United College of Engineering and Research, Allahabad

Department of Computer Science & Engineering

B.Tech CSE- V Semester

Set-1

Course Name: Database Management System   **AKTU Course Code:** KCS-501
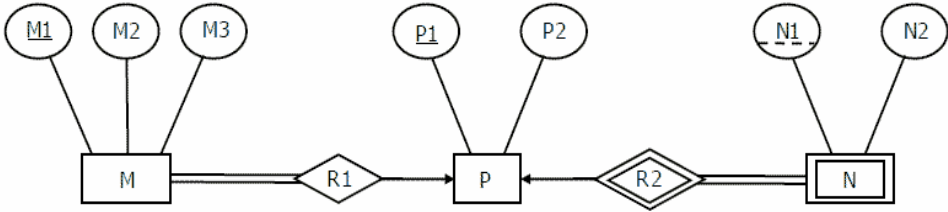
Time: 60 Minutes   **Max. Marks: 40**

- **All Questions are compulsory.**
- **All Questions carry one mark.**

Q. No.	Questions
1	The attribute *name* could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called a) Simple attribute b) Composite attribute c) Multivalued attribute d) Derived attribute
2	The attribute AGE is calculated from DATE_OF_BIRTH. The attribute AGE is a) Single valued b) Multi valued c) Composite d) Derived
3	Which of the following can be a multivalued attribute? a) Phone_number b) Name c) Date_of_birth d) All of the mentioned
4	Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record? a) Candidate key b) Sub key c) Super key d) Foreign key
5	The subset of a super key is a candidate key under what condition? a) No proper subset is a super key b) All subsets are super keys

	c) Subset is a super key d) Each subset is a super key
6	Which one of the following attribute can be taken as a primary key? a) Name b) Street c) Id d) Department
7	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 b) Primary c) Super d) Sub
8	Which one of the following is a procedural language? a) Domain relational calculus b) Tuple relational calculus c) Relational algebra d) Query language
9	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
10	An entity set that does not have sufficient attributes to form a primary key is termed a _____ a) Strong entity set b) Variant set c) Weak entity set d) Variable set
11	The number of entities to which another entity can be related through a relationship set is called? (A) Cardinality (B) Entity (C) Schema (D) Attributes
12	Select the attributes which made up of more than one single attribute. (A) Multi-value attribute (B) Derived attribute (C) Single value attribute (D) Composite attribute

13	If two entities have many to many relationships mostly results in how many tables.
	(A) Three
	(B) Two
	(C) One
	(D) Four

14	How the Every weak entity set can be changed into a strong entity set through?
	(A) using generalization
	(B) using aggregation
	(C) adding appropriate attributes
	(D) none of the above

15	Select the E-R modeling technique is a _____?
	(A) Left-right approach
	(B) Bottom-up approach
	(C) Top-down approach
	(D) None of the above

16	This process of hiding the details of entities in the ER model is known as?
	(A) generalization
	(B) abstraction
	(C) specialization
	(D) none of these above

17	The primary key in a many to one relationship, acts as a foreign key on which side?
	(A) On the side where many relationships are defined
	(B) On the side where a single (one) relationship is defined
	(C) On both the sides
	(D) Neither of them

18	**The DBMS is the software that interacts with the ………………and the database.**
	(A) User's application programs
	(B) User's system programs
	(C) User's system database
	(D) None of the above

19	**DDL stands for what**
	(A) Database Definition Level
	(B) Data Definition Language
	(C) Data Device Latency
	(D) None of the above
20	An abstraction concept for building composite object from their component object known as
	(A) Aggregation
	(B) Normalization
	(C) Generalization
	(D) Specialization
21	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
22	Consider the following ER diagram.
	The minimum number of tables needed to represent M, N, P, R1, R2 is
	2
	3
	4
	5
23	Consider the data given in above question. Which of the following is a correct attribute

set for one of the tables for the correct answer to the above question?

(A) {M1, M2, M3, P1}

(B) {M1, P1, N1, N2}

(C) {M1, P1, N1}

(D) {M1, P1}

24	Let E1 and E2 be two entities in an E/R diagram with simple single-valued attributes. R1 and R2 are two relationships between E1 and E2, where R1 is one-to-many and R2 is many-to-many. R1 and R2 do not have any attributes of their own. What is the minimum number of tables required to represent this situation in the relational model? (A) 2 (B) 3 (C) 4 (D) 5
25	What is the min and max number of tables required to convert an ER diagram with 2 entities and 1 relationship between them with partial participation constraints of both entities? (A) Min 1 and max 2 (B) Min 1 and max 3 (C) Min 2 and max 3 (D) Min 2 and max 2

| 26 | Consider the following tables T1 and T2:

T1

P	Q
2	2
3	8
7	3
5	8
6	9
8	5
9	8

T2

R	S
2	2
8	3
3	2
9	7
5	7
7	2

In table T1, P is the primary key, Q is the foreign key referencing R in table T2 with on-delete cascade and on-update cascade. In table T2, R is the primary key and S is the foreign key referencing P in the table T1 with on-delete set NULL and on-update cascade. In order to delete record (3,8) from table, numbers of additional record that need to be deleted from table T1 is _____.

(A) 0

(B) 1

(C) 2

(D) 3

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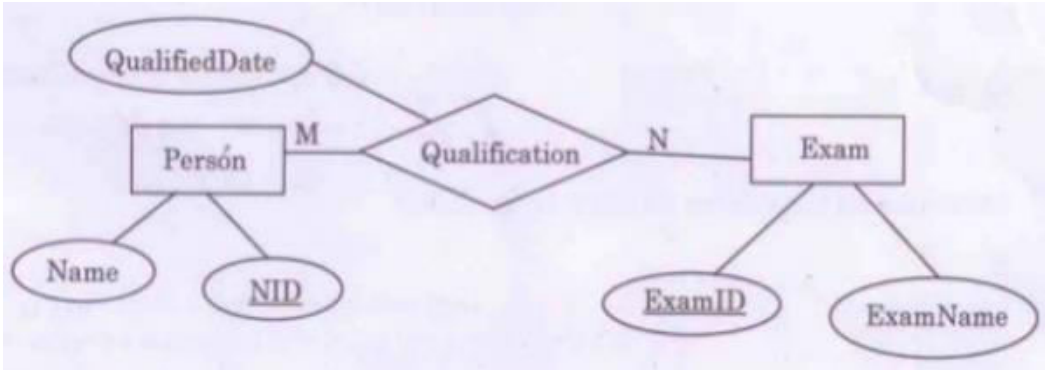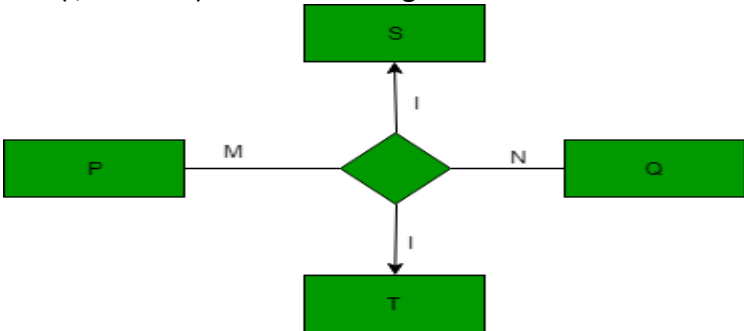
27 — In an Entity-Relationship (ER) model, suppose R is a many-to-one relationship from entity set E1 to entity set E2. Assume that E1 and E2 participate totally in R and that the cardinality of E1 is greater that the cardinality of E2. Which one of the following is true about R?

(A) Every entity in E1 is associated with exactly one entity in E2.

(B) Some entity in E1 is associated with more than one entity in E2.

(C) Every entity in E2 is associated with exactly one entity in E1.

(D) Every entity in E2 is associated with at most one entity in E1.

28	Match the following with respect to RDBMS :

(a)	Entity integrity	(i)	enforces some specific business rule that do not into entity or domain
(b)	Domain integrity	(ii)	Rows can't be deleted which are used by ot records
(c)	Referential integrity	(iii)	enforces valid entries for a column
(d)	Userdefined integrity	(iv)	No duplicate rows in a table

Code :

	(a)	(b)	(c)	(d)
(1)	(iii)	(iv)	(i)	(ii)
(2)	(iv)	(iii)	(ii)	(i)
(3)	(iv)	(ii)	(iii)	(i)
(4)	(ii)	(iii)	(iv)	(i)

(A) (1)

(B) (2)

(C) (3)

(D) (4)

29	In RDBMS, different classes of relations are created using _____ technique to prevent modification anomalies.

(A) Functional Dependencies

(B) Data integrity

(C) Referential integrity

(D) Normal Forms

30	Integrity constraints ensure that changes made to the database by authorized users do not result into loss of data consistency. Which of the following statement(s) is (are) true w.r.t. the examples of integrity constraints?

(A) An instructor Id. No. cannot be null, provided Intructor Id No. being primary key.
(B) No two citizens have same Adhar-Id.
(C) Budget of a company must be zero.

	(A) (A), (B) and (C) are true.
	(B) (A) false, (B) and (C) are true.
	(C) (A) and (B) are true; (C) false.
	(D) (A), (B) and (C) are false
31	Let M and N be two entities in an E-R diagram with simple single value attributes. R_1 and R_2 are two relationship between M and N, where as R_1 is one-to-many and R_2 is many-to-many. The minimum number of tables required to represent M, N, R_1 and R_2 in the relational model are _____. (A) 4 (B) 6 (C) 7 (D) 3
32	Which one is correct w.r.t. RDBMS ? (A) primary key $\subseteq$ super key $\subseteq$ candidate key (B) primary key $\subseteq$ candidate key $\subseteq$ super key (C) super key $\subseteq$ candidate key $\subseteq$ primary key (D) super key $\subseteq$ primary key $\subseteq$ candidate key
33	Consider the join of a relation R , with a relation S . If R has m number of tuples and S has n number of tuples then the maximum and minimum sizes of the join respectively are: (A) m + n & 0 (B) mn & 0 (C) m + n & | m - n | (D) mn & m + n
34	Let R(a, b, c) and S(d, e, f) be two relations in which d is the foreign key of S that refers to the primary key of R. Consider the following four operations R and S. I. Insert into R II. Insert into S III. Delete from R IV. Delete from S Which of the following can cause

violation of the referential integrity constraint above?

(A) Both I and IV

(B) Both II and III

(C) All of these

(D) None of these

35	Consider the following Relationship Entity Diagram(ERD)

Which of the following possible relations will not hold if the above ERD is mapped into a relation model?

(A) Person (NID, Name)

(B) Qualification (NID, ExamID, QualifiedDate)

(C) Exam (ExamID, NID, ExamName)

(D) Exam (ExamID, ExamName)

36	Consider the following Entity-Relationship (E-R) diagram and three possible relationship sets (I, II and III) for this E-R diagram:

P	Q	S	T
p1	q1	s1	t1
p1	q1	s1	t2

I

P	Q	S	T
p1	q1	s1	t1
p1	q1	s2	t2

II

P	Q	S	T
p1	q1	s1	t1
p1	q2	s1	t1

III

If different symbols stand for different values (e.g., t_1 is definitely not equal to t_2), then which of the above could not be the relationship set for the E-R diagram?

(A) I only

(B) I and II only

(C) II only

(D) I, II and III

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37 In a relational database model, NULL values can be used for all but which one of the following?

(A) To allow duplicate tuples in the table by filling the primary key column(s) with NULL.

(B) To avoid confusion with actual legitimate data values like 0 (zero) for integer columns and '' (the empty string) for string columns.

(C) To leave columns in a tuple marked as ''unknown'' when the actual value is unknown.

(D) To fill a column in a tuple when that column does not really "exist" for that particular tuple.

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38 Consider the following database table having A, B, C and D as its four attributes and four possible candidate keys (I, II, III and IV) for this table

A	B	C	D
a1	b1	c1	d1
a2	b3	c3	d1
a1	b2	c1	d2

:

I : {B}

II : {B, C}

III : {A, D}

IV : {C, D}

If different symbols stand for different values in the table (e.g., d_1 is definitely not equal to d_2), then which of the above could not be the candidate key for the database table ?

(A) I and III only

(B) III and IV only

(C) II only

(D) I only

39	Which of the following statements is FALSE about weak entity set?

(A) Weak entities can be deleted automatically when their strong entity is deleted.

(B) Weak entity set avoids the data duplication and consequent possible inconsistencies caused by duplicating the key of the strong entity.

(C) A weak entity set has no primary keys unless attributes of the strong entity set on which it depends are included

(D) Tuples in a weak entity set are not partitioned according to their relationship with tuples in a strong entity set.

40	Immunity of the external schemas (or application programs) to changes in the conceptual schema is referred to as:

	(A) Physical Data Independence (B) Logical Data Independence (C) Both (a) and (b) (D) None of the above

Answer

1-B	2-D	3-A	4-C	5-A	6-C	7- B	8-C	9-B	10-C
11-A	12-D	13-A	14-C	15-C	16-B	17-A	18-A	19-B	20-A
21-C	22-B	23-A	24-B	25-C	26-A	27-A	28-B	29-D	30-C
31-D	32-B	33-B	34-B	35-C	36-A	37-A	38-C	39-D	40-B