QP CODE: 21102125

21102125

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS)EXAMINATION, AUGUST 2021

Third Semester

B.Sc Computer Science Model III

CORE COURSE - CC3CRT01 - DATABASE MANAGEMENT SYSTEMS

2017 Admission Onwards

51774D60

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is a Database system?
2. What are mappings in 3 schema architecture?
3. What is an entity?
4. Briefly explain Domain constraints.
5. Define query language.
6. What is the use of EXISTS and UNIQUE functions in SQL.
7. What is a natural join?
8. List out four informal guidelines for relation schemas.
9. Define full functional dependency.
10. What is concurrency?
11. Discuss about database confidentiality and databse availability.
12. What is the use of REVOKE command in SQL?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain the advantages of using DBMS approach.

14. Describe categories of data models.

15. Create an ER Diagram that demonstrates Strong entity, Weak entity, relationships and various types of attributes.

16. Explain weak entity with a meaningful example using E-R diagram.

17. Describe the four clauses in the syntax of a simple SQL retrieval query.

18. Explain SET operations available in SQL.

19. Difference between 3-NF and BCNF.

20. Explain 2NF and 3NF with suitable examples.

21. Explain for main control measures to provide security of data in databases.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain database system environment using a neat diagram.

23. Construct a relational schema diagram for the company database . Details of COMPANY database is as follows. (1) The company is organised into departments.Each department has a unique name,unique number and a particular employee who manages the department. Keep track of the start date when that employee began managing the department. A department may have several locations. (2) A department controls a number of projects,each of which has a unique name,a unique number and a single location. (3) Employee has name,SSN,address,salary,gender and birth date.An employee is assigned to ine department but may work on several projects,which are not necessarilyb controlled by the same department.Keep track of the current number of hours per week that an employee works on each project.Also keep track of the direct supervisor of each employee. (4) Keep track of the dependants of each employee for instance purposes.Dependant has name,genderdob and relationship to employee.

24. Explain database file indexing techniques.

25. Explain discretionary access control based on granting and revoking privileges.

(2×15=30)