Integrated Information Systems
Midterm Revision 2023

- The integrated databases on each site will be integrated physically in federated databases.

  F
- …… containing physical copies of data from several sources.
  a. Data Warehousing
  b. Kernel.
  c. Data Models
  d. Centralized Database
- The global controller maintains the definition of the global schemas and acts as a coordinator and translator.

  T
- A FDBS is considered in loosely coupled systems only.

  F
- Federated Databases is an integration of component DBS that are not autonomous.

  F
- Auxiliary Schema describes the rules which govern the mappings between the local and global levels.

  T
- ……. describes how the global relations are divided into fragments.
  a. Fragmentation Schema
  b. Global Schema
  c. Routing Schema
  d. Allocation Schema
- Transaction management issues are divided into query processing and.....
  a. security processing
  b. update processing
  c. backup processing
  d. creating processing.
- The integrated databases may be physical like a mediator.

  F
- Internal view deals with the physical definition and organization of data.

  T

- Federated Databases Are collection of independent, co-operating sources where one source can call on others to supply information

  T
- Mediation is Hardware component that supports providing an integrated view to the sources

  F
- The constituent essential databases are interconnected via a computer network and may be geographically decentralized

  T
- Metadata is data that provides information about other data or the data about data.

  T
- FDBS Dimensions Distribution may be stored on multiple computer systems Only

  F
- Fundamental to the difference between an MDBS and an FDBS is the concept of Heterogeneity

  F
- autonomy in an FDBS is primarily caused by design Heterogeneity among component DBSs.

  F
- Internal view deals with the physical definition and organization of data.

  T
- Federated Schema represents a subset of a component schema that is available to the FDBS. It may include access control information regarding its use by specific federation user. The export schema help in managing flow of control of data

  F
- External view defines a schema for a user/application or a class of users/applications.

  F..... single DB containing physical copies of data from several sources

  a. Data Warehousing
  b. Federated Databases
  c. Data Models
  d. Centralized Database

- ..... allows a component DBMS to control the operations requested by local and external operations
    a. Differences in structure
    b. Differences due to constraints
    c. The query language
    d. Execution autonomy
- occur when two data models provide different primitives such as object oriented (OO) models that support specialization and inheritance and relational models that do not
    a. The query language
    b. Differences in structure
    c. Association autonomy
    d. Communication autonomy
- ..... arise when there is a disagreement about meaning, interpretation or intended use of data
    a. Semantic heterogeneities
    b. Communication autonomy
    c. Association autonomy
    d. Execution autonomy
- ..... abstract definition of the database. It is the "real world" view of the enterprise being modeled in the database
    a. Internal view
    b. Conceptual view
    c. Component Schema
    d. Federated Schema
- ..... is the conceptual concept expressed in primary data model of component DBMS?
    a. Component Schema
    b. Export Schema
    c. Local Schema
    d. External Schema
- Databases using same data values from domains of different cardinalities for same data
    a. Precision Conflicts
    b. Metadata Conflicts
    c. Data Conflicts
    d. Schema Conflicts

- Same concepts are represented at schema level and instance level.
    a. Precision Conflicts
    b. Metadata Conflicts
    c. Data Conflicts
    d. Schema Conflicts
- Represents a subset of a component schema that is available to the FDBS. It may include access control information regarding its use by specific federation user. The export schema help in managing flow of control of data
    a. Local Schema
    b. Export Schema
    c. Federated Schema
    d. External Schema
- Design Autonomy which refers to ability to choose its design regardless بغض النظر
    a. Constraints
    b. The functionality of the system
    c. The implementation
    d. All Of Above

True and False:

1. The process of Information integration is taking several databases making the data in these sources work together as if they were a single database.
   (T)
2. When data is easily accessible, it becomes not easy to integrate any information they want into them projects.
   (F) easy
3. This availability of data all the time is the key for knowledge-sharing, innovation, and collaboration.
   (T)
4. The integrated database may be physical Like (a mediator or "middleware").
   (F) virtual
5. Autonomy in an FDBS is primarily caused by design Heterogeneity among component DBSs.
   (F) the opposite
6. Internal view deals with the physical definition and organization of data.
   (T)
7. Fundamental to the difference between an MDBS and an FDBS is the concept of Heterogeneity.
   (F) autonomy
8. Federated Databases Are collection of independent, co-operating sources where one source can call on others to supply information.
   - (T)
9. Mediation is Hardware component that supports providing an integrated view to the sources.
   (F) software
10. A Centralized Database can be defined as a logically integrated collection of shared data which is physically distributed across the nodes of a computer network.
    (F) Distributed Database
11. Loosely Coupled Systems do not have a global schema.
    (T)
12. A Centralized System manages multiple databases.
    (F) Distributed
13. Federated Database System is an integration of component DBMS that are not autonomous

(F) Non-Federated

14. Federated architectures differ based on levels of integration with the component database systems and the extent of services offered by the federation.
    (T)
15. Tightly Coupled system consists of component systems that use independent processes to construct and publicize an integrated federated schema Like Data warehousing.
    (T)
16. An individual node's participation in the MDB is defined by means of an Auxiliary Schema.
    (F) participation
17. Rules for unit conversion may be required when one site expresses distance in kilometers and another in miles.
    (T)
18. Rules for handling data representation conflicts: Such conflicts occur when syntactically identical data items are represented differently in different data source.
    (F) semantically
19. The user should be able to access several heterogeneous databases as if accessing a single database.
    (T)
20. The user should not be able to access any database using a familiar data model and language.
    (F) should
21. FDBMS should not require any significant changes to existing database systems or applications.
    (T)
22. The system should not accommodate the addition of new databases to the network.
    (F) should
23. The user should be able to access the databases for both retrievals and updates.
    (T)
24. Performance of FDBMS should not be comparable to that of homogeneous distributed systems.
    (F) should
25. To allow users to pose queries on a global schema, an additional control component, known as the global or federal controller, is required.

(T)

26. There are five issues associated with update processing.
    (F) four
27. Global deadlock handling deadlock is a situation when each of two transactions is waiting for the other to release locks on an item.
    (T)
28. Database applications are lightly designed.
    (F) heavily
29. Applications concerned with combining data from homogeneous information sources.
    (F) heterogeneous
30. Information Integration is the merging of information from homogeneous sources.
    (F) heterogeneous
31. The Purpose of Data Integration is to reduce data complexity.
    (T)
32. The Purpose of Data Integration is to make data more available.
    (T)
33. The Purpose of Data Integration is to easy data collaboration.
    (T)
34. Data integration means transparent business processes within the enterprise.
    (T)
35. Data integration helps in cleansing and verifying the information that you are using.
    (F) cleansing &validating
36. Data integration helps in cleansing and validating the information that you are using.
    (T)
37. The integrated database is physical only.
    (F) physical or virtual
38. A virtual database is the partially integrated, logical composite of all constituent databases in a federated database system.
    (F) fully
39. A federated database system is a type of meta- database management system (DBMS), which transparently integrates multiple autonomous database systems into a single federated database.
    (T)

40. The constituent databases are interconnected via a computer network and may be geographically centralized.
    (F) decentralized
41. External view: abstract definition of the database. It is the "real world" view of the enterprise being modeled in the database.
    (F) Conceptual
42. Conceptual view: individual user's view of the database.
    (F) External
43. Internal view deals with the physical definition and organization of data.
    (T)
44. Component schema is the conceptual concept expressed in primary data model of component DBMS.
    (F) Local
45. Component schema is derived by translating local schema into a model called the canonical data model or common data model.
    (T)
46. Export schema: they are useful when semantics missed in local schema are incorporated in the component.
    (F) Component
47. Component Schema represents a subset of a component schema that is available.
    (F) Export
48. External schema defines a schema for a user/application or a class of users/applications.
    T
49. Distributed database can be defined as a logically integrated collection of shared data which is physically distributed across the nodes of a computer network.
    (T)
50. -A Homogenous DBMS resembles a centralized database.
    T
51. Fragmentation schema describes how the global relations are divided into fragments.
    (T)
52. A DBMS can be classified as either centralized or distributed. a distributed manages a single database, while centralized system manages multiple databases.

(F) the opposite

53. A FDBS is a federated database system consists of component DBS that are autonomous yet participate in a federation to allow partial and controlled sharing of their data.
(T)

54. A FDBS can be categorized as loosely coupled systems.
(T)

55. Auxiliary schema describes the rules which govern the mapping between the local and global levels.
(T)

56. A local schema is a single, connected view of heterogeneous databases.
F global schema

57. The global controller maintains the definition of the global schemas and acts as a coordinator and translator.
(T)

Chapter2

58. ERP is Enterprise Resource Planning.
(T)

59. Until the mid-1980s, enterprise databases stored only operational data.
(T)

60. enterprises demand comprehensive access to the information required by decision-making processes. الوصول الشامل
(T)

61. An exponential increase in operational data has made computers the only tools suitable for providing data for decision-making performed by business managers.
(T)

62. A Decision Support System (DSS) is a set of expandable, interactive IT techniques and tools designed for processing and analyzing data and for supporting managers in decision making.
(T)

63. a DSS use to organize a massive amount of information and transform it into images, videos, and text files in order to choose the information that best suits your search.
(T)

64. the system matches individual resources of managers with computer resources to improve the quality of the decisions made.
(T)

65. Data are volatile mean that Data fixed over time.
(F) change

66. Data quality is bad mean that Data deleted in operational systems.
F Data volatile

L

67. A data warehouse is a database, which is kept separate from the organization's operational database.
(T)

68. There is frequent updating done in a data warehouse.
(F) no frequent

69. A Data Warehouse is a subject-oriented, integrated, time-variant, and non-volatile collection of data in support of management's decision-making process.

(T)

69. A data warehouse focuses on the modeling and analysis of data for decision makers.
(T)

70. Data warehouses typically provide a simple and concise view around subject issues by excluding data that are not useful in the decision support process. استبعاد
(T)

71. A data warehouse integrates various homogenous data sources like RDBMS, flat files, and online transaction records.
(F) heterogeneous

72. Heterogenous data sources requires performing data cleaning and integration during data warehousing to ensure consistency in naming conventions, attributes types, etc., among different data sources.
T

73. Data are stored as a snapshots or views to provide information from a historical perspective (e.g., the past 5-10 years).
(T)

74. Every key structure in the data warehouse contains, either implicitly or explicitly, an element of time.

(T)

75. A data warehouse is always a physically separate store of data transformed from the application data found in the operational environment.
(T)

76. Data mining supports knowledge discovery by finding hidden patterns and associations, constructing analytical models, performing classification and prediction, these mining results can be presented using the visualization tools.
(T)

77. A data warehouse supports analytical processing of the information stored in it.
(T)

78. The data can be analyzed by means of basic OLAP operations, including slice-and-dice, drill down, drill up, and pivoting.
(T)

79. A data warehouse is a database, which is kept separate from the organization's operational database.
(T)

80. A data warehouse helps executives to organize, understand, and use their data to take strategic
decisions.
(T)

81. Data warehouse systems help in the integration of diversity of application systems.
(T)

82. A data warehouse system helps in consolidated historical data analysis.
(T)

83. Data warehouse systems are built by integrating data from multiple heterogeneous sources and, in addition to centralization, performs the task of structuring data, supporting analytical reporting and structuring decision-making.
(T)

Question Two MCQ:

1. Purpose of Data Integration Expect _____.
    a. Increase data complexity
    b. Make data more available
    c. Easy data collaboration
    d. Smarter business decisions

2. The integration process involves incorporation with approaches like _____.
    a. ETL
    b. mapping
    c. cleansing
    d. All Above
3. In heterogeneity Problem, Terms may be given different interpretations at different sources is ____.
    a. Missing Values
    b. Value Differences
    c. Semantic Differences
    d. None Above
4. _____ Is the conceptual concept expressed in primary data model of component DBMS.
    a. Component Schema
    b. Export Schema
    c. Local Schema
    d. External Schema
5. _____ allows a component DBMS to control the operations requested by local and external operations.
    a. Differences in structure
    b. Differences due to constraints
    c. The query language
    d. Execution autonomy
6. _____ single DB containing physical copies of data from several sources.
    a. Data Warehousing
    b. Federated Databases
    c. Data Models
    d. Centralized Database
7. _____ describes how the global relations are divided into fragments.
    a. Allocation Schema
    b. Fragmentation Schema
    c. Global Schema
    d. None Above
8. _____ consists of component DBS that are autonomous yet participate in a federation to allow partial and controlled sharing of their data.
    a. Non-federated Database System
    b. Centralized System

c. Federated Database System
d. Tightly Coupled Systems

9. _____ Require component databases to construct their own federated schema.
    a. Loosely Coupled
    b. Tightly Coupled
    c. Non-federated Database System
    d. None Above
10. _____ describes the rules which govern the mappings between the local and global levels.
    a. Participation Schema
    b. Auxiliary Schema
    c. Global Schema
    d. Export Schema
11. _____ may be necessary where one site stores additional information which is not stored at another site.
    a. Rules for unit conversion
    b. Rules for handling null values
    c. Rules for handling data representation conflicts
    d. Rules for naming conflicts
12. We divide transaction management issues into query processing and _____. *
    a. delete processing
    b. update processing
    c. insert processing
    d. create processing
13. _____ maintains the definition of the global schemas and acts as a coordinator and translator. *
    a. The global controller
    b. The global Schema
    c. Query processing
    d. global processing
14. _____ to ensure global update atomicity. *
    a. The global controller
    b. The global Schema
    c. Global data recovery
    d. global deadlock

15. A major challenge for integrating existing databases is the _____. *
    a. Architectural Considerations
    b. construction of a global unified schema
    c. Global semantic integrity enforcement
    d. None of the above
16. In Integration Methodology, _____ during this step the user feedback is crucial to clarify the semantics of each schema. *
    a. Schema merging
    b. Conflict identification
    c. Schema transformation
    d. Conflict resolution
17. in Conflict identification step Individual schemas are analyzed and _____ to identify possible conflicts and the inter-schema relationships are identified. *
    a. compared
    b. updated
    c. compressed
    d. none of the above
18. _____ require component databases to construct their own federated schema. *
    a. Loosely Coupled
    b. Tightly Coupled
    c. Merge Coupled
    d. None of the above
19. _____ Is a single, connected view of heterogeneous databases. *
    a. local schema
    b. intermediate schema
    c. global schema
    d. none of the above
20. naming conflicts occur when: semantically identical data items are named _____. *
    a. Differently
    b. Identically
    c. A and b
    d. none of the above
21. The process of _____ is taking several databases or other information sources and making the data in these sources work together as if they were a single database. *

a. Information integration
b. Information technology
c. Information management
d. None Above

22. To allow users to pose queries on a global schema, an additional control component, known as the global or federal controller, is required.
a. Query processing
b. update processing
c. A and b
d. none of the above

23. _____ during this step the user feedback is crucial to clarify the semantics of each schema.
a. Schema merging
b. Conflict resolution
c. Formulation of an integration policy
d. Schema transformation

24. _____ involves merging export schemas of individual sites into a global schema. The resulting schema is examined for desirable qualities.
a. Schema merging
b. Conflict resolution
c. Formulation of an integration policy
d. Schema transformation

25. _____ includes deciding upon the subset schema that each site is willing to share with other sites, known as export schema, and the integrated global view for each site.
a. Schema merging
b. Conflict resolution
c. Formulation of an integration policy
d. Schema transformation

Chapter2

26. Data created by business operations involved in daily management such as _____.
a. purchase management
b. sales management
c. invoicing processes
d. All Above

27._____ is extracted mainly from the huge amount of operational data stored in enterprise databases.

a. strategic information
b. meta data
c. old information
d. All Above

28. This strategic information is extracted mainly from the huge amount of operational data stored in enterprise databases by means of a _____ and _____*

a. progressive selection, aggregation process عملية الاختيار التدريجي و عملية التجميع
b. aggregation process, invoicing processes
c. None above
d. sales management processes, purchase management processes

29. the decision support system concept is based on several disciplines Such as _____.

a. databases
b. artificial intelligence
c. man-machine interaction
d. All Above

30._____ is a set of expandable, interactive IT techniques and tools designed for processing and analyzing data and for supporting managers in decision making. *

a. DBMS
b. DDBMS
c. DSS
d. FDBMS

31._____ determines the fastest and best route between two points by analyzing and comparing multiple possible options.

a. GPS route planning
b. search engine use
c. GSM
d. None Above

32. I can't find the data I need Mean That _____.

a. available data poorly documented
b. data is scattered over the network مبعثر
c. need an expert to get the data

d. results are unexpected

33. I can't get the data I need Mean That _____.
    a. need an expert to get the data
    b. many versions, subtle differences
    c. available data poorly documented
    d. results are unexpected

34. I can't understand the data I found Mean That _____.
    a. many versions, subtle differences
    b. available data poorly documented
    c. data needs to be transformed from one form to other
    d. need an expert to get the data

35. Data Analysis Problems _____.
    a. Data are "volatile"
    b. Data quality is bad
    c. Heterogeneous sources
    d. All Above

L

36. _____ is a database, which is kept separate from the organization's operational database.
    a. Decision Support System
    b. distributed database
    c. centralized database
    d. data warehouse

37. It possesses consolidated _____, which helps the organization to analyze its business. *
    a. historical data
    b. metadata
    c. distributed data
    d. None Above

38. A data warehouse helps executives to organize, understand, and use their data to take _____. *
    a. strategic decisions
    b. quickly decisions
    c. Support decisions
    d. All Above

39. _____ is constructed for well-known tasks and workloads such as searching records, indexing.

a. An operational database
b. distributed database
c. Federated database
d. All Above

40. An operational database query allows to read and modify operations, while an _____ query needs only read only access of stored data. *
a. OLAP
b. DML
c. DDL
d. DCL

41. An operational database maintains _____ On the other hand, a data warehouse maintains _____. *
a. current data, historical data.
b. current data, metadata
c. historical data, current data
d. None Above

42. Concurrency control and recovery mechanisms are required for operational databases to ensure _____ and consistency of the database. *
a. robustness
b. stability
c. availability
d. completely

43. A data warehouse does not require _____.
a. transaction processing
b. recovery
c. concurrency controls
d. All Above

44. a _____refers to a database that is maintained separately from an organization's operational databases. *
a. Management Information System
b. historical
c. meta
d. None Above

45. Data warehouse systems are built by integrating data from _____. *
a. multiple heterogeneous sources
b. distributed data
c. Centralized data

d. Single heterogeneous source

46. A Data Warehouse is a _____, integrated, time-variant, and nonvolatile collection of data in support of management's decision-making process. *
    a. subject-oriented
    b. Centralized data
    c. integrating data from Single heterogeneous source
    d. non-integrated
47. A data warehouse focuses on the _____and analysis of data.
    a. modeling
    b. visualizes
    c. graphics
    d. All Above
48. A data warehouse integrates various heterogeneous data sources li _____.
    a. RDBMS
    b. flat files
    c. online transaction records
    d. All Above
49. Data are stored as a _____or views to provide information from a historical perspective. *
    a. snapshots
    b. Records
    c. Table
    d. All Above
50. Is _____ a data warehouse allows to process the data stored in it. The data can be processed by means of querying, basic statistical analysis, tables, charts, or graphs.
    a. Information Processing
    b. Analytical Processing
    c. transaction processing
    d. Data Mining
51. _____ is knowledge discovery by finding hidden patterns and associations, constructing analytical models, performing classification and prediction. These mining results can be presented using the visualization tools.
    a. Analytical Processing
    b. Information Processing
    c. Data Mining
    d. transaction processing

138. Data Warehouse is required to store the time variable data from the past. This inpu is made
to be used for various purposes.
T
139. Data warehouse has to be ready for somewhat unexpected loads and types of queries, which demands a significant degree of flexibility and quick response time
T
140. Business users require a data warehouse to view summarized data from the past, th data
may be presented to them in an elementary form
T
141. Some strategies may be depending upon the data in the data warehouse. So, data warehouse
contributes to making strategic decisions.
يساهم T
142. Business users require a data warehouse to view summarized data from the past
A. Business User
B. Store historical data
C. Make strategic decisions
D. High response time
143. Data warehouse has to be ready for somewhat unexpected loads and types of queries
A. Store historical data
B. High response time
C. Business User
D. All Above
144. Data warehouse Doesn't support strategic decisions.
F support
145. Data from operational database and external sources are extracted using applicatio program
interfaces called Gateway.
T
146. Data Warehouse is needed for the following reasons
A. Business User
B. Store historical data
C. High response time
D. All Above
147. Data Warehouse used to. Understand business trends and make better forecasting decisions.
T
ضخم
148. Data Warehouses are designed to perform well enormous amounts of data
T

149. The structure of data warehouses is more inaccessible for end-users
F more accessible
150. Queries that would be complex in many normalized databases could be Complex to build
and maintain in data warehouses
F easier
151. Data warehousing is a bad method to manage demand for lots of information from lots of
users.
F efficient
152. Data warehousing provide the capabilities to analyze a large amount of historical data
T
153. Many organizations are creating data warehouse to support business decision-making
activities to increasing customer focus, which includes the analysis of customer buying patterns.
T