B.C.A.(Fifth Semester) Examination, February/March-2022

BCA-501(N)

Introduction to DBMS

Time : 1:30 Hours   **Maximum Marks-100**

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

निर्देश : —

1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही– सही भरें, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।

2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमे से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने है। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET)में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वांइट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।

3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।

4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।

5. ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।

6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक–पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।

7. निगेटिव मार्किंग नहीं है।

महत्वपूर्ण : — प्रश्नपुस्तिका खोलने पर प्रथमतः जॉच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभॉति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।

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1. Auto value is a property of _____ Data type.

    (A) Character

    (B) Binary

    (C) Numeric

    (D) Date

2. _____ data types are used for storing photos, music files etc.

    (A) Alphanumeric

    (B) Binary

    (C) Numeric

    (D) Special

3. Which data type will be appropriate to store information as salary, Fees, Price etc. ?

    (A) Numeric Data Type

    (B) Alphanumeric Data Type

    (C) Binary Data Type

    (D) Data Time

4. Identify the Foreign key from table 'Sales' :

    Table client : Client ID (Primary key), Client name, Client phone

    Table sales : Sales ID (Primary key), Client ID, Profit

    (A) Profit

    (B) Client Phone

    (C) Sales ID

    (D) Client ID

5. When primary key is made up of two or more columns then it is called _____ primary key.

   (A) Mixed

   (B) Composite

   (C) Reference

   (D) Foreign

6. In SQL, which command is used to select only one copy of each set of duplicable rows ?

   (A) Select Unique

   (B) Select Distinct

   (C) Select Different

   (D) All of the above

7. A type of query that is placed within a WHERE or HAVING clause of another query is called :

   (A) Master Query

   (B) Super Query

   (C) Sub Query

   (D) Multi – Query

8. Which data type allows alphanumeric characters and special symbols to be entered?

   (A) Memo

   (B) Text

   (C) Auto number

   (D) Mixed

9. Two tables can be linked with relationship :

   (A) Create Primary key

   (B) Ensure data entry

   (C) Ensure Foreign key

   (D) Ensure data integrity

10. Which name must be unique within a database ?

   (A) Field

   (B) Record

   (C) Table

   (D) Character

11. Which one is the guideline of Referential Integrity in a relationship :

   (A) Do not enter a value in the primary key field of child table if that value does not exist in the primary key of the parent table.

   (B) Do not enter a value in the foreign key field of a child table if that value does not exist in the primary key of the parent table.

   (C) Do not enter a value in the foreign key field of a parent table if that value does not exist in the primary key of the child table.

   (D) Do not enter a value in the foreign key field of child table if that value does not exist in the foreign key of the parent table.

12. What do you mean by one to many relationship between teacher and class table ?

   (A) One teacher can have many classes.

   (B) One class may have many teachers.

   (C) Many classes may have many teachers.

   (D) Many teachers may have many classes.

13. When data is stored maintained and retrieved from multiple tables then special database software are required called :

(A) RDBMS

(B) DBMS

(C) Special DBMS

(D) All of the above

14. Which of the following is not the advantage of the database ?

(A) Sharing of Data

(B) Reduce Data Redundancy

(C) Data Security

(D) Increase Data Inconsistency

15. A database management system (DMS) is a :

(A) Hardware, system used to create, maintain and provide controlled access to a database.

(B) Software, system used to create, maintain and provide uncontrolled access to a database.

(C) Software, systems used to create, maintain and provide controlled access to a database.

(D) Hardware, system used to create, maintain and provide uncontrolled access to a database.

16. Database locking concept is used to solve the problem of :

(A) Lost update

(B) Uncommitted Dependency

(C) Inconsistent Data

(D) All of the above

17. A transaction completes its execution is said to be :

(A) Grant

(B) Commit

(C) Roll back

(D) Back up

18. Time stamps can be implemented by using a :

(A) System Clock

(B) Logical counter

(C) None of the above

(D) Both (A) and (B)

19. A phase during which all locks are requested is known as a :

(A) Shrinking phase

(B) Growing phase

(C) Aborted phase

(D) None of the above

20. A transaction in which either all of the database action occur or none of them do is called :

(A) Consistent

(B) Isolated

(C) Atomic

(D) Durable

21. The advantage of optimistic locking is that :
(A) The lock is obtained only after the transaction has proceed
(B) The lock never needs to be obtained
(C) The lock is obtained before the transaction has processed
(D) Transaction that are best suited are those with a lot of activity.

22. Related fields in a database are called :

(A) Data file

(B) Menu

(C) Bank

(D) Data Record

23. A logical Schema :

(A) Is a standary way of organising information into accessible parts

(B) describe how data is actually stored on a disk.

(C) Is the entire data base.

(D) Both (A) and (C)

24. In case of entity integrity, the primary key may be :

(A) NULL

(B) Not NULL

(C) Both NULL and Not NULL

(D) Any value

25. In Hierarchical model records are organize as :

(A) Tree

(B) Graph

(C) Links

(D) List

26. An entity set that does not have sufficient attributes to form a primary key in a :

(A) Strong entity set

(B) Simple entity set

(C) Primary entity set

(D) Weak entity set

27. The database schema is written in :

(A) HLL

(B) DML

(C) DCL

(D) DDL

28. ODBCstands for :

(A) Oral Data base connectivity

(B) Open Data base connectivity

(C) Object Data base connectivity

(D) Oracle Data base connectivity

29. Ina relational model, relations are termed as :

(A) Attributes

(B) Tables

(C) Tuples

(D) Rows

30. DML is provided for :

(A) The addition of new structures in the database system.

(B) Manipulation & processing of the data base.

(C) Definition of a physical structure of the database system.

(D) Description of the logical structure of a database.

31. Cartesian product in relational algebra is :

(A) A Unary operator

(B) A Binary operator

(C) A Ternary operator

(D) No defined

32. Relational Calculus is :

   (A) Procedural language

   (B) Non - Procedural language

   (C) Data definition language

   (D) High-level language

33. In the relational model, cardinality is termed as :

   (A) A number of tuples

   (B) A number of attributes

   (C) A number of tables

   (D) A number of constraints

34. Which of the following is/are task of DBA ?

   (A) Schema Definition

   (B) Granting of authorization

   (C) Schema of Physical organization modification

   (D) All

35. Which level of abstraction describes how data are actually stored ?

   (A) Logical

   (B) Physical

   (C) View

   (D) None

36. Which one of the following is not an DBMS tool :

   (A) SQ Lite

   (B) PHP

   (C) Mongo DB

   (D) Oracle

37. Which of these DBMS Languages is employed by end users and programmers to manipulate data in the database ?

(A) Data Definition Language

(B) Data presentation Language

(C) Data Manipulation Language

(D) Data Translation Language

38. Which type of users query and update the database by invoking some already written application programs ?

(A) Naive users

(B) Sophisticated users

(C) Special users

(D) System analysts

39. The ability to change the conceptual schema without affecting the external schemas or application programs is known as _____.

(A) Program Data Independence

(B) Logical Data Independence

(C) Data Abstraction

(D) None of above

40. Before the use of the DBMS info was stored in the _____.

(A) Cloud storage

(B) Data system

(C) Amazon

(D) File System

41. The two modes of locking a data item, are termed as shared and :

(A) Composite

(B) Exclusive

(C) Compatible

(D) Linear

42. If a transaction may obtain locks but may not release any locks then it is in _____ phase.

(A) Shrinking Phase

(B) Dead lock Phase

(C) Starved Phase

(D) Growing Phase

43. A schedule S of n transactions is serializable if it is equivalent to some :

(A) Non-Serial Schedule of the same n transaction

(B) Serial Schedule of different n transaction

(C) Serial Schedule of the same n transaction

(D) None of above

44. The Railway reservation system, the enables are date, train number, place of departure, destination. The primary key is :

(A) Train number

(B) Train number + date

(C) Train number + place of departure

(D) Train number + destination

45. The set of permitted value for each attribute is called its :

(A) Attentive range

(B) Domain

(C) Attribute set

(D) Group

46. Third normal form is inadequate in situation where the relation :

(A) Has candidate keys that are composites

(B) Has multiple candidate keys

(C) Has overlapped candidate keys

(D) None of the above

47. Given the functional dependencies :

$X \rightarrow W$; $X \rightarrow Y$; $Y \rightarrow Z$ and $Z \rightarrow PQ$ which of the following doesn't hold will

(A) $W \rightarrow Z$

(B) $X \rightarrow Z$

(C) $X \rightarrow WY$

(D) None of the above

48. If every non-key attribute is a functionally dependent primary key, then the relation will be in :

(A) First normal form

(B) Third normal form

(C) Second normal form

(D) Fourth normal form

49. Which data manipulations command is used to combines the records from one or more tables ?

(A) Join

(B) Select

(C) Project

(D) Product

50. SQL views are also known as :

(A) Actual tables

(B) Simple tables

(C) Virtual tables

(D) Complex tables

51. B-tree of order n is a order n multiway tree in which each non-root node contains :

(A) at most $(n - 1) / 2$ keys

(B) at least $(n - 1) / 2$ keys

(C) exact $(n - 1) / 2$ keys

(D) at least 2n keys

52. AB-tree of order 4 and of height 3 will have a maximum of _____ keys.

    (A) 63

    (B) 255

    (C) 188

    (D) 127

53. AB^{+} tree can contain a maximum of 7 pointers in a node. What is the minimum number of keys in leaves ?

    (A) 3

    (B) 6

    (C) 7

    (D) 4

54. Which of the following is True ?
    (A) B^{+} tree allows only random access
    (B) B^{+} tree allows only rapid random access and slower sequential access.
    (C) B^{+} tree allows only rapid sequential access.
    (D) B^{+} tree allows rapid random access as well as rapid sequential access.

55. Find closure of $\{AC\}^{+}$ of given F.D.

    $A \rightarrow B, \ BC \rightarrow D, \ C \rightarrow E, CD \rightarrow F$

    (A) $\{A, C\}^{+} = \{A, B\}$

    (B) $\{A, C\}^{+} = \{A, B, E\}$

    (C) $\{A, B\}^{+} = \{A, C\}$

    (D) $\{A, C\}^{+} = \{A, B, C, D, E\}$

56. Find closure $\{AB\}^{+}$ of given F.D.

    $A \rightarrow BC, \ E \rightarrow CF, \ B \rightarrow E \text{ and } C \rightarrow EF$

    (A) $X^{+} = \{A, B\}$

    (B) $X^{+} = \{A, C\}$

    (C) $\{AB\}^{+} = \{A, B, C\}$

    (D) $\{AB\}^{+} = \{A, B, C, E, F\}$

57. The database design prevents some data from being stored due to :

(A) Insertion anomalies

(B) Deletion anomalies

(C) Update anomalies

(D) selection anomalies

58. If one attribute is determinant of second, which in turn is determinant of third, then the relation cannot be :

(A) 3NF

(B) 1NF

(C) 2NF

(D) Will- structured

59. A functional dependency of the form $X \rightarrow Y$ is trivial if :

(A) $Y \subset X$

(B) $X \subseteq X$

(C) $X \subseteq Y$

(D) $X \subset Y$ and $Y \subset X$

60. Functions dependencies are a generalization of :

(A) Relation dependencies

(B) Key dependencies

(C) Database dependencies

(D) None of the mentioned

61. There are similarities between the instructor entity set an the secretary entity set in the sense that they have serval attributes that are conceptually the same across the two entity sets; namely the identifier, name and salary attributes. This process is called :
(A) Commonality
(B) Generalization
(C) Specialization
(D) Similarity

62. Which relationship is used to represent a specialization entity ?

(A) AIS

(B) ISA

(C) ONIS

(D) WHOIS

63. The entity set person is classified as student and employee. This process is called :

(A) Specialization

(B) Generalization

(C) Inheritance

(D) Constraint generalization

64. A type of query that is placed within a where or having clause of another query is called :

(A) Master Query

(B) Sub - Query

(C) Super Query

(D) Multi - Query

65. TRUNCATEstatement in SQL is a :

(A) DML

(B) DDL

(C) DCL

(D) TCL

66. Which of the following is not included in DML (Data manipulation Language) ?

(A) Alter

(B) Insert

(C) Update

(D) Delete

67. Domain constraints functional dependency and referential integrity are special forms of_____.

(A) Assertion

(B) Foreign key

(C) Primary key

(D) Referential constraint

68. Foreign key is one in which the _____ of one relation is referenced in another relation.

(A) Primary key

(B) Foreign key

(C) References

(D) Check constraint

69. Which of the following is not an Integrity constraint ?

(A) Not null

(B) Unique

(C) Positive

(D) Check predicate

70. Which of the following is a single valued attribute ?

(A) Register-number

(B) Subject-taken

(C) Address

(D) Reference

71. The attribute AGE is calculated from Date-of-Birth. The attribute AGE is :

(A) Single-valued

(B) Derived

(C) Multi-valued

(D) Composite

72. In ER model the details of the entities are hidden from the user. This process is called :

(A) Abstraction

(B) Generalization

(C) Specialization

(D) None of these above

73. Every weak entity set can be converted into a strong entity set by :

(A) Adding appropriate attributes

(B) Using generalization

(C) Using aggregation

(D) None of the above

74. In an entity relationship model an association among serval entities is known as :

(A) Relationship

(B) Participation

(C) Connection

(D) Synchronization

75. Which of the following is incorrect about an ER Model ?

(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 exactly one value or NULL.

(D) In a row of a relational table an attribute can have more than one value.

76. In a relation :

(A) Ordering of rows is immaterial

(B) No two rows are identical

(C) (A) and (B) both are true

(D) None of these

77. Which of the following are the properties of entities ?

(A) Attributes

(B) Groups

(C) Table

(D) Switch boards

78. The file organization that provides very fast access to any arbitrary record of a file is :

(A) Hashed file

(B) Ordered file

(C) Unordered file

(D) B-Tree

79. _____produces the relation that has attribute of R_1 and R_2.

(A) Difference

(B) Intersection

(C) Cartesian Product

(D) Product

80. Key to represent relationship between tables is called :

(A) Primary key

(B) Secondary key

(C) Foreign key

(D) None of these

81. Relational Algebra is :

(A) Data Definition Language

(B) Procedural Query Language

(C) Meta Language

(D) None of the above

82. SETconcept is used in :

(A) Relation Model

(B) Network Model

(C) Hierarchical Model

(D) None of these

83. E-R model uses this symbol to represent weak-entity set :

(A) Doubly outlined rectangle

(B) Diamond

(C) Dotted rectangle

(D) None of these

84. The following are components of a database except :

(A) User data

(B) Reports

(C) Meta data

(D) Indexes

85. The DBMS acts as an interface between _____and_____ of an enterprise-class system.

(A) Data and the DBMS

(B) Application and SQL

(C) The user and the software

(D) Database, application and the database

86. _____is a hardware component that is most important for the operation of database Management system.

(A) Microphone

(B) High-resolution video display

(C) High-speed, large capacity disk to store data

(D) Printer

87. Which of the following is known as a set of entities of the same type that share same properties or attributes ?

(A) Relation set

(B) Entity set

(C) Tuples

(D) Entity Relation model

88. Which of the following is a function of the DBMS ?

(A) Storing data

(B) Providing multi-users access control

(C) Data Integrity

(D) All of the above

89. Which of the following is not a function of the database ?

(A) Managing stored data

(B) Manipulate data

(C) Security for stored data

(D) Analysing code

90. Which of the following is a characteristics of DBMS ?

(A) High Level of security

(B) Single-user Access only

(C) Support ACID property

(D) Minimum Duplication

91. Which of the following is not a type of database ?

(A) Hierarchical

(B) Decentralized

(C) Network

(D) Distributed

92. In which of the following formats data is stored in the database management system ?

(A) Image

(B) Table

(C) Text

(D) Graph

93. The index consists of :

(A) A list of keys

(B) Pointers to the master list

(C) Both (A) and (B)

(D) None of the above

94. A Scheme describe :

(A) Data elements

(B) Records and files

(C) Record relationships

(D) All of the above

95. A logical Schema:

(A) Is a standard way of organizing information into accessible parts :

(B) Is the entire database

(C) Describe how data is actually stored on disk.

(D) None of the above

96. A top-to-bottom relationship among the items in a database is established by :

(A) Network Schema

(B) Hierarchical Schema

(C) Relation Schema

(D) None of the above

97. Which of the following is an aggregate function ?

(A) PLUS

(B) Minimum

(C) ABS

(D) Count

98. You want to run a SELECT command that lists all employees by the ascending order of their names. What clause would you include in the query to do the ordering ?

(A) List ASC by employee name

(B) ORDER by employee name

(C) SORT by employee name

(D) WHERE employee name ASC

99. Which is not a disadvantage of traditional file processing systems ?

(A) Program – data dependence

(B) Reduced data redundancy

(C) Laughty development time

(D) Limited data sharing

100. In a relationship_____ represents the maximum number of records in one entry that are linked to a single now in another entity :

(A) degree

(B) Cardinality

(C) Link

(D) None of these

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1. Examinee should enter his / her roll number, subject and Question Booklet Series correctly in the O.M.R. sheet, the examinee will be responsible for the error he / she has made.

2. **This Question Booklet contains 100 questions, out of which only 75 Question are to be Answered by the examinee. Every question has 4 options and only one of them is correct. The answer which seems correct to you, darken that option number in your Answer Booklet (O.M.R ANSWER SHEET) completely with black or blue ball point pen. If any examinee will mark more than one answer of a particular question, then the first most option will be considered valid.**

3. Every question has same marks. Every question you attempt correctly, marks will be given according to that.

4. Every answer should be marked only on Answer Booklet **(O.M.R ANSWER SHEET).**Answer marked anywhere else other than the determined place will not be considered valid.

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