

Marks Obtained:

KATHMANDU UNIVERSITY
End Semester Examination [C]
July, 2017

Level : B. Sc.
Year : II

Course : COMP 232
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

JUL : 11 2017

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Tick (✓) the best alternative(s).

1. In the relational modes, cardinality is termed as:
 Number of tuples. Number of attributes.
 Number of tables. Number of constraints
2. The view of total database content is
 Conceptual view. Internal view.
 External view. Physical View.
3. AS clause is used in SQL for
 Selection operation. Rename operation.
 Join operation. Projection operation.
4. E-R model uses this symbol to represent weak entity set ?
 Dotted rectangle. Diamond
 Doubly outlined rectangle ellipse
5. A relation is in this form if it is in BCNF and has no multivalued dependencies:
 First normal form Second normal form
 Third normal form Fourth normal form
6. When the values in one or more attributes being used as a foreign key must exist in another set of one or more attributes in another table, we have created a(n):
 Transitive dependency Referential integrity
 Normal forms Indices
7. _____ produces the relation that has attributes of R1 and R2
 Cartesian product Difference
 Intersection Product
8. Which of the following operation is used if we are interested in only certain columns of a table?
 PROJECTION SELECTION
 UNION JOIN
9. To delete a particular column in a relation the command used is:
 UPDATE DROP
 ALTER DELETE

10. The search key of a clustering index is _____ of the table.
 necessarily be the primary key not necessarily be the primary key
 necessarily be the foreign key clustering index does not have any key
11. In a system where automatic lock based protocol mechanism is implemented, when a transaction T_i issues a _____ operation, the system issues a lock-S(Q) instruction followed by the _____ instruction.
 Read(Q) and Read(Q) Read(Q) and write(Q)
 write(Q) and Read(Q) write(Q) and write(Q)
12. In RDBMS system a _____ key is a property of the entity set, rather than that of the individual entities.
 Primary Candidate Super All of the above
13. The logical operation (FALSE and NULL) will result in _____ state.
 FALSE NULL unknown TRUE
14. Which one of the following statement is false regarding operation on NULL?
 When we operate on a NULL and another value (including another NULL) using, etc., the result is NULL
 Aggregate functions ignore NULL
 NULL and ZERO value are manipulated in different sense
 COUNT, like aggregate function, ignores NULL in SQL statement
15. To update an SQL view, the DBMS must be able to associate the column(s) to be updated with:
 a particular column in a particular underlying table
 a particular column in a particular row
 a particular row in a particular underlying table
 a particular row in a particular column
16. Using the SQL GROUP BY phrase with a SELECT statement can help detect which of the following problems?
 The multi value, multicolumn problem
 The inconsistent values problem
 The missing values problem
 The general-purpose remarks column problem
17. Locks placed by command are called _____.
 Implicit Explicit Shared Exclusive
18. Which one of the following sorts rows in SQL?
 GROUP BY ORDER BY SORT BY HAVING BY
19. Which is NOT one of the most common types of SQL CHECK constraints?
 System date
 Range checks
 Lists of values
 Comparing one column value to another within the same table
20. TRUNCATE statement in SQL is a
 Data Definition Language Data Manipulation Language
 Data Control Language Transaction Control Language

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F. M. : 40

SECTION "B"

[2Q × 8 = 16 marks]

Answer *ANY TWO* questions.

SCENARIO:

Let us consider a scenario of a Human Resource Department (HRD) in a university. In our arbitrary university there are many types of staffs, for example teaching, non-teaching and research staffs. On these varieties also, they may be permanent or temporary or even some are working on daily wages basis. Each teaching staff has designation such as lecturer, assistant professor, and so on. The category of non-teaching staff has been marked by support staff, officer, and manager and so on. Some academic staffs are assigned with special responsibilities, for example dean, registrar etc. Each teaching staff belongs to the unique departments which are in fact under the schools. Each school is led by the dean and the department by HOD.

1. Based upon the scenario given above answer (a.b) the following.
 - a. Depending upon the above scenario suggest how should HRD keep the record of its staff?
 - b. Represent the above scenario using ER diagram.
2. Based upon the scenario given above answer (c. d) the following.
 - c. Generate a key for the staff that can be used as Primary key. Remember that your key should indicate whether the staff is permanent or temporary or on daily wages basis, academic or non-academic and date of join. Explain your view.
 - d. State the extended ER features and explain how you can implement these features in the above scenario.
3. What do you mean by concurrent transaction? State the problem that is related with concurrent transaction. Explain the different state of the transaction system with example.

SECTION "C"

[6Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

4. What is the difference between the information and the data? Explain the term different physical data independence with examples.
5. What do you mean by foreign key? Write a SQL query to impose the foreign key to some table and explain each key word and variables.
6. How do you define the functional dependency? What sorts of redundancy will the third normal form try to eliminate?

7. What do you mean by Cartesian product? What kind of information will these operations generate? Explain with examples.
8. Explain in detail how the null value is interpreted by the aggregation function of SQL.
9. What do you mean by index? Describe the four different criteria that evaluate the indexing.
10. Explain when do you use 'where' clause and 'having' clause. Write SQL query syntax to back up the whole table.