Register Number:
Date:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE – 27
BCA(DATA ANALYTICS) – III SEMESTER
SEMESTER EXAMINATION – OCTOBER 2021
(Examination conducted in January-March 2022)

BCADA 3321: DATABASE MANAGEMENT SYSTEM

TIME : 2.5 HOURS **MAX MARKS : 70**

This Paper contain FOUR printed pages and THREE parts

PART A

Answer ALL the Questions **20 x 1 = 20**

1. Which of the following trains are important to select a primary key?
   a) Unique
   b) Not Null
   c) Fully Functional dependency
   d) All the mentioned
2. In E-R Diagram, _____ represents Key Attribute.
   a) Ellipse with underlying line
   b) Rectangle with underlying line
   c) Double rectangle
   d) None
3. _____ is a top-down approach in which one higher level entity can be divided into two lower level entities.
   a) Aggregation
   b) Specialization
   c) Generalization
   d) None
4. In a relational database, each tuple is divided into fields called_____
   a) Relations
   b) Domains
   c) Queries
   d) All the mentioned
5. An entity set that does not have sufficient attributes to form a primary key, is a _____
   a) Primary entity set
   b) Weak entity set
   c) Strong entity set
   d) None of the above
6. A functional dependency is a relationship between or among

a) Entities
b) Rows
c) Attributes
d) Tables

7. Every Boyee-Codd normal form is in
a) 1NF
b) 2NF
c) 3NF
d) All the mentioned

8. Find the candidate key for R(A,B,C,D,E,F) ; FD (A->B,B->C, C->D,D->E)
a) A
b) AD
c) AC
d) AF

9. Which database level is closest to the users?
a) External
b) Internal
c) Physical
d) Conceptual

10. EER diagram notation to represent
a) Specialization
b) Subclasses
c) Subclasses and Specialization
d) None of the above

11. An attribute or combination of attributes in one table whose values must either match the primary key in another table or be null is called _____
a) Candidate key
b) Super Key
c) Primary Key
d) Foreign Key

12. SQL Stands for
a) Sequential query language
b) Structured query language
c) Structured question language
d) Sequential query language

13. In functional dependency Armstrong rule (primary) refers to
a) Transitive, Augmentation and reflexive
b) Transitive, Augmentation and decomposition
c) Augmentation, Transitive and union
d) None

14. A relation R= (A,B,C,D,E,F,G) is given with following FD : AD->E, BE->F, B->C, AF->G. Which of the following is a candidate key?
a) A
b) ABD
c) ABC
d) AB

15. Which property of the following table is not true.
a) Order of attributes has no significance
b) Order of tuples has no significance
c) Attribute can have same name

d) Each tuple is distinct

16. The maximum number of superkeys for the relation schema R(A,B,C,D) with A as key is _____
    a) 15
    b) 16
    c) 8
    d) 10
17. Find the partial dependency for the relation R (A,B,C,D,E,F) and the FD= AB->C, C->D, D->E,
    A->F. (AB is a candidate key)
    a) AB->C
    b) C->D
    c) A->F
    d) D->E
18. Which of the constraint can be enforced one per table ?
    a) Primary key constraint
    b) Not Null Constraint
    c) Foreign Key constraint
    d) Check Constraint
19. _____ joins are SQL server default
    a) Inner
    b) Outer
    c) Left
    d) Right
20. Which name must be unique within a database?
    a) Table
    b) Field
    c) Record
    d) Character

PART B

Answer ANY SIX Questions **6 x 5 = 30**

21. Discuss the main characteristics of database approach and how it is differ from traditional file systems.
22. Explain in detail about Object Oriented model with example.
23. Discuss the various ER notations with a neat diagram.
24. Following relation is in which normal form?
    R(A,B,C,D,E,F) FD: AB->CDEF, BD->F
25. Explain about 1 tier, 2tier and 3 tier architecture.
26. Explain about EER diagram with example.
27. Give SQL statement which creates a STUDENT table consisting of following fields.
    Name CHAR(40)
    Class CHAR(6)
    Marks NUMBER(4)
    Rank CHAR(8)
28. Discuss Insertion, Update and deletion anomalies. Why they are considered bad? Illustrate with example.

PART C

Answer ANY TWO Questions **2 x 10 = 20**

29. Discuss about Armstrong Axioms with suitable examples.
30. Draw an ER diagram Airline Database schema with at least five entity types and specify primary key, structural constraints and weak entity using cardinalities.
31. Consider the following relations:

    Hotel {hotelNo, name, address}

    Room {roomNo, hotelNo, type, price}

    Booking {hotelNo, guestNo, dateFrom, dateTo, roomNo}

    Guest {guestNo, name, address}

    Write the SQL statements for the following:

    i) List the names and addresses of all guests in Chandigarh, alphabetically ordered by name.

    ii) List all family rooms with a price below Rs.400 per night, in ascending order of price.

    iii) How many hotels are there?