“Databases and DB Management Systems”
Online Course

Midterm Exam

True/False
Indicate whether the sentence or statement is true or false.

____ 1. A record is a single set of related fields in a table.
____ 2. To start Microsoft Access, click the start button, select programs, and then click Microsoft Access.
____ 3. The final outcome of a natural JOIN yields a table that provides only the copies of the un-matched pair.
____ 4. In a relational table, each table must have an attribute or a combination of attributes that uniquely identifies each row.
____ 5. In a relational table, each row/column intersection represents a single data value.
____ 6. The conceptual model is the basis for the description of the main data objects, avoiding details.
____ 7. Attributes do not have a domain.
____ 8. Designing databases without first constructing carefully considered data models that are represented by ERDs is inadvisable.
____ 9. A determinant is any attribute whose value determines other values within a row.
____ 10. A database language must enable the user to create database and table structures to perform basic data management chores.
____ 11. A database language must enable the user to perform complex queries designed to transform the raw data into useful information.
____ 12. Microsoft Access users can use Access QBE (query by example) query generator.
____ 13. SQL allows the use of logical restrictions on its inquiries such as OR, AND, AND NOT.
____ 14. In the detailed system design, the steps are laid out for conversion from the old to the new system.
____ 15. Because every request for structural changes requires retracing the SDLC steps, the system is always at some stage of the SDLC.
____ 16. The advent of very sophisticated application generators and debugging tools has substantially increased coding and testing time.
____ 17. Data integrity is enforced through the proper use of primary and foreign key rules.
____ 18. The database initial study must be accurate, but detail is not essential.
____ 19. University Computer Lab's Business Rule 1 states that each item belongs to only one inventory type, and each inventory type may have zero, one, or many items belonging to it.
____ 20. University Computer Lab's Business Rule 2 states that an item may not be placed in use upon its arrival; it must be stored.
____ 21. The verification process leads to modifications in the initial E-R model.
22. As the revised model is developed, designers must keep in mind the often conflicting requirements of design elegance, information requirements, and processing speed.

23. If you use Visio or any similar CASE tool to design the database, you only create an entity's PK attribute at the entity level if its relationship to its parent is defining.

24. In a composite primary key based on the fields LOG_DATE, LOG_TIME, and LOG_READER, it is assumed that it is possible for any magnetic card reader to record the same time (to the second) for more than one entry.

25. Concurrent use of design and normalization reflects real-world practice.

**Multiple Choice**

*Identify the letter of the choice that best completes the statement or answers the question.*

26. Of the languages listed below, which is **NOT** considered a third generation language (3GL)?
   a. Common Business-Oriented Language (COBOL)
   b. Beginner's All-purpose Symbolic Instruction Code (BASIC)
   c. Report Program Generator (RPG)
   d. FORmula TRANslation (FORTRAN)

27. Of the following, what is **NOT** considered Data Anomalies?
   a. Inconsistency
   b. Modified
   c. Insertion
   d. Deletion

28. DBMS performs several important functions that guarantee the integrity and consistency of the data in the database. Which of the following is **NOT** one of those functions?
   a. Multiuser access control
   b. Data integrity management
   c. Database access languages
   d. End of month reports

29. The Hierarchical database model is based on
   a. tree structure.
   b. lack of a parent segment.
   c. lack of a child segment.
   d. none of the above

30. An ad hoc query is
   a. a pre-scheduled question.
   b. a spur of the moment question.
   c. a pre-planned question.
   d. none of the above
31. Database models were developed to
   a. address the file system's inherent weaknesses.
   b. deposit data within a single file.
   c. keep data within multiple data repository.
   d. allow DBMS to maintain loose control over the database activities.

32. John is working in the customer table and needs to know what customers are located in Florida. To find the information he would
   a. create a new table.
   b. create a new form.
   c. create a new query.
   d. utilize the Database Wizard.

33. Each table must have
   a. a primary key.
   b. a secondary key.
   c. a foreign key.
   d. a logical key.

34. In a sophisticated application development software, nulls can create problems when using functions such as
   a. count
   b. average
   c. sum
   d. a & c
   e. a b & c

35. Successful database design is first and foremost based on _____________ requirements.
   a. designer
   b. programmers
   c. end-user
   d. business

36. A table that displays data redundancies yields the following anomalies:
   a. update anomalies
   b. insertion anomalies
   c. deletion anomalies
   d. all of the above
   e. none of the above

37. A table that is in 1NF and includes no partial dependencies only is said to be in
   a. 1NF.
   b. 2NF.
   c. 3NF.
   d. 4NF.
   e. BCNF.
38. A table that is in 2NF and contains no transitive dependencies is said to be in
   a. 1NF.
   b. 2NF.
   c. 3NF.
   d. 4NF.
   e. BCNF.

39. The SQL command that lets you insert data into a table, one row at a time, is
   a. insert.
   b. select.
   c. commit.
   d. update.
   e. rollback.

40. The SQL command that enables you to make changes in the data is
   a. insert.
   b. select.
   c. commit.
   d. update.
   e. rollback.

41. In a query command to list all the rows in which the inventory stock dates occur on or after January, 2003
    using XDB, OS/2 EE Database Manager, or IBM's main frame DB2, the command will be as follows
   a. SELECT P_DESCRIP, P_HAND, P_MIN, P_PRICE, P_INDATE
      FROM PRODUCT
      WHERE P_INDICATE >= '01/20/2002'
   b. SELECT P_DESCRIP, P_HAND, P_MIN, P_PRICE, P_INDATE
      FROM PRODUCT
      WHERE P_INDICATE >= #01/20/2002#
   c. SELECT P_DESCRIP, P_HAND, P_MIN, P_PRICE, P_INDATE
      FROM PRODUCT
      WHERE P_INDICATE >= '20-JAN-2002'
   d. SELECT P_DESCRIP, P_HAND, P_MIN, P_PRICE, P_INDATE
      FROM PRODUCT
      WHERE P_INDICATE >= {01-20-2002}
42. Using the data in the EMP table, how would a list of all employees with their manager's names be generated?

a. SELECT P_DESCRIPT, P_PRICE, V_NAME, V_CONTACT, V_AREA, V_PHONE
   FROM PRODUCT, VENDOR
   WHERE PRODUCT.V_CODE <> VENDOR.V_CODE;
   ORDER BY P_PRICE;

b. SELECT P_DESCRIPT, P_PRICE, V_NAME, V_CONTACT, V_AREA, V_PHONE
   FROM PRODUCT, VENDOR
   WHERE PRODUCT.V_CODE => VENDOR.V_CODE;
   ORDER BY P_PRICE;

c. SELECT P_DESCRIPT, P_PRICE, V_NAME, V_CONTACT, V_AREA, V_PHONE
   FROM PRODUCT, VENDOR
   WHERE PRODUCT.V_CODE <= VENDOR.V_CODE;
   ORDER BY P_PRICE;

d. SELECT P_DESCRIPT, P_PRICE, V_NAME, V_CONTACT, V_AREA, V_PHONE
   FROM PRODUCT, VENDOR
   WHERE PRODUCT.V_CODE = VENDOR.V_CODE;
   ORDER BY P_PRICE;

43. The coding, testing, and debugging are part of the

a. planning phase.

44. The installation and fine tuning are part of the

a. planning phase.

45. The purpose of the database initial study is to

a. analyze the company situation.

b. define problems and constraints.

c. define objectives.

d. define scope and boundaries.

e. all of the above
46. Installing the DBMS, creating the database, and loading or converting the data are part of the
   a. database initial study phase.
   b. database design phase.
   c. implementation and loading phase.
   d. testing and evaluation phase.
   e. operation phase.

47. In spite of the fact that we sometimes are forced to revise an E-R diagram it is still possible that:
   a. Some of the relationships are not clearly identified and may have been misidentified.
   b. The model contains design redundancies.
   c. a only
   d. a and b
   e. b only

48. In spite of the fact that we are sometimes forced to revise an E-R diagram it is still possible that:
   a. The model can be enhanced to improve semantic precision and to better represent the
      operation in the real-world.
   b. The model must be modified to better meet the user requirements such as processing
      performance or security.
   c. a only
   d. a and b
   e. b only

49. Several indexes can be created to improve access time, such as
   a. indexes created for all primary keys will increase access speed when a foreign key
      references in tables is made.
   b. indexes can also be created for all alternate search keys.
   c. indexes can be created for all columns used in the WHERE, ORDER BY, and GROUP
      BY clauses of a SELECT statement.
   d. a and b
   e. a, b and c

50. The DBA’s responsibilities should include:
   a. marketing the database to the organization’s users.
   b. ensuring completion of database projects within time and budget constraints.
   c. a only
   d. a and b
   e. b only
Complete each sentence or statement.

51. "Raw" facts, such as telephone number, birth date, a customer name are also referred as ____________________.

52. Date attributes contain calendar dates stored in a special format known as ____________________ date format.

53. Database designers employ data models as ____________________ tools to facilitate the interaction among designer, the applications programmer, and the user.

54. The external model is based on the ____________________ model.

55. A(n) __________________attribute is an attribute that can be further subdivided to yield additional attributes.

56. Cardinality expresses the _________________ number of entity occurrences associated with one occurrence of the related entity.

57. The Crow's Foot, Rein85, and IDEFIX models are more easily adapted to ____________________ tools than the Chen model.

58. Converting a database format from 1NF to 2NF is very ____________________.

59. A table is in Boyce-Codd normal form (BCNF) if every determinant in the table is a(n) ____________________ key.

60. A query command to list all the rows in which the inventory stock dates occur on or after January 20, 2003 will look like this:

   SELECT P_DESCRIP, P_HAND, P_MIN, P_PRICE, P_INDATE
   FROM PRODUCT
   WHERE P_INDICATE >= '20-JAN-2002'

This command was written for a(n) ____________________ database.

61. The _________________ phase includes creating the database storage structure, loading data into the database, and providing for data management.

62. Implementation is one of the traditional _________________ phases.

63. After testing is concluded, the final ___ is reviewed and printed, and end users are trained.

64. From a database point of view, the collection of data becomes meaningful only when the business _________________ are defined.

65. One of the user requirements is that the system must provide security measures by using _________________ and access rights.

66. One of the University Computer Lab's systems processes function is the _________________ process that tracks the UCL's usage rate.

67. Verification represents the _________________ between the database modeling-and-design activities and the database applications design.

68. If you use Visio or any similar CASE tool to design the database, you only create an entity's PK attribute at the entity level if its relationship to its parent is _________________.

69. In the ________________ design phase, the designer can specify appropriate indexes to enhance operational speed.

70. Physical storage characteristics are a function of the ________________ and the operating system being used.

71. More recent versions of relational DBMS software ________________ most of the complexities inherent in the physical design phase.

72. The database designer must make decisions that affect data access time by fine-tuning the ________________ pool size, and the page frame size.

73. As organizations becomes increasingly internet-oriented, most of the database transaction interfaces tend to become ________________ Interfaces.

74. Several databases may exist within a database environment. Each database must have its own set of system ________________, and must be evaluated in terms of how it fits into the organization's information system.

75. A database that is acceptable today may not be acceptable years from now because of rapidly changing ________________ needs.

**Essay**

76. What are some of the DBMS functions?

77. Describe date attributes, and its storage.