UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2017

COURSE NO: CE 279
COURSE NAME: **DATABASE SYSTEMS**
CLASS: CE II **TIME:** 1 HR 30 MIN

Name**:** _____Index Number: _____

Instruction: In this SECTION (Questions 1-60), choose the correct answer among the options provided. Answer all questions on this paper.

1. In the _____ normal form, a composite attribute is converted to individual attributes.
   a. First
   b. Second
   c. Third
   d. Fourth
2. A table on the many side of a one to many or many to many relationships must:
   a. Be in Second Normal Form (2NF)
   b. Be in Third Normal Form (3NF)
   c. Have a single attribute key
   d. Have a composite key
3. Tables in second normal form (2NF):
   a. Eliminate all hidden dependencies
   b. Eliminate the possibility of a insertion anomalies
   c. Have a composite key
   d. Have all non-key fields depend on the whole primary key
4. Functional Dependencies are the types of constraints that are based on_____
   a. Key
   b. Key revisited
   c. Superset key
   d. None of these
5. Which is a bottom-up approach to database design that design by examining the relationship between attributes:
   a. Functional dependency
   b. Database modeling
   c. Normalization
   d. Decomposition
6. Which forms simplifies and ensures that there is minimal data aggregates and repetitive groups:
   a. 1NF
   b. 2NF
   c. 2NF
   d. All the mentioned
7. Which forms are based on the concept of functional dependency?
   a. 1NF
   b. 2NF
   c. 3NF
   d. 4NF
8. Empdt1(empcode, name, street, city, state, pincode). For any pincode, there is only one city and state. Also, for given street, city and state, there is just one pincode. In normalization terms, empdt1 is a relation in

a. 1 NF only
b. 2 NF and hence also in 1 NF
c. 3NF and hence also in 2NF and 1NF
d. BCNF and hence also in 3NF, 2NF and 1NF

9. Which of the following gives a logical structure of the database graphically?
   a. Entity-relationship diagram
   b. Entity diagram
   c. Database diagram
   d. Architectural representation
10. The entity relationship set is represented in E-R diagram as
   a. Double diamonds
   b. Undivided rectangles
   c. Dashed lines
   d. Diamond
11. Consider a directed line (→) from the relationship set advisor to both entity sets instructor and student. This indicates _____ cardinality
   a. One to many
   b. One to one
   c. Many to many
   d. Many to one
12. We indicate roles in E-R diagrams by labeling the lines that connect _____to _____.
   a. Diamond, diamond
   b. Rectangle, diamond
   c. Rectangle, rectangle
   d. Diamond, rectangle
13. An entity set that does not have sufficient attributes to form a primary key is termed a _____.
   a. Strong entity sets
   b. Variant set
   c. Weak entity sets
   d. Variable set
14. For a weak entity set to be meaningful, it must be associated with another entity set, called the
   a. Identifying set
   b. Owner set
   c. Neighbor set
   d. Strong entity sets
15. Weak entity set is represented as
   a. Underline
   b. Double line
   c. Double diamond
   d. Double-rectangle
16. If you were collecting and storing information about your music collection, an album would be considered a(n) _____.
   a. Relation
   b. Entity
   c. Instance
   d. Attribute
17. What term is used to refer to a specific record in your music database; for instance; information stored about a specific album?
   a. Relation
   b. Instance
   c. Table
   d. Column

18. Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record?

    a. Candidate key
    c. Super key
    b. Sub key
    d. Foreign key

19. The subset of super key is a candidate key under what condition?

    a. No proper subset is a super key
    c. Subset is a super key
    b. All subsets are super keys
    d. Each subset is a super key

20. A _____ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique.

    a. Rows
    c. Attribute
    b. Key
    d. Fields

21. Which one of the following attribute can be taken as a primary key?

    a. Name
    c. Id
    b. Street
    d. Department

22. Which one of the following cannot be taken as a primary key?

    a. Id
    c. Dept_id
    b. Register number
    d. Street

23. An attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation.

    a. Candidate
    c. Super
    b. Primary
    d. Sub

24. The relation with the attribute which is the primary key is referenced in another relation. The relation which has the attribute as primary key is called

    a. Referential relation
    c. Referenced relation
    b. Referencing relation
    d. Referred relation

25. The _____ is the one in which the primary key of one relation is used as a normal attribute in another relation.

    a. Referential relation
    c. Specific
    b. Referencing relation
    d. Primary

26. A _____ integrity constraint requires that the values appearing in specified attributes of any tuple in the referencing relation also appear in specified attributes of at least one tuple in the referenced relation.

    a. Referential
    c. Specific
    b. Referential
    d. Primary

27. Consider money is transferred from (1) account-A to account-B and (2) account-B to account-A. Which of the following form a transaction?
    a. Only 1
    b. Only 2
    c. Both 1 and 2 individually
    d. Either 1 or 2
28. A transaction is delimited by statements (or function calls) of the form _____.
    a. Begin transaction and end
    b. Start transaction and stop transaction
    c. Get transaction and post transaction
    d. Read transaction and write transaction
29. Identify the characteristics of transactions
    a. Atomicity
    b. Durability
    c. Isolation
    d. All of the mentioned
30. Which of the following has "all-or-none" property?
    a. Atomicity
    b. Durability
    c. Isolation
    d. All of the mentioned0
31. The database system must take special actions to ensure that transactions operate properly without interference from concurrently executing database statements. This property is referred to as
    a. Atomicity
    b. Answer
    c. Isolation
    d. All of the mentioned
32. The property of transaction that persists all the crashes is
    a. Atomicity
    b. Durability
    c. Isolation
    d. All of the mentioned
33. _____ states that only valid data will be written to the database.
    a. Consistency
    b. Atomicity
    c. Durability
    d. Isolation
34. Transaction processing is associated with everything below except
    a. Producing detail summary or exception reports
    b. Recording a business activity
    c. Confirming an action or triggering a response
    d. Maintaining a data
35. The Oracle RDBMS uses the ____ statement to declare a new transaction start and its properties.
    a. BEGIN
    b. SET TRANSACTION
    c. BEGIN TRANSACTION
    d. COMMIT
36. ____ means that the data used during the execution of a transaction cannot be used by a second transaction until the first one is completed
    a. Consistency
    b. Atomicity

c. Durability
d. Isolation

37. The total participation by entities is represented in E-R diagram as
    a. Dashed line
    b. Double line
    c. Double rectangle
    d. Circle

38. Given the basic ER and relational models, which of the following is INCORRECT?
    a. An attribute of an entity can have more than one value
    b. An attribute of an entity can be composite
    c. In a row of a relational table, an attribute can have more than one value
    d. In a row of a relational table, an attribute can have exactly one value or a NULL value

39. Which of the following indicates the maximum number of entities that can be involved in a relationship?
    a. Minimum cardinality
    b. Maximum cardinality
    c. ERD
    d. Greater Entity Count

40. In E-R diagram generalization is represented by
    a. Ellipse
    b. Dashed ellipse
    c. Rectangle
    d. Triangle

41. What is a relationship called when it is maintained between two entities?
    a. Unary
    b. Binary
    c. Ternary
    d. Quaternary

42. Which of the following is a low-level operator?
    a. Insert
    b. Update
    c. Delete
    d. Durability

43. Key to represent relationship between tables is called
    a. Primary key
    b. Secondary Key
    c. Foreign Key
    d. None of the mentioned

44. A window into a portion of a database is
    a. Schema
    b. View
    c. Query
    d. Data dictionary

45. A primary key is combined with a foreign key creates

a. Parent-Child relationship between the tables that connect them
b. Many to many relationship between the tables that connect them
c. Network model between the tables that connect them
d. None of the mentioned

46. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas?
a. DML(Data Manipulation Langauge
b. DDL(Data Definition Langauge)
c. Query
d. Relational Schema

47. Which one of the following provides the ability to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database?
a. DML(Data Manipulation Langauge)
b. DDL(Data Definition Langauge)
c. Query
d. Relational Schema

48. Create table employee (name varchar, id integer). What type of statement is this?
a. DML
b. DDL
c. View
d. Integrity constraint

49. Select * from employee. What type of statement is this?
a. DML
b. DDL
c. View
d. Integrity constraint

50. The basic data type char(n) is a _____ length character string and varchar(n) is _____ length character.
a. Fixed, equal
b. Equal, variable
c. Fixed, variable
d. Variable, equal

51. An attribute A of datatype varchar(20) has the value “Avi” . The attribute B of datatype char(20) has value ”Reed” .Here attribute A has ____ spaces and attribute B has ____ spaces .
a. 3, 20
b. 20, 4
c. 20, 20
d. 3, 4

52. To remove a relation from an SQL database, we use the _____
a. Delete
b. Purge
c. Remove
d. Drop table

53. Delete from r; r – relation
This command performs which of the following action?
a. Remove relation
b. Clear relation entries
c. Delete fields
d. Delete rows

54. Insert into instructor values (10211, ’Smith’, ’Biology’, 66000);
What type of statement is this?

a. Query
c. Relational
b. DML
d. DDL

55. Updates that violate _____ are disallowed.

a. Integrity constraints
c. Authorization
b. Transaction control
d. DDL constraints

56. Dates must be specified in the format

a. mm/dd/yy
c. dd/mm/yy
b. yyyy/mm/dd
d. yy/dd/mm

57. An _____ on an attribute of a relation is a data structure that allows the database system to find those tuples in the relation that have a specified value for that attribute efficiently, without scanning through all the tuples of the relation.

a. Index
c. Assertion
b. Reference
d. Timestamp

58. Create index studentID_index on student(ID); Here which one denotes the relation for which index is created?

a. StudentID_index
c. StudentID
b. ID
d. Student

59. Which of the following is used to store movie and image files ?

a. Clob
c. Binary
b. Blob
d. Image

60. The user defined data type can be created using

a. Create datatype
c. Create definetype
b. Create data
d. Create type

Examiner: E. Effah

GOODLUCK