

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH/APRIL 2012**Fourth Semester**

Vocational Course – COMPUTER SCIENCE – DATABASE MANAGEMENT SYSTEM

(For Model II – B.Sc. Mathematics)

Time : Three Hours

Maximum Weight : 25

Section A Objective Type)*Answer all questions in this part.**Weight 1 for each bunch of four questions.*

- I. 1. A computer file contains several records. What does each record contains?
(a) Bytes. (b) Words.
(c) Fields. (d) Database.
2. Which of the following storage manager ensures that the database remains in a consistent state despite system failure?
(a) Integrity manager. (b) Transaction manager.
(c) File manager. (d) Buffer manager.
3. Which of the following component in E-R diagram represents entity sets?
(a) Rectangle. (b) Diamonds.
(c) Ellipses. (d) Double ellipses.
4. The binary relationship between entity FATHER and CHILDREN is an example of :
(a) One-to-one. (b) One-to-many.
(c) Many-to-one. (d) Many-to-many.
- II. 5. Which of the following features is supported in the relational database model?
(a) Complex data types.
(b) Multi-valued attributes.
(c) Associations with multiplicities.
(d) Generalization relationships.
6. A tuple is also known as a(n) :
(a) Table. (b) Relation.
(c) Row. (d) Field.

Turn over

7. SQL keyword used to state the condition that specifies which rows are to be selected?
- (a) EXISTS. (b) FROM.
(c) SELECT. (d) SET.
8. Three DDL commands :
- (a) CREATE, ALTER, DELETE. (b) INSERT, UPDATE, DELETE.
(c) CREATE, ALTER, DROP. (d) CREATE, UPDATE, DROP.
- III. 9. Which of the following identity persists only during the execution of a single program or query?
- (a) Intraprocedure. (b) Intraprogram.
(c) Interprogram. (d) Persistent.
10. The fastest storage media such as cache is referred as :
- (a) Primary storage. (b) Secondary storage.
(c) Tertiary storage. (d) Off-line storage.
11. Which of the following RAID level known as memory-style error correcting-code organization, employs parity bits?
- (a) RAID level 0. (b) RAID level 1.
(c) RAID level 2. (d) RAID level 3.
12. Primary indices are also called :
- (a) Clustering indices. (b) Non-clustering indices.
(c) Secondary indices. (d) None.
- IV. 13. The activities involved in extracting data from a database is called :
- (a) Sorting. (b) Merging.
(c) Query processing. (d) Data processing.
14. Which of the following join algorithm can be used to compute natural joins and equi-joins?
- (a) Merge-join. (b) Nested-loop join.
(c) Block Nested-loop join. (d) Indexed Nested-loop join.
15. In transaction-server process, which of the following processes that receive user queries, execute them and send the result back?
- (a) Server processes. (b) Check point process.
(c) Process monitor process. (d) Database writer process.
16. Internet is a good example of :
- (a) LAN. (b) SAN.
(c) MAN. (d) WAN.

(4 × 1 = 4)

Section B (Short Answer)*Answer any five questions.**Weight 1 each.*

17. Define the "integrity rules".
18. Differentiate between weak and strong entity.
19. What are the two major pitfalls to be avoided during designing a database schema?
20. What is the difference between super key and foreign key?
21. What is Relational Algebra?
22. Give the meaning of the expression ACID transaction.
23. What are the two basic kinds of indices?
24. What is the difference between binary search and linear search.

 $(5 \times 1 = 5)$ **Section C (Short Essay Type)***Answer any four questions.**Weight 2 each.*

25. Why we need database system? Explain.
26. Write short notes on database languages.
27. What are the operations that deal with null values?
28. Explain how JDO model for object persistence in Java program differ from model supported by C++.
29. Explain parallel Database Architecture with a neat diagram.
30. Explain merge-sort algorithm.

 $(4 \times 2 = 8)$ **Section D (Essay Type)***Answer any two questions.**Weight 4 each.*

31. Discuss in detail about the extended E-R features.
32. Discuss about various Relational-Algebra operations.
33. Describe static and dynamic hashing.

 $(2 \times 4 = 8)$

Turn over