



قواعد البيانات – CPIT240

نماذج أسئلة اختبار و تدريبات



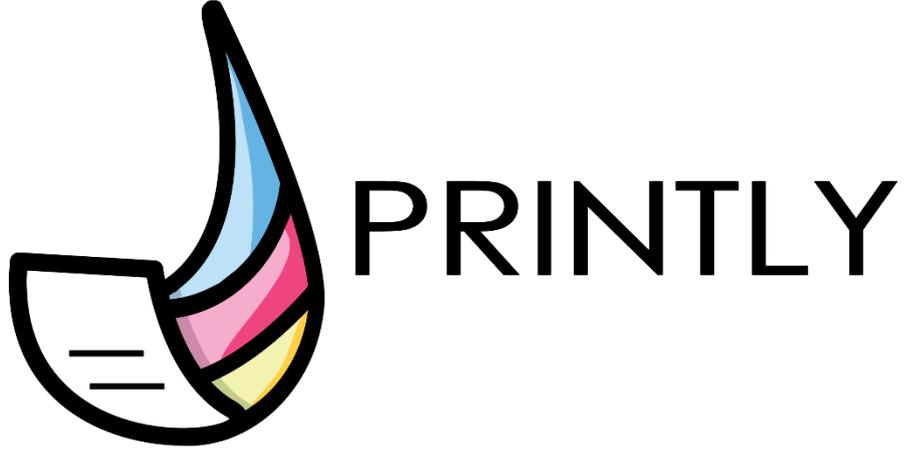
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فلا تضيع أمانتك

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لا تحط كل اعتمادك على الملزمة نهائيًا

هشام محمود تعباني

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Chapter 1: Databases and database Users

Part one: Answer the following questions by true (√) or false (X):

#Question	Statement	Answer
1	Multimedia Database is a traditional application	
2	A database is a logically coherent collection of data with some inherent meaning	
3	Database Management System facilitate the creation and maintenance of a computerized database.	
4	Transaction access different parts of data and formulate the result of a request.	
5	One of the main characteristics of the Database Approach is to support of multiple views of the data	
6	A database is designed, built, and populated with data for a specific purpose.	
7	A database represents some aspect of the real world, sometimes called the Mini-world or the universe of discourse (DoD).	
8	System Analysts They understand the user requirements of naïve and sophisticated users and design applications including canned transactions to meet those requirements.	
9	Application Programmers Implement the specifications developed by analysts and test and debug them before deployment	
10	Business Analysts: There is an increasing need for such people who can analyze vast amounts of business data and real-time data ("Big Data") for better decision making related to planning, advertising, marketing etc.	
11	System Analysts and Application Developers This category currently accounts for a very large proportion of the IT work force.	
12	Applications must not allow unauthorized users to access data	
13	Applications must keep up with changing user requirements against the database	
14	Applications interact with a database by generating Queries and Transactions	
15	DBMS may provide Protection or Security measures to prevent unauthorized access	
16	DBMS may provide "Active" processing to take internal actions on data	
17	DBMS may provide Presentation and Visualization of data	
18	DBMS may provide Maintenance of the database and associated programs over the lifetime of the database application	

19	DBMS <i>Define</i> a particular database in terms of its data types, structures, and constraints	
20	DBMS <i>can Manipulating</i> the database: Retrieval: Querying, generating reports, Modification: Insertions, deletions and updates to its content, Accessing the database through Web applications	
21	Those who develop and maintain database applications called "Actors on the Scene"	
22	Those who develop and maintain database applications called "Workers Behind the Scene"	
23	Those who design and develop the DBMS software and related tools, and the computer systems operators called "Workers Behind the Scene"	
24	A data model is used to hide storage details and present the users with a conceptual view of the database	
25	In Data Abstraction Programs refer to the data model constructs rather than data storage details	
26	Some newer systems such as a few NOSQL systems need no meta-data: they store the data definition within its structure making it self-describing	
27	Insulation between programs and data allow Allows changing data structures and storage organization without having to change the DBMS access programs	
28	A data model is used to hide storage details and present the users with a conceptual view of the database	
29	One of the main Characteristics of the Database is Supporting of multiple views of the data	
30	One of the main Characteristics of the Database is Sharing of data and multi-user transaction processing	
31	End Users They use the data for queries, reports and some of them update the database content	
32	Stand-alone Mostly maintain personal databases using ready-to-use packaged applications	
33	Sophisticated These include business analysts, scientists, engineers, others thoroughly familiar with the system capabilities	

Part Two: choose the correct answer for the following questions:

1- One of the main Characteristics of the Database is Self-describing nature of a database system which is called:

- A- Meta-data.
- B- Structures
- C- Constraint.
- D- Entity

- 2- Database administrators Responsible for:
- A- Implement the specifications that is developed.
 - B- Authorizing access to the database
 - C- Define the content and constraints.
 - D- None of the above
- 3- Advantages of Using the Database:
- A- Providing backup and recovery services.
 - B- Enforcing integrity constraints on the database
 - C- Providing multiple interfaces.
 - D- All the above
- 4- Extremely important for on-line transaction systems such as shopping:
- A- Economies of scale.
 - B- Participations
 - C- Availability of current information
 - D- Flexibility to change data structures
- 5- Known facts that can be recorded and have an implicit meaning:
- A- Data.
 - B- Implementation Data Model
 - C- Conceptual Data
 - D- Data Model
- 6- A large amount of data now resides on the "cloud" which means it is in huge data centers using thousands of machines:
- A- Cloud.
 - B- Backup
 - C- Big Data
 - D- Data Centre
- 7- A collection of related data:
- A- Data.
 - B- DBMS
 - C- Database
 - D- Database System
- 8- A software system to facilitate the creation and maintenance of a computerized database:
- A- Data.
 - B- DBMS
 - C- Database
 - D- Database System
- 9- May additionally provide: Protection or Security measures to prevent unauthorized access:
- A- DBMS.
 - B- Database Administrators
 - C- End Users
 - D- Database Designers
- 10- That May Read Some Data And "Update" Certain Values or Generate New Data and Store That in The Database:
- A- Queries.
 - B- Transactions
 - C- Data Analysis
 - D- Database Administrators

11- They understand the user requirements of naïve and sophisticated users and design applications including canned transactions to meet those requirements:

- A- System Analysts.
- B- Application Programmers
- C- Business Analysts
- D- Database Administrators

12- Implement the specifications developed by analysts and test and debug them before deployment:

- A- System Analysts.
- B- Application Programmers
- C- Business Analysts
- D- Database Administrators

13- There is an increasing need for such people who can analyze vast amounts of business data and real-time data ("Big Data") for better decision making related to planning, advertising, marketing:

- A- System Analysts.
- B- Application Programmers
- C- Business Analysts
- D- Database Administrators

14- That Access Different Parts of Data and Formulate the Result of a Request:

- A- Queries.
- B- Transactions
- C- Data Analysis
- D- Database Administrators

15- DBMS may additionally provide:

- A- Protection or Security measures to prevent unauthorized access
- B- "Active" processing to take internal actions on data
- C- Presentation and Visualization of data
- D- All of the above

16- One of the main Characteristics of the Database is Insulation between programs and data which is called:

- A- Meta-data.
- B- Constraint
- C- Structures.
- D- Program-data independence

17- Design and implement DBMS packages in the form of modules and interfaces and test and debug them:

- A- System Designers and Implementors.
- B- Tool Developers
- C- Operators and Maintenance Personnel
- D- Database Designer

18- They manage the actual running and maintenance of the database system hardware and software environment:

- A- System Designers and Implementors.
- B- Tool Developers
- C- Operators and Maintenance Personnel
- D- Database Designer

19- Design and implement software systems called tools for modeling and designing databases, performance monitoring, prototyping, test data generation, user interface creation, simulation:

A- System Designers and Implementors.

B- Tool Developers

C- Operators and Maintenance Personnel

D- Database Designer

Part Three: Writing Questions:

1- What is the meaning of Traditional Applications?

2- Give examples of Recent Applications?

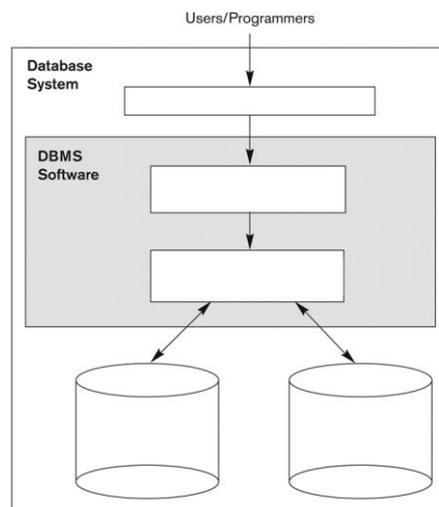
3- Define Database and Data?

4- Define Mini World?

5- Define DBMS?

6- Give 2 examples of Education and Business that we use database on it?

7- Fill a diagram for the Simplified database system environment and properly write the names of the components on this diagram?



8- What is the difference between Database administrators and Database Designers?

9- When a DBMS may be unnecessary?

10- When a DBMS may be infeasible?

- 11- What DBMS may be provide?
- 12- Give an example of mini world with their Entities and their Relationship?
- 13- Database users may be dived into _____ and _____ .
- 14- What is the Difference between Workers Behind the Scene and Actors on the Scene ?
- 15- What dose OLTP Stand for? And write about it?
- 16- One of the main Characteristics of the Database is **Sharing of data and multi-user transaction processing**, can you explain it?
- 17- End Users can be categorized into _____ and _____.
- 18- What does Casual user and Naïve do?
- 19- Give some examples of Stand-alone?
- 20- List some advantages of Using Database?
- 21- List When not to use A DBMS?

Answers

Part one: T/F

#Questions	Answer
1	X
2	√
3	√
4	X
5	√
6	√
7	√
8	√
9	√
10	√
11	√
12	√
13	√

#Questions	Answer
14	√
15	√
16	√
17	√
18	√
19	√
20	√
21	√
22	X
23	√
24	√
25	√
26	√

#Questions	Answer
27	√
28	√
29	√
30	√
31	√
32	√
33	√

Part Two: MCQ

#Questions	Answer
1	A
2	B
3	D
4	C
5	A
6	A
7	C
8	B
9	A
10	B

#Questions	Answer
11	A
12	B
13	C
14	A
15	D
16	D
17	A
18	C
19	B

Part Three: Writing

#Questions	Answer
1	Numeric and Textual Databases
2	Multimedia Databases, Geographic Information Systems (GIS), Biological and Genome Databases, Data Warehouses, Mobile databases, Real-time and Active Databases
3	<p>Database: A collection of related data.</p> <p>Data: Known facts that can be recorded and have an implicit meaning.</p>
4	<p>Some part of the real world about which data is stored in a database. For example, student grades and transcripts at a university</p> <p>A database represents some aspect of the real world, sometimes called the mini world or the universe of discourse (UoD).</p>
5	A software package/ system to facilitate the creation and maintenance of a computerized database
6	<p>Businesses: Banking, Insurance, Retail, Transportation, Healthcare, Manufacturing</p> <p>Education: Resources for content and Delivery</p>
7	
8	<p>Database administrators: Responsible for authorizing access to the database, for coordinating and monitoring its use, acquiring software and hardware resources, controlling its use and monitoring efficiency of operations.</p> <p>Database Designers: Responsible to define the content, the structure, the constraints, and functions or transactions against the database. They must communicate with the end-users and understand their needs.</p>
9	<ul style="list-style-type: none"> • If the database and applications are simple, well defined, and not expected to change. • If access to data by multiple users is not required.
10	In embedded systems where a general-purpose DBMS may not fit in available storage
11	<ul style="list-style-type: none"> • Protection or Security measures to prevent unauthorized access • “Active” processing to take internal actions on data • Presentation and Visualization of data • Maintenance of the database and associated programs over the lifetime of the database application

12	<p>Part of a UNIVERSITY environment.</p> <p>Entities:</p> <ul style="list-style-type: none"> • STUDENTs • COURSEs • SECTIONs (of COURSEs) • (academic) DEPARTMENTs • INSTRUCTORs <p>Relationships:</p> <ul style="list-style-type: none"> • SECTIONs are of specific COURSEs • STUDENTs take SECTIONs • COURSEs have prerequisite COURSEs • INSTRUCTORs teach SECTIONs • COURSEs are offered by DEPARTMENTs • STUDENTs major in DEPARTMENTs
13	Database users may be divided into <u>Actors on the Scene</u> and <u>Workers Behind the Scene</u> .
14	<p>Workers Behind the Scene: Those who design and develop the DBMS software and related tools, and the computer systems operators</p> <p>Actors on the Scene: those who design, develop and maintain database applications</p>
15	OLTP Stand for Online Transaction Processing, is a major part of database applications. This allows hundreds of concurrent transactions to execute per second
16	Allowing a set of concurrent users to retrieve from and to update the database.
17	End Users can be categorized into <u>Casual</u> and <u>Naive</u> .
18	<p>Casual: access database occasionally when needed</p> <p>Naive or Parametric: they make up a large section of the end-user population</p>
19	<p>An example is the user of a tax program that creates its own internal database.</p> <p>Another example is a user that maintains a database of personal photos and videos</p>
20	<p>Providing optimization of queries for efficient processing.</p> <p>Providing backup and recovery services.</p> <p>Reduced application development time</p> <p style="text-align: center;">Go back to your slides to see the other answers</p>
21	<ul style="list-style-type: none"> • Main inhibitors (costs) of using a DBMS: <ul style="list-style-type: none"> ○ High initial investment and possible need for additional hardware. ○ Overhead for providing generality, security, concurrency control, recovery, and integrity functions. • If there are stringent real-time requirements that may not be met because of DBMS overhead (e.g., telephone switching systems) • If the database system is not able to handle the complexity of data because of modeling limitations (e.g., in complex genome and protein databases) • If the database users need special operations not supported by the DBMS (e.g., GIS and location based services).