed report include:

    a. Position of page break.

    b. Time of preparation.

    c. Number of columns.

    d. Heading or title of the report.

16. Which of the following is not a guideline for display design?

    a. Keep the display screen simple.

    b. Facilitate user movement among display screens.

    c. Cluster attractive display.

    d. Create an attractive display screen.

17. In designing graphical output, the systems analyst and users must determine:

    a. The kind of data that need to be displayed.

    b. Its audience.

    c. The effects on the audience of different kinds of graphical output.

    d. All of the above.

18. The tools that cannot guide you in designing Web sites are:

    a. Professional tools.

    b. Study other Web sites.

    c. Consult the books.

    d. Number of graphics used.

19. A Web site has a high degree of _____ if the user stays at the site for a long period of time.

    a. Stickiness

    b. Branching

    c. Monotony

    d. News

20. Which of the following is required to create effective graphics for Websites?

    a. Keep the background simple.

    b. Use commonly used image formats.

c. Examine your Web site on a variety of displays and screen resolutions.

d. All of the above.

20. To which of the following is a cascading style sheet used to transform an XML document?

   a. A handheld device

   b. Printed output

   c. Screen output

   d. All of the above.

21. Ajax uses _____ to obtain small amounts of data, either plain text or XML:

   a. JavaScript and XML

   b. ASP

   c. VBScript

   d. Ada

22. Which of the following is not a guideline to design a good form?

   a. Make forms easy to fill out.

   b. Ensure that forms meet the purpose for which they are designed.

   c. Design forms to assure accurate completion.

   d. Keep forms cluttered.

23. Which of the following is not one of the seven sections of a good form?

   a. Heading

   b. Bookmark

   c. Identification and access

   d. Instructions

24. The section useful for simplifying a display is:

   a. Heading.

   b. Body.

   c. Comments and instructions.

   d. All of the above.

25. Which of the following is on the bottom quarter of the form?

   a. Signature and verification

   b. Body

   c. Heading

   d. Identification and access

26. The type of captioning for use on forms is:

   a. Putting the caption on the different line.

   b. Providing a pull-down menu for data instead of a line.

   c. Lining up choices or alternatives vertically.

   d. Lining up choices or alternatives diagonally.

27. A feature of electronic form design software is:

   a. The ability to design paper, electronic, or Web-based forms.

b. To form design by cutting and pasting familiar shapes and objects.

c. That it supports popular databases.

d. All of the above.

28. Which of the following is not a basic duty for controlling forms?

    a. Making sure that each form in use fulfills its specific purpose.

    b. Designing effective forms.

    c. Deciding on how to reproduce form in the most economical way.

    d. Restricting the availability of forms.

29. Which of the following is not a guideline to keep in mind for a good display screen?

    a. Keep the display simple.

    b. Keep the display presentation consistent.

    c. Facilitate user movement among display screens.

    d. Overuse animation. 23772,17532,30559,17476

30. For the occasional user, only _____% of the display screen should contain useful information.

    a. 65

    b. 90

    c. 10

    d. 50

31. The way to facilitate movement between display pages is:

    a. Scrolling the screen back and forth.

    b. Calling up another display screen for more detailed information.

    c. Performing onscreen dialogue using the prompts.

    d. All of the above.

32. To make the screen more attractive, systems analysts may not use:

    a. Different thicknesses of separation lines between subcategories.

    b. Inverse video and blinking.

    c. Different combinations of colors and different types of fonts.

    d. Graphics serving as a distraction.

33. Which one of the following is not a graphical interface design element to be used on a Web site?

    a. Rectangle

    b. Check box

    c. Circle or radio button

    d. None of the above.

34. Which of the following is used to select data that is mutually exclusive?

    a. Drop-down list box

    b. Text box

    c. Spin button

    d. Option button

35. Which of the following is used to select data that have a continuous range of values, giving users more control when selecting values?

    a. Radio button

    b. Sliders

    c. Drop-down list box

    d. Check box

36. Which of the following GUI components is used to perform an action?

    a. Command button

    b. Drop-down list box

    c. Radio button

    d. Check box

37. Which of the following controls, which is not visible to the viewer, is found on a Web form?

    a. Hidden field

    b. List box

    c. Radio button

    d. Command button

38. A(n) _____ chart may be used to list the variety of events on a Web form.

    a. event-response

    b. pie

    c. stacked-bar

    d. 3-D bar

39. Events may be used to change the contents of:

    a. Drop-down lists.

    b. Messages.

    c. Check boxes.

    d. None of the above.

40. Which of the following should be included with a tab control dialog box?

    a. OK

    b. Cancel

    c. Help

    d. All of the above.

41. Which of the following guidelines does not apply to a tab control box?

    a. These buttons are not hyperlinked to items.

    b. Create a separate tab for each unique feature.

    c. Place the most commonly used tab in front.

    d. Include the buttons: OK, Cancel, and Help.

42. Which of the following is not one of the top five most legible combinations of foreground lettering on a background?

    a. Black on yellow

    b. Green on white

    c. Blue on black

    d. White on blue

43. The situations where color may be useful in screen design are:
    a. To contrast foreground and background black.
    b. To highlight important fields and data.
    c. To point out errors.
    d. All of the above.

45. Which of the following guidelines is not used for Web-based fill-in forms:
    a. Provide clear instructions.
    b. Use a variety of text boxes, push buttons, drop-down lists and other GUI features.
    c. Provide a scrolling text box if you are uncertain how much text will be entered.
    d. Exclude "Submit" and "Clear" buttons.

True or False:

1. To create the most useful output possible, the systems analyst works closely with the user through an interactive process.
2. Systems analysts find out about user and organizational purposes during the feasibility study phase of the system.
3. Output is often produced at different locations and then compiled at one place.
4. One of the common complaints of users is that they do not have easy access to the system.
5. Output can take many forms as: printed paper reports, information on screens, audio with digitized sounds.
6. External output differs from internal output in its distribution, design, and appearance.
7. Display screen outputs have distinct advantage over printer output because of their quietness and potential for interactive user participation.
8. Three key factors of printers to keep in mind are: location, size, and type.
9. Video is a simple form of output, as it combines human emotions with sound.
10. Video clips are useful for distance collaboration because it connects people who do not often get to see each other.
11. Podcasting is the technique of putting downloadable voice files on the Web.
12. RSS feeds are XML documents that users can obtain from links on Web pages or to which they can subscribe.
13. RSS news readers cannot be integrated with browsers as plug-ins.
14. Pull technology refers to a user pulling information from a folder.
15. The term pull technology can be described as any content sent to users at specified times, from Webcasting to content delivery.
16. When designing a Web site it is important to choose a metaphor that can be used throughout the site.
17. If many people need output, Web-based documents with a print option or printed copies are justified.
18. Decision makers at the highest level of operations management need output more rapidly than those at lower levels.

19. Presentations of output are intentionally biased in the choice of graphics.
20. Systems analysts need to recognize the potential impact of output and be aware of the possible ways in which output is unintentionally biased.
21. The functional attribute of a printed report includes the use of footnotes.
22. Output displays in an application should show information from alternate pages.
23. A dashboard has only one gauge to display system information.
24. Stock tickers, weather reports, and RSS feeds are useful widgets.
25. Screen resolutions have no impact on the look and feel of a Web site.
26. PHP is an open source programming language, often used with MySQL.
27. JPEGs are best for artwork images, and GIFs are best for photographs.
28. Ajax uses both JavaScript and XML to obtain small amounts of data from a server.
29. Forms should flow from left to right and top to bottom.
30. The top quarter of the form contains three sections: the heading, the identification, and the instructions.
31. The heading section includes codes that may be used to file the report and gain access later.
32. The bottom quarter of the form is composed of three sections: heading, access section, and explicit data.
33. The disadvantage of putting the caption below the line is that there is more space on the line itself for data.
34. Small vertical tick marks may be included in the box if the data is intended for entry into a system.
35. A vertical check-off caption is superior to a line caption when information required is routine and constant.
36. Separating categories and subcategories with a shaded background can encourage interest in the form.
37. Electronic forms can have intelligence that supports users in their tasks.
38. Form number and revision date are not required in a form when it is completed and submitted manually or electronically.
39. Designers can include context-sensitive user help in any electronic fill-in form.
40. The display should show all the information that is available for a particular action being undertaken.
41. Another way to keep the display simple is to use context-sensitive help and pop-up menus.
42. Displays can be kept consistent by placing information in a different area each time a new display is accessed.
43. The "three-clicks" rule says that users should be able to get to the pages they need after a specific number of mouse clicks.
44. You can make forms user-friendly by using shaded boxes and creating three-dimensional boxes and arrows.
45. Icons are pictorial, onscreen representations symbolizing computer actions that users may select using a mouse, keyboard, touch screen.

46. A check box is used to outline data entry and display fields.
47. Sliders and spin buttons are used to change data that have a continuous range of values.
48. A message box includes rows, columns, and scroll bars that allow the user to enter and view text greater than the size of the box area.
49. Events are for a particular object, such as a button, a text field, or the whole Web page.
50. Changing an image when a mouse moves over it or transforming random images at a give time interval are examples of dynamic Web pages.
51. One of the advantages of using dynamic Web pages is that they will work even if JavaScript is tuned off.
52. Ajax allows Web developers to build a Web page that is dynamically updated with the new data.
53. Tab control has a pull-down box for easy navigation, and icons that allow users to create new folders.
54. Highly contrasting colors should not be used to display foregrounds and backgrounds so that users can grasp quickly what is presented.

Fill in the blanks

1. A(n) _____ chart may be used to list the variety of events on a Web form.
2. For the occasional user, only _____% of the display screen should contain useful information.
3. Ajax uses _____ to obtain small amounts of data, either plain text or XML.
4. A Web site has a high degree of _____ if the user stays at the site for a long period of time.

Unit: 6 Designing Database and HCI

Short Questions:

1. List some examples of entities and their attributes.
2. What is the difference between a primary key and an object identifier?
3. Define the term metadata. What is the purpose of metadata?
4. Name the three main types of database organization.
5. Define the term normalization.
6. What is removed when a relation is converted to the first normal form?
7. What is removed when a relation is converted from 1NF to 2NF?
8. What is removed when a relation is converted 2NF to 3NF?
9. List the three entity constraints. In a sentence, describe the meaning of each entity constraint.
10. Define denoramalization.
11. Define HCI.
12. What is meant by the word well-being when used in an HCI approach?
13. What are the two variables of the Technology Acceptance Model(TAM)?
14. List five of the eleven usability heuristics for judging the usability of computer system and ecommerce web sites provided by Nielsen and others.

15. List three physical considerations that HCI design addresses.
16. List three ways that analyst can improve task or interface design to help,respectively,a person who is visually impaired, hearing impaired or mobility impaired.
17. What are the five objectives for designing user interfaces?
18. Define natural-language interfaces. What is their major drawback?
19. What is a nested menu? What are its advantages?
20. Define onscreen input/output forms. What is their chief advantage?
21. For what types of user is a GUI particularly effective?
22. What are the three guidelines for designing good screen dialog?
23. What are the seven situations that require feedback for users?
24. What is an acceptable way of telling the user that input was accepted?
25. When a user is informed that his or her input is not in the correct form, what additional feedback should be given at the same time?
26. List three ways to notify a web user that the input is not in the correct form.
27. Why is it unacceptable to notify the user that input is not correct solely through the use of audible beeping or buzzing?
28. When a request is not completed, what feedback should be provided to the user?
29. List in shorthand notation the six basic query types.
30. What are the four primary objectives of data entry?
31. List the five general purposes for coding data.
32. Define the term simple sequence code.
33. What is an alphabetic derivation code useful?
34. Define the term block sequence code.
35. What is the simplest type of code for concealing information?
36. What are the benefits of using a significant-digit subset code?
37. What is the purpose of using a mnemonic code for data?
38. Define the term function code.
39. What are changeable data?
40. What are differentiation data?
41. What is one specific way to reduce the redundancy of data being entered?
42. Define the term bottleneck as it applies to data entry.
43. List the three main problems that can occur with input transactions.
44. Define RFID. What are the differences between active and passive RFID tags?
45. Give two examples of the use of RFID tags in process or inventory management in retail or health care environments.
46. Which test checks to see whether data fields are correctly filled in with either numbers or letters?
47. What common error is missed by the Luhn formula?
48. Which test would not permit a user to input a data such as October 32?
49. Which test ensures data accuracy by the incorporation of a number in the code itself?

50. List four improvements to data accuracy that transactions conducted over ecommerce web sites can offer.
51. What is a regular expression?

Long Questions:

1. What are the advantages of organizing data storage as separate files?
2. What are the advantages of organizing data storage using a database approach?
3. What are the effectiveness measures of database design?
4. List types of commonly used conventional files. Which of these are temporary files?
5. Describe the four anomalies that may occur when creating database tables.
6. List the eight steps for retrieving, presorting and presenting data.
7. Explain the differences between traditional database and data warehouses.
8. Explain how fit among the HCI elements of the human, the computer, and the tasks to be performed leads to performance and well-being.
9. What are the components of the term performance in the HCI context?
10. Describe some of the ways that a pivot table allows a user to arrange data.
11. Explain what is meant by question-and-answer interfaces. To what kind of users are they best suited?
12. Describe how users use onscreen menus?
13. What are the advantages of web-based fill-in forms?
14. What are the drawbacks of web-based form-fill interfaces?
15. Explain what command-language interfaces are. To what types of users are they best suited?
16. Define graphical user interface. What is the key difficulty they present for programmers?
17. What are the roles of icons, graphics and color in providing feedback?
18. List eight ways for achieving the goal of minimal operator action when designing a user interface.
19. List five standards that can aid in evaluating user interfaces.
20. Describe two types of web site designs for eliciting feedback from customers.
21. List four practical ways that an analyst can improve the ease of user navigation and the stickiness of an ecommerce web site.
22. What are hypertext links? Where should they be used?
23. Explain what is accomplished with a classification code.
24. Describe what a mashup is.
25. List the eight general guidelines for proper coding.
26. What three repetitive functions of data entry can be done more efficiently by a computer than by a data entry operator?
27. List six data entry methods.
28. What are the eight tests for validating input data?
29. What is Unicode, and how is it used?

30. What is the process for validating data entered into fields?

Multiple Choice Questions:

1. Which of the following is not an effectiveness objective of the database?
   a. Ensuring that data can be shared among users for a variety of applications.
   b. Maintaining inconsistent data.
   c. Ensuring all data required for current and future applications will be readily available.
   d. Allowing the database to evolve and the needs of the users to grow.

2. DBMS does not allow:
   a. Creating databases.
   b. Creating database tables with the same name.
   c. Modifying databases.
   d. Retrieving records.

3. Which of the following is not correct about reality, data, and metadata?
   a. Entities and attributes are within the realm of reality.
   b. Record occurrences are within the realm of actual data.
   c. Record definitions and data item definitions are within the realm of metadata.
   d. Data control commands are within the realm of reality.

4. Which of the following is not a relationship?
   a. One-to-one
   b. One-to-many
   c. Many-to-many
   d. Zero-to-one

5. Every entity has a(n) _____ key.
   a. Secondary
   b. Additional
   c. Candidate
   d. Primary

6. The following type of file is not available:
   a. Link file.
   b. Master file.
   c. Table file.
   d. Transaction file.

7. Which file type is used to enter changes that update the master file and produce reports?
   a. Master file
   b. Table file
   c. Report file

d. Transaction file

8. Which file is used when it is necessary to print a report, but no printer is available?
    a. Master file
    b. Table file
    c. Report file
    d. Transaction file

9. In 3NF, the _____ dependency is eliminated.
    a. Transitive
    b. Partial
    c. Repeating
    d. None of the above.

10. Which of the following is not a guideline for creating a master file or database relation?
    a. Each separate entity should create a master database table.
    b. A specific data field should exist on only one master table.
    c. Each master table or database relation should have programs to create, read, update and delete the records.
    d. Duplicate records.

11. Each master table or database relation should have programs to _____ the records.
    a. Create
    b. Read
    c. Update
    d. Test

12. Which of the following is the integrity constraint that helps to ensure that the database contains accurate data?
    a. Entity integrity constraints
    b. Referential integrity
    c. Domain integrity
    d. All of the above.

13. The following anomaly may occur when creating database tables:
    a. Update anomaly.
    b. Read anomaly.
    c. Compile anomaly.
    d. Format anomaly.

14. The integrity constraint that means all foreign keys in the child table must have a matching record in the parent table is:
    a. Referential integrity.
    b. Entity integrity
    c. Domain integrity.
    d. Relationship integrity.

15. Which of the following guideline is not available to retrieve and present data in a database effectively?
    a. Choose a relation from the database.
    b. Project columns from the relation.
    c. Index or sort rows.
    d. None of the above.

16. Which of the following join operations is for storing all the records from one table and matching records from the other table?
    a. Outer join
    b. Self-join
    c. Inner join
    d. Repeating join

17. The SELECT operation is used to extract:
    a. Rows
    b. Columns
    c. Duplicate records
    d. Secondary key

18. Which of the following is the option for ordering data?
    a. Profiling
    b. Indexing and sorting
    c. Schema
    d. View

19. The process of taking a logical data model and transforming it into a physical model that is efficient for the most often used tasks is called:
    a. Normalization
    b. Domain integrity
    c. Denormalization
    d. OLAP

20. The differences between data warehouses and traditional databases is:
    a. In the data warehouse, data is organized around major subjects
    b. Data in the warehouse is stored as summarized rather than detailed raw data
    c. Data in the data warehouse cover a much longer time frame that in a traditional transaction-oriented database
    d. All of the above.

21. OLAP does not involve the processing of data through:
    a. Manipulation
    b. Summarization
    c. Identification
    d. Calculation

22. Data mining does not have the following decision aid available:

a. Statistical analysis

b. Decision trees

c. Fuzzy logic

d. None of the above

23. Data mining patterns that decision makers do not try to identify are:

a. Associations

b. Sequences

c. Clustering

d. Recording

24. Which of the following is not a physical consideration in HCI design?

a. Vision

b. Hearing

c. Touch

d. Analysis of data

25. Which of the following is not a guideline for the HCI approach to systems design?

a. Consider usability

b. Examine the task to be done and consider the fit among the human, computer, and task

c. Identify what obstacles exist for users

d. Identify the physical environmental traits after the design

26. Which of the following is not a type of user interface available?

a. Natural-language interface

b. Question-and-Answer interface

c. Form-fill interface

d. GUI

e. Event-trigger

27. To design a better user interface, systems analysts should address which of the following objectives?

a. Match the user interface to the task.

b. Make the user interface efficient.

c. Provide appropriate feedback to users.

d. Generating usable queries.

e. All of the above.

28. Which of the following is a type of question/answer interface?

a. Dialog box

b. Natural language

c. System

d. Feedback

29. Which of the following types of interfaces is ideal for inexperienced users?

a. Natural language

b. Question-and-answer

c. System

d. Dialog box

30. Which of the following is not an advantage of nested menus?

a. Allows the screen to appear more cluttered.

b. Provides good screen design.

c. Allows users to avoid seeing menu options in which they have no interest.

d. Can move users quickly through the program.

31. Which of the following is not a guideline of a GUI menu?

a. The main menu bar is always displayed.

b. The main menu should have secondary options grouped into similar sets of feature options displayed.

c. The menu items act as a question-and-answer interface.

d. Menu items in grey are unavailable for the current activity.

32. A command-language interface requires:

a. A submit button

b. Pull-down menus

c. Nested menus

d. Memorization of syntax rules

33. The useful standard in evaluating an interface is:

a. The necessary training period for users should be acceptably short.

b. Users early in their training should be able to enter commands.

c. The interface should be "seamless" so that errors are few.

d. The time necessary for users and the system to bounce back from errors should be short.

e. All of the above.

34. Which of the following is not an advantage of voice recognition systems?

a. They can speed data entry enormously.

b. They free the user's hands for other tasks.

c. Users with limited mobility or impaired sight can benefit.

d. None of the above.

35. Which of the following is not a key point for designing good dialog?

a. Standard operation and consistency

b. Minimal user action

c. Meaningful user action

d. Increases user's frustration with the computer system

36. Which one of the following is not the way for achieving the goal of minimal operator action?

a. Keying whole words on entry screens instead of codes.

b. Entering data that are not already stored on files.

c. Using default values for fields on entry screens.

d. Providing keystrokes for pull-down menus.

37. Feedback is used in many ways except:
    a. The computer has accepted the input.
    b. The input is in the correct form.
    c. The request has been completed.
    d. The input is not in the correct form
    e. None of the above.

38. Which feedback is needed to inform the user that there will be a delay in processing his or her request?
    a. Explaining a delay in processing.
    b. Acknowledging that a request is completed.
    c. Notifying that input is not in the correct form.
    d. Offering the user more detailed feedback.

39. Which feedback is needed to reassure that more detailed feedback is available, and they should be shown how they can get it?
    a. Offering the user more detailed feedback.
    b. Acknowledging that a request is completed.
    c. Notifying that a request was not completed.
    d. Explaining a delay in processing.

40. Program help comes in the following way:
    a. Pressing a function key, such as F1.
    b. A GUI pull-down help menu.
    c. Context-sensitive help.
    d. Wizard   .
    e. All of the above.

41. Context-sensitive help means providing help:
    a. On function keys.
    b. On specific context about the system.
    c. About the current screen or area of the screen.
    d. About interaction with users.

42. Which of the following is not a way to design easy, one-click navigation for an ecommerce site?
    a. Creating a rollover menu.
    b. Building a collection of hierarchical links.
    c. Placing a site map on the home page.
    d. Placing a comment box on every page.

43. It is not possible to perform queries on a table that contains:
    a. Entities.
    b. Attributes.
    c. Values.
    d. Table without a foreign and primary key.

44. Which of the following is not a common type of query?

    a. What is the value of a specified data for a particular entity?

    b. Find all the values for all the attributes for a particular entity.

    c. List all the attributes that have a specified value for all entities

    d. What attribute can be assigned a criteria at run time.

45. Operations are performed in the following order of precedence:

    a. Comparative, arithmetic, boolean

    b. Arithmetic, comparative, boolean

    c. Comparative, boolean, arithmetic

    d. Arithmetic, boolean, comparative

46. The query method that uses a series of words and commands to select the rows and columns that should be displayed in the resulting table is called:

    a. SQL.

    b. Query at runtime.

    c. QBE.

    d. Query datasheet.

47. The systems analyst can support accurate data entry through achievement of the following:

    a. Meaningful coding for data.

    b. Effective and complete data capture.

    c. Efficient data capture.

    d. Quality through validation.

    e. All of the above.

48. Besides providing accuracy and efficiency, which one of the following is not a purpose of coding?

    a. Keeping track of something.

    b. Classifying information.

    c. Concealing information.

    d. Keeping track of only data transformation.

49. Which of the following code types is used to identify an account number?

    a. Alphabetic derivation code

    b. Classification codes

    c. Block sequence codes

    d. Cipher codes

50. The advantage of a block sequence code is that:

    a. It eliminates the possibility of assigning the same number.

    b. The data are grouped according to common attributes.

    c. It gives users an approximation of when the order was received.

    d. Inquiries may be performed on a portion of a code.

51. The _____ code is an extension of the sequence code.

    a. Alphabetic derivation

    b. Classification

    c. Block sequence

    d. Cipher

52. The code used for pull-down menus in a GUI system is the:
    a. Classification code.
    b. Alphabetic deviation code.
    c. Block sequence code.
    d. Cipher code.

53. Which of the following code type is used to conceal information?
    a. Alphabetic derivation code
    b. Classification codes
    c. Block sequence codes.
    d. Cipher codes

54. Which of the following code type is used to reveal information?
    a. Significant-digit subset codes
    b. Classification codes
    c. Alphabetic derivation code
    d. Cipher codes

55. The code type that helps the data entry person remember how to enter the data or the user remember how to use the information is:
    a. Significant-digit subset code.
    b. Mnemonic code.
    c. Alphabetic derivation code.
    d. Block sequence code.

56. The code type used to represent Greek letters, or glyphs or symbols representing syllables or whole words is:
    a. Unicode.
    b. Block sequence.
    c. Mnemonic code.
    d. Significant-digit.

57. Which code type is needed to instruct either the computer or the decision maker about what action to take?
    a. Function code
    b. Block sequence
    c. Mnemonic code
    d. Classification code

58. In establishing a coding system, systems analysts should follow all the guidelines except:
    a. Keep codes concise.
    b. Keep codes stable.
    c. Allow codes to be sortable.
    d. Allow confusing codes.

59. Which of the following guidelines is to be remembered for the effective and efficient data capture?
    a. Deciding what to capture.
    b. Letting the computer do the rest.
    c. Avoiding bottlenecks and extra steps.
    d. All of the above.

60. The two types of data to enter are:
    a. Data that change with every transaction and data that differentiate the particular item be processed from all other items.
    b. Data that change with every transaction and data that remains constant with every transaction.
    c. Data that does change with every transaction and over some time.
    d. Random data and sequential data.

61. Which one of the following is not a data entry method?
    a. Keyboard
    b. Optical character recognition
    c. Magnetic ink character recognition
    d. None of the above.

62. Which of the following is a method to read input from a source document with an optical scanner rather than off the magnetic media?
    a. Keyboard
    b. Classification code
    c. Optical character recognition
    d. Mnemonic code

63. Which data entry method is used for scoring answer sheets for survey questionnaires?
    a. OCR
    b. Bar codes
    c. Mark-sense forms
    d. MICR

64. Which method is used in electronic toll pass by vehicles traversing toll roads?
    a. RFID
    b. MICR
    c. Mark-sense forms
    d. Mnemonic code

65. Which of the following is not a validation method?
    a. Test for missing data.
    b. Test for class or composition.
    c. Cross-reference checks.
    d. Test for analysis of input data.

66. A _____ check is another type of cross-reference check.

a. Geographical

b. Classification

c. Self-validating

d. Credit card

67. Which formula can be used to identify mistakes in entering an incorrect credit card?

a. Luhn

b. Binary code

c. Character code

d. None of the above.

68. Which of the following character is not used in JavaScript regular expression?

a. [m, ...]

f. \W

g. \S

h. {n}

69. The improvement to data accuracy that transactions conducted over ecommerce Web sites cannot offer is

a. Customers generally key or enter data themselves.

b. Data entered by customers are stored for later use.

c. Data entered at the point of sale are used throughout the entire order fulfillment process.

d. Information is extracted to check consistency of data.

True or False:

1. One of the approaches used to store data in a computer-based system involves building a database.

2. A database is the main source of data meant to be shared by many users for various applications.

3. Users cannot have their own view of the data.

4. Many users extract parts of the central database from mainframes and download them onto PCs or handheld devices.

5. An entity subtype is a special one-to-many relationship used to represent additional fields of another entity.

6. There are three types of relationships: one-to-one, one-to-many, and many-to-many.

7. Many-to-many relationships describe associations in only one direction.

8. In an outer-join relationship, an entity has a relationship to itself.

9. A variable-length record is used as an alternative to reserving a large amount of space for the longest possible record.

10. It is optional to have a primary key in a table but the table can have many fields.

11. Secondary keys can be used to select a group of records that belong to a set.

12. An object identifier is a secondary key for each record in a database.

13. The attributes of a master file may be updated often, but the records themselves are relatively permanent.

14. A transaction file is used to print a report when no printer is available.

15. Sequential master files are used when the software requires it or when the records are to be accessed.

16. Hashing is the process of calculating an address from the record key.

17. Second-stage of normalization includes removing all repeating groups and identifying the primary key.

18. In 2NF, some of the nonkey attributes are dependent on the primary key, and also on a nonkey attribute.

19. A 2NF table is normalized to 3NF by eliminating the partial dependencies.

20. A foreign key is a data field of a table that is the primary key of a different table.

21. When the relationship is one-to-many, three entities are necessary.

22. Referential integrity is a type of integrity constraint which is applied to a database.

23. Check constraints are defined at the query design level of a table.

24. An update anomaly happens when a record is deleted, resulting in the loss of related data.

25. Inner joins include records that have matching records in both tables being joined.

26. OLAP involves the processing of data through summarization, calculation, and manipulation.

27. Knowledge about the interplay among users, tasks, task contexts, IT, and the environments in which the systems are used is the basis of HCI.

28. Complex tasks that require human, system, and task interaction are supported by ecommerce and Web systems.

29. The "task" among the human, computer leads to performance and well-being.

30. TAM can be used in the development process to garner user reactions to prototypes.

31. "Real ease of use" is one of the keys used to understand how users intend to interact with a proposed system.

32. Criterion in HCI can be measured by ascertaining whether users find it rewarding to use the system through the organization's task.

33. Usability studies are all about finding out what works in the world and what does not.

34. Pivot tables allow users to arrange data only in descending order.

35. A form may be used to survey users of prototypes on key usability and ergonomic factors.

36. A pivot table template is not easy for users to see data displayed within a table.

37. Tableau software allows users to drag and drop variables onto either a row or a column.

38. When different graphs or tables can be displayed on the same page, the page represents a dashboard.

39. An analyst does not consider noise when designing office systems.

40. Keyboards have been ergonomically designed to provide the feedback for the designing systems.

41. For people with low vision, there are Braille keyboards as well as special speech software that reads Web pages and other documents.

42. The HCI approach to systems design emphasizes the fit among computer, human, and task.

43. Natural-language interfaces permit users to interact with the computer in their everyday, or natural, language.
44. A menu interface is one type of question-and-answer interface.
45. Menus are hardware dependent.
46. A pop-up menu is displayed when the user clicks on a GUI object with the right mouse button.
47. The main drawback of input/output forms is that users may become impatient and may want more efficient ways to enter data.
48. Command languages require no memorization of syntax rules.
49. A tablet PC is a notebook computer with a stylus or touch-sensitive display.
50. An example of good GUI design is the tab control dialog box.
51. The first situation in which users need feedback is to learn that the system is working.
52. When designing Web interfaces, hyperlinks can be embedded to allow the user to jump to the relevant help screens or to view more information.
53. The purpose of one of the Query Types is to determine which attributes fit the description provided when the entity and value are given.
54. QBE is a powerful method for creating database tables in design mode.
55. A sequence code gives users an approximation of when the order was received.
56. Sequence codes should not be used when the order of processing requires knowledge of the sequence in which items enter the system.
57. The alphabetic deviation code is used in identifying an account number.
58. An alphabetic deviation code is necessary to distinguish among classes of items.
59. Classification codes are listed in manuals or posted so that users can locate them easily.
60. An advantage of block sequence codes is that the data are grouped according common attributes.
61. Encoding markdown prices with a block sequence code is a way of blocking price information from customers.
62. One reason for revealing information through codes is to make the data entry more meaningful.
63. Using a significant-digit subset code helps customers locate items belonging to a particular designer.
64. Unicode is used to represent glyphs symbols.
65. The functions that the analyst or programmer desires the computer to perform with data are captured in cipher code.
66. Numeric codes are much easier to sort than alphanumeric.
67. The two types of data to enter are: data that are constant with every transaction, and data that are frequently used.
68. In systems that use GUI, codes are often stored either as a function or a separate table in the database.
69. Optical character recognition allows a user to read input from a source document using magnetic media.
70. Magnetic ink characters are found on the bottom of bank checks and some credit card bills.

71. Mark-sense forms are used to track an individual's credit card purchases for the purpose of building a consumer profile.
72. Bar coding allows the automatic capturing of data that can be used for reordering or forecasting of future needs.
73. Mark-sense forms afford highly accurate data entry.
74. An example of Radio Frequency Identification (RFID) is an electronic toll pass used in vehicles traversing toll roads.
75. Validating input is important to minimize data redundancies.
76. Invalidation of transactions submitted by an unauthorized individual applies to privacy and security concerns.
77. Cross-reference checks are used when one element has no relationship with another one.
78. Common data-entry errors can be avoided through the use of a check digit.
79. Usually validating a single field is done with a series of WHEN...WHERE statements.
80. XML documents may be validated by comparing them to a document type definition or a schema.

Fill in the blanks

1. The _____ code is an extension of the sequence code.
2. The SELECT operation is used to extract _____
3. _____method is used in electronic toll pass by vehicles traversing toll roads.
4. Data mining patterns that decision makers do not try to identify are _____
5. A _____ check is another type of cross-reference check.
6. _____formula can be used to identify mistakes in entering an incorrect credit card.
7. _____data entry method is used for scoring answer sheets for survey questionnaires.
8. In 3NF, the _____ dependency is eliminated.
9. Each master table or database relation should have programs to _____ the records.
10. Every entity has a(n) _____ key.