CS304-OOP
MIDTERM TERM MCQS
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1. **Which is not the function of Database Management System?**
   a. A user accessible Catalog
   b. Concurrency Control Services
   c. Failure Response Service
   d. Support for Data Communication

2. **The conceptual database design can be transformed into any _____.**
   a. Data model
   b. Database design
   c. E-R model
   d. Entity set

3. **Which is the second stage in the database development process?**
   a. Database design
   b. Preliminary Study
   c. Physical Design
   d. Requirement Analysis

4. **Functional dependencies under interference rule reflexivity are called _____ dependencies.**
   a. Augmentation
   b. Transitivity
   c. Projectivity
   d. Trivial

5. **If many instances of the "Book" entity are associated with the many instances of the "Student" entity, then the relationship between them is:**
   a. One to one
   b. One to many
   c. Many to many
   d. Many to one

6. **Which of the following constraints enforces entity integrity?**
   a. PRIMARY KEY
   b. FOREIGN KEY
   c. CHECK
   d. NOT NULL

7. Unary operations involves
   a. **Only one relation**
   b. Only two relations
   c. More than two relations
   d. Not more than five relations

8. A _____ entity has a primary key that is partially or totally derived from the parent entity in the relationship.
   a. Strong
   b. **Weak**
   c. Business
   d. Relationship

9. In _____ appropriate data model is chosen.
   a. ERD
   b. Conceptual Database Design
   c. **Logical Database Design**
   d. DFA

10. Which of the following is drawback of standardization?
   a. Difficult to understand
   b. Uniformity
   c. **Lack of uniqueness**
   d. Easy to develop applications

11. Recursive relationship is also called _____.
   a. **Unary**
   b. Ternary
   c. Primary
   d. Secondary

12. The foreign key attribute, which is present as a primary key in another relation is called as
   _____ of the foreign key attribute.
   a. Binary relation
   b. Composite relation
   c. **Home relation**
   d. Recursive relation

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13.   <mark>DFD</mark> does not provide us a way to represent _____
   a. Entities
   b. <mark>Decisions   AL-JUNAID INSTITUTE OF GROUP</mark>
   c. Date stores
   d. Processes

14.   A _____ is used to maintain a connection between the users of the database system.
   a. Virtual server
   b. <mark>File server</mark>
   c. Client server
   d. FTP server

15.   Which of the following is an advantage of using the Traditional File Organization?
   a. Time consuming
   b. Data security
   c. <mark>Simplicity</mark>
   d. Efficiency

16.   Which of the following is the input to Analysis Phase?
   a. <mark>DFD</mark>
   b. Logical database design
   c. Physical database design
   d. Data model

17.   Name and _____ are part of the definitions of an attribute.
   a. Domain
   b. Symbol
   c. Property
   d. Entity instance

18.   Which of the following most certainly implies the need for an entire table to implement?
   a. <mark>A ternary relationship</mark>
   b. A recursive relationship
   c. An identify relationship
   d. A binary relationship

19.   Core of the Database Architecture is _____

    a. **Internal level**

    b. External level

    c. Conceptual level

    d. ANSI SPARK

20. _____ is same as equi-join with a slight difference.

    a. **Natural join**

    b. Semi join

    c. Outer join

    d. Theta join

21. Conceptual database design is implemented using a _____.

    a. Hierarchical data model

    b. **Semantic data model   AL-JUNAID INSTITUTE OF GROUP**

    c. Relational data model

    d. Network data model

22. Which constraint is generally used for efficiency purposes in the data entry process?

    a. Null value

    b. Integer value

    c. **Default value**

    d. String value

23. A 3 NF relation is converted to BCNF by

    a. Removing composite keys

    b. Removing multivalued dependencies

    c. **Dependent attributes of overlapping composite keys are put in a separate relation**

    d. Dependent non-key attributes are put in a separate table

24. Each _____ of a table contains atomic/single value.

    a. **Cell**

    b. Row

    c. Column

    d. Record

25. A relation is said to be in BCNF when

    a. It has overlapping composite keys

b. It has no composite keys

c. It has no multivalued dependencies

d. <mark>It has no overlapping composite keys which have related attributes</mark>

26. Which one of the following is not a part of three-level architecture?

a. External level

b. Conceptual level

c. Internal level

d. <mark>Physical level</mark>

27. Which of the following is INCORRECT about naming entities?

a. Singular nouns are used

b. Write in capitals

c. Organization specific names can be used

d. <mark>Always use abbreviations as they are convenient</mark>

28. An instance is

a. A particular occurance of an entity

b. A special type of relation

c. An attribute of an entity

d. <mark>Any particular entity</mark>   AL-JUNAID INSTITUTE OF GROUP

29. _____ is an example of metadata

a. Ali

b. Address

c. Person

d. <mark>Student</mark>

30. Level of data at which entities or objects exist in reality is called

a. <mark>Real world data</mark>

b. Schema for real world data

c. Meta data

d. Data about data

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31.   There are _____ basic properties of the database relations.
   a. Four
   b. Three
   c. Six
   d. Two

32.   How many types of dependencies are?
   a. One
   b. Two
   c. Three
   d. Four

33.   In _____ join, only selected rows of a relation are made cross product with second relation.
   a. Normal
   b. Theta
   c. Outer
   d. Semi

34.   Which of the following is not a key?
   a. Super key
   b. Alternate key
   c. Integrity constraint key
   d. Primary key

35.   A collection of concepts that can be used to describe the structure of a database
   a. Database
   b. DBMS   AL-JUNAID INSTITUTE OF GROUP
   c. Data model
   d. Data

36.   Any combination of attributes with super key is ____
   a. Primary key
   b. Foreign key
   c. Super key
   d. Candidate key

37.   Binary relationships are those, which are established between

a. One entity type
b. **Two entity type**
c. Three entity type
d. Unlimited entities

38. _____ are called participants, when enrolled in a relationship.
   a. Attributes
   b. Relations
   c. **Entities**
   d. Keys

39. Incase of Context-level Diagram, the system is represented by
   a. One process atleast
   b. Two processes atleast
   c. **One process only**
   d. Any number of processes

40. Collection of raw facts is called _____.
   a. Information
   b. Object
   c. Output
   d. **Data**

41. A software package designed to store and manage database
   a. Database
   b. **DBMS**
   c. Data model
   d. Data

42. In _____ join common attributes appear twice in the output with selected rows.
   a. Normal join
   b. Semi join
   c. Natural join
   d. **Equi join**

43. Within a table, each primary key value _____.
   a. Is a minimal super key
   b. Is always the first field in each table

    c. Must be numeric

    d. Must be unique

44.   _____ is not an operation of relational algebra.

    a. **Addition**   **AL-JUNAID INSTITUTE OF GROUP**

    b. Union

    c. Cartesian product

    d. Set difference

45.   Candidate keys which are not selected as primary key are called _____

    a. Secondary keys

    b. Foreign keys

    c. Alternate keys

    d. Composite keys

46.   Major benefits of data sharing is:

    a. Data of same applications placed at same place.

    b. Data of same applications placed at different places

    c. Data of different application places at same place

    d. Data of different applications stored at placed place

47.   Functional dependency between two attributes or sets of attributes i.e. Q and P is represented as _____.

    a. $Q \rightarrow P$

    b. Q P

    c. Q * P

    d. Q + P

48.   Which of the following is not the component of Relational Data Model?

    a. Integrity Constraint

    b. Manipulation Language

    c. Relation / Table

    d. Domain Constraint

49.   The attribute that is calculated from other attribute is called _____.

    a. Derived attribute

    b. Multi-valued attribute

c. Composite attribute

d. Simple attribute

50. Consider the two attributes "CNIC_NO" and "Registration_NO". Both the attributes can be used for the unique identification. Now if the user selects the "CNIC_NO" as primary key, then "Registration_NO" is a ____ key.

a. Foreign

b. Secondary

c. Primary

d. Alternative

51. Which of the following constraint is included in the definition of the table?

a. Default value

b. Foreign key

c. Null

d. Domain

52. The database deals with large amount of data. This property is called

a. Database design

b. Scalability   AL-JUNAID INSTITUTE OF GROUP

c. Concurrency

d. Robustness

53. Which one of the following is NOT a characteristic of meta data?

a. Data about data

b. Describes a data dictionary

c. Self-describing

d. Includes user data

54. Theta join is denoted mathematically as _____.

a. R X S

b. R X

c. R X Ø S

d. RX RS

55. In cross reference matrix transitions are specified on _____ and database objects are specified on _____.
    a. Y axis, X axis
    b. X axis, Y axis
    c. X axis, X axis
    d. **Y axis, Y axis**

56. Each component of DBMS performs _____ functions.
    a. Similar
    b. **Different**
    c. Identical
    d. Computational

57. Which of the following data model is not record based?
    a. Hierarchical Data Model
    b. Network Data model
    c. **Semantic Data model**
    d. Relational Data model

58. The basic purpose of diamond in ER diagram is to show the _____.
    a. Attributes
    b. **Relationships**
    c. Composite attribute
    d. Entity set   **AL-JUNAID INSTITUTE OF GROUP**

59. Which of the following tool is used to design conceptual database design?
    a. SQL
    b. MS Access
    c. Oracle
    d. **This model is independent of any tool**

60. In "one to many" cardinality one instance of a relation is mapped with _____.
    a. **Many instances of second entity type**
    b. One instance of second entity type
    c. Primary key of second relation
    d. Foreign key of second relation

61. Cross reference matrix is developed at the _____ stage of the database.

    a. Analysis

    b. Designing

    c. Implementation

    d. Application

62. The population of the data of the organization for which the database is created is called the _____ of the database.

    a. Extension

    b. Intension

    c. Model

    d. Schema

63. User rights information is stored in

    a. Physical database

    b. Catalog

    c. Logical database

    d. Buffer

64. Logical data independency provides independency to change _____ model.

    a. External

    b. Logical

    c. Conceptual

    d. Internal

65. In natural join the common attribute in the output table appears _____.

    a. Twice

    b. Three times

    c. Four times

    d. Once

66. Which levels are mostly used for detailed DFD?

    a. Level-0, Level-1

    b. Level-1, Level-2

    c. Level-2, Level-3

      d. Level-3, Level-4

67.   By default, a non-key attribute in a relation can have _____ value.

    a. Binary

    b. Null

    c. Character

    d. Integer

68.   The three levels architecture is useful for _____.

    a. Arranging the data in an organized manner

    b. Hiding the details of internal systems

    c. Breaking the data access restriction

    d. Storing definitions of the structures

69. With the help of _____ technique data values with the smaller sized codes can further

   reduce the space needed by the data for storage in the database.

    a. Compression

    b. Expansions

    c. Negation

    d. Extension

70.   If an entity is linked with itself, than it is called _____ relationship.

    a. Binary

    b. Ternary

    c. Nary

    d. Recursive

71.   Duplication of data in controlled redundancy is controlled and _____.

    a. Deliberate

    b. Necessary

    c. Precise

    d. Unintentional

72.   Teleprocessing is a sub-type of _____.

    a. Single user database

    b. Multi-user database

    c. File server

    d. Client server

73.   In an ERD, the focus is on the **_____** and the relationships between them.

    a. Attributes

    b. Entities

    c. Keys

    d. Indexes

74.   The most widely used conceptual model is the **_____** model.

    a. Implementation

    b. ER

    c. Object oriented

    d. Internal

75.   Student and book are two entities, what is the cardinality between the two?

    a. Many to one

    b. One to many

    c. Many to many

    d. One to one

76.   RDM is a simple there is just one structure and that is **_____**.

    a. A relation or a table

    b. E-R model

    c. Attributes

    d. Data model

77.   A description on a particular collection of data using the given data model.

    a. Database

    b. Relation

    c. Schema

    d. None

78.   Consider thy key "CNIC, Name" and choose the best option that describes the key most effectively.

    a. The given key is a super key and alternate key.

b. The given key is not a super key but a candidate key.

c. **The given key is a super key and candidate key as well.**

d. The given key is a super key but not a candidate key.

79.   Normalization is a process of restricting a relation to

a. **Minimize duplication of data in a database**

b. Maximize duplication of data to ensure reliability

c. Make if of uniform size

d. Allow addition of data

80.   Unary relationship involves a single entity it is also called _____.

   a. One to one relationship

   b. One to many relationship

   c. Many to many relationship

   d. **Recursive relationship**

81.   Which of the following is a part of a DFD but not included in the ERD?

   a. The attribute having a single instance

   b. **The external entity having a single instance**

   c. The relationship having a single instance

   d. The role having a single instance

82.   The database management system (DBMS) is used to

   a. Store the data

   b. Access the data

   c. Manage its users

   d. **All of above**

83.   In cross reference matrix attributes are mention on _____ and reports are mention on _____.

   e. Y axis, X axis

   f. Y axis, Z axis

   g. **X axis, Y axis**

   h. X axis, Z axis

84.   A table can be logically connected to another table by defining a _____.

a. Hyper link

b. Common attribute

c. **Primary key**

d. Super key

85.   Data Redundancy means

a. Security of data

b. **Duplication of data**

c. Management of data

d. Recovery of data

86.   Which of the following is a type of dependency?

a. DBMS

b. ERD

c. DFD

d. **Referential**

87.   In your opinion, why relational database is widely acceptable?

a. Due to its complexity

b. Due to its approach   **AL-JUNAID INSTITUTE OF GROUP**

c. **Due to its dependencies**

d. Due to its strength

88.   _____ is the first comprehensive complete database design.

a. Logical database design

b. Relational database design

c. **Conceptual database design**

d. Hierarchical database design

89.   How data security can be assured in the database?

a. By hiding data from all

b. Through concurrent access of users

c. By asking users not to share things

d. **Implementing encryption algorithms**

90.   The attributes whose value is not stored in a database is known as _____ attribute.

    a. Stored
    b. Single value
    c. Multi value
    d. Derived

91. **Logical database design, like conceptual database design is our _____**
    a. Data model
    b. Weak entity set
    c. Strong entity set
    d. Database design

92. **If a single instance of "student" is associated with the many instances of the "subjects" entity, then the relationship between them is:**
    a. One to one
    b. One to many
    c. Many to many
    d. Many to one

93. **The conceptual database design is drawn through _____.**
    a. Data model
    b. ER model
    c. Database design
    d. Entity set

94. **A relational database is**
    a. One that consist of two or more tables
    b. A database that is able to process tables, queries, forms, reports and macros
    c. One that consists of two or more tables that are joined in some way
    d. The same as a flat file database

95. **Database is a computerized representation of any organization's flow of _____ and storage of _____.**
    a. Data, information
    b. Details, data

c. Data, details

d. **Information, data**

96. In which stage of the database development process logical design is created?

a. Requirement analysis

b. Database design

c. Physical design

d. **Implementation**

97. Which of the following is NOT an entity?

a. Employee

b. Hobby

c. Student

d. **Playground**

98. After moving the determined columns from the original table to the new table while converting to 2NF, the determinate becomes the _____ of the new table.

a. **Primary key**

b. Foreign key

c. Secondary key

d. Composite key

99. The select operation works horizontally on the table, on the other hand the _____

operates on a single table vertically.

a. Binary operator

b. **Project operator**

c. Join operator

d. Select operator

100. Free standing data dictionary is created by

a. DFD

b. Database

c. **CASE tools**

d. Cross reference matrix

101. A patient can be an outdoor or indoor. Analyze this statement and tell what type of

constraint will be applied on patient?

a) **Total completeness**
b) Partial completeness
c) Total disjoint
d) Partial disjoint

102.   If A → B and A → C, then A → BC. The inference Rule applies is:

a) **Union**
b) Decomposition
c) Augmentation
d) Reflexivity

103.   Which of the following is the correct abbreviation of ERD?

a) **Entity relationship diagram**
b) Entity relation diagram
c) Entity reality diagram
d) Entity real distance

104.   Database relation is also represented in a two dimensional structure called _____

a) Row
b) **Table**
c) Entity
d) Column

105.   Data about data is metadata

a) **True**
b) False

106.   Which of the following describes the job of a database administrator?

a) Development, implementation operation of the physical database
b) Creation of the system catalog
c) **Monitoring and controlling database security and authorization: setting up controls to ensure the quality and integrity of data**
d) All of the above

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107. Each table must have a _____ key.
a) **Primary**
b) Secondary
c) Logical
d) Foreign

108. A relational database system is based on the concept(s) of:
a) A network of data records
b) Nested tables
c) **Tables, row and columns**
d) A tree-like structure of data

109. A → BC and A → B, then A → C follow _____ inference rule.
a) Augmentation
b) Transitivity
c) **Projectivity**
d) Additivity

110. Suppose, we have two entities "shape" and "triangle", then which of the following is a correct statement?
a) **Shape is a super type entity and triangle is a sub type entity**
b) Shape is a sub type entity and triangle is a super type entity
c) Shape and triangle both are super type entities
d) Shape and triangle both are sub type entities

111. The entity that is NOT dependent on any other entity for its existence is known as _____ entity.
a) Weak
b) **Strong**
c) Derived
d) Dependent

112. In cross reference matrix attributes are specified on _____
a) **X axis**
b) Y axis
c) Z axis
d) None of the above

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113. Which of the following clarify the semantics of a relationship?
   a) Entity
   b) Roles
   c) Relationship set
   d) Participants

114. How many types of cardinality is specified about relationship?
   a) Two
   b) One
   c) Three
   d) Four

115. Which of the following is NOT a component of a DFD?
   a) Dataflow
   b) Datastore
   c) External entities
   d) Relationship between external entities

116. Which of the following provides us the facility to add properties of one entity to another entity automatically?
   a) Abstraction
   b) Encapsulation
   c) Inheritance
   d) Dependencies

117. If there is more than one relationship between two entities and we mentioned role on the relationship link, then it is called:
   a) Unary relationship
   b) Binary relationships
   c) Ternary relationships
   d) Multiple relationships

118. Which one of the following is not an advantage of DBMS
   a) Data consistency
   b) Recovery procedure is difficult
   c) Faster development of new applications
   d) Better backup and recovery procedures

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119. In many to many relationship a third table is created for the relationship, which is also called as _____
   a) Binary relation
   b) **Associative entity type**
   c) Unary relationship
   d) Composite attributes

120. When one entity instance of another entity for its existence, then it is called _____
   a) **Existence dependency**
   b) Identifier dependency
   c) Referential dependency
   d) Acceptance dependency

121. Relational data model is widely accepted due to its mathematically proven foundation and its _____

   a) Complexity
   b) **Simplicity**
   c) Hierarchical structure
   d) Traditional structure

122. If an entity "motor cycle" is associated with at most one "driver", then the relationship between these two entities is:
   a) **One to one**
   b) One to many
   c) Many to many
   d) Many to one

123. Database application is a program which is used for performing certain operations such as
   a) Insertion of data
   b) Extraction of data
   c) Updating the data
   d) **All of above**

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124.   Creating the relationships between new tables and their predecessors through the use of foreign keys is general requirements of _____
   a) First normal form
   b) **Second normal form**
   c) Third normal form
   d) Fourth normal form

125.   In _____ the domains of attributes of a relation are atomic, that is they consist of single units that cannot be broken down further.
   a) **First normal form**
   b) Second normal form
   c) Third normal form
   d) Augmentation

126.   Atomicity is a feature of _____.
   a) **1NF**
   b) 2NF
   c) 3NF
   d) BCNF

127.   The _____ can see entire information structure of the database.
   a) **BA**
   b) DBTG
   c) Database user
   d) External viewer

128.   The attribute whose value is not stored in a database is known as _____ attribute.
   a) Stored
   b) Single value
   c) Multi value
   d) **Derived**

129. _____ are the structure defined for placing data in the attributes while designing physical design of database.
   a) Objects
   b) Variables
   c) Attributes
   d) **Data types**

130. Suppose a relation has five columns and ten rows, select the correct option to identify cardinality of relation.
   a) Five
   b) **Ten**
   c) Fifteen
   d) Twenty

131. Which feature of database provides conversion from inconsistent state of DB to a consistent state ensuring minimum data loss?
   a) User accessible catalog
   b) Data processing
   c) **Recovery service**
   d) Authorization service

132. The maximum PL/SQL size of data type "VARCHAR2" in DBMS is _____ bytes
   a) 42767
   b) 52767
   c) **32767**
   d) 28767

133. _____ is state of database where a "course" cannot be inserted in the table, because this course has not been registered to any "student".
   a) **Insertion anomaly**
   b) Deletion anomaly
   c) Updation anomaly
   d) Redundancy

134. The maximum PL/SQL size of data type "BLOG" in DBMS is_____

a) **4 gigabytes**
b) 8 gigabytes
c) 10 gigabytes
d) 12 gigabytes

135. _____ states that in a relation no attributes of a primary key (PK) can have a null value.

a) Referential integrity constraint
b) Null constraint
c) Domain constraint
d) **Entity integrity constraint**

136. A database state where deletion of the information about the student record deletes the course information as well is called _____.

a) Insertion anomaly
b) Updation anomaly
c) Redundancy
d) **Deletion anomaly**

137. An entity type is

a) Defined when the database is actually constructed
b) A specific type such as an integer, text, date, logical etc.
c) **A coherent set of similar objects that we want to store data on (e.g. STUDENTS, COURSE, CAR)**
d) Defined by the database designer

138. "select" and "project" are the examples of _____

a) **Unary operation**
b) Binary operation
c) Ternary operation
d) Nary operation

139. External scheme evolves as user needs are _____ over the time.

a) Ends

b) Modified

c) **Switch**

d) Stable

140. An attribute that is the collection of some other attribute(s) is known as _____

attributes.

a) Multi-valued

b) Single-valued

c) No-valued

d) **Composite**

141. Which of the following is correct regarding Dataflow diagram?

a) Single DFD is required to represent a system

b) The dataflow must be bidirectional

c) **Created at increasing levels of detail**

d) Used to represent the relationships among the external entities

142. _____ are those attributes that are a combination of two or more than two attributes.

a) Default value

b) Null value

c) Primary key

d) **Composite attributes**

143. Controlling redundancy in a database management system DOES NOT help to

a) avoid duplication

b) avoid unnecessary wastage of storage space

c) **avoid unauthorized access to data**

d) avoid inconsistency among data

144. Which of the following concepts is applicable with respect to 3NF?

a) Full functional dependency

b) Any kind of dependency

c) **Transitive dependency**

d) Partial functional dependency

145. Identify the operation which is NOT one of the parts of the five basic set operations in relational algebra?

a) **Join**
b) Union
c) Cartesian Product
d) Set Difference

146. Making a change to the conceptual schema of a database but not affecting the existing external schemas is an example of

a) Physical data independence.
b) Concurrency control.
c) **Logical data independence.**
d) Functional dependency

147. For a third normal form we concentrate on relations with one _____ key, and we eliminate transitive dependencies

a) **Candidate**

b) Composite
c) Super key
d) Primary key

148. The entity relationship diagram is used to graphically represent the _____ database model.

a) Condensed
b) Physical
c) Logical
d) **Conceptual**

149. The _____ determines that the link between two entities is optional or mandatory.

a) Maximum cardinality
b) **Minimum cardinality**
c) Maximum degree
d) Minimum degree

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150. Select the most appropriate statement. Which of the following data model is used to design logical database design?

a) **Relational**
b) Hierarchal
c) Object oriented
d) Any model can be used