CBCS SCHEME

USN | | | | | | | | | | |

17CS52

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023
Computer Networks

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. With general format, explain the HTTP request and response messages. **(10 Marks)**

b. With neat diagram, illustrate the basic operation of SMTP. **(10 Marks)**

OR

2 a. Explain recursive queries in DNS with neat diagram. **(10 Marks)**

b. With neat diagram, explain DNS message format. **(10 Marks)**

Module-2

3 a. With general format, explain the various fields of UDP segment. Explain how checksum is calculated. **(10 Marks)**

b. With neat diagram, explain the working of rdt 2.0. **(10 Marks)**

OR

4 a. With general format, explain all the field in TCP segments. **(10 Marks)**

b. Explain TCP connection management process with neat diagram. **(10 Marks)**

Module-3

5 a. With a neat diagram, explain the structure of a router. **(10 Marks)**

b. Write the link state algorithm and apply it to the following graph to compute shortest path from source node 'A' to all other nodes in the network. [Refer Fig.Q5(b)]

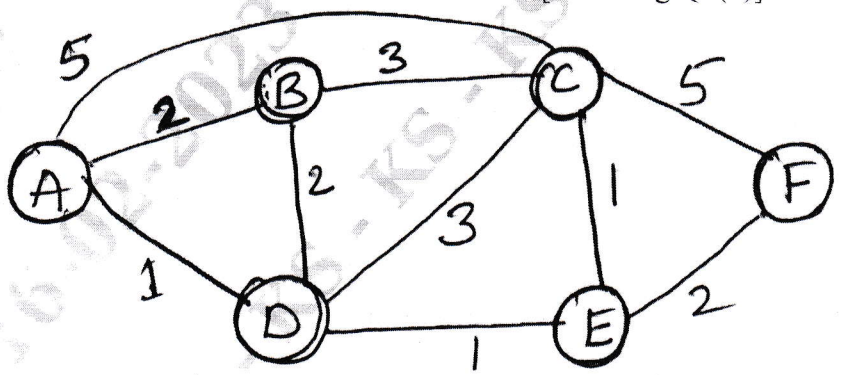

Fig.Q5(b) **(10 Marks)**

OR

6 a. With general format, explain the various fields of IPV6. **(10 Marks)**

b. Explain the intra-AS routing protocol in detail. **(10 Marks)**

Module-4

7 a. Explain the 3G cellular network architecture with neat diagram. **(10 Marks)**

b. Explain the two types of routing approaches to mobile node. **(10 Marks)**

OR

8 a. Explain the three phases of mobile IP. **(10 Marks)**

b. What is hand off? What are the steps involved in accomplishing handoff? **(10 Marks)**

Module-5

9 a. Explain the three different types of streaming stored video. **(10 Marks)**

b. Discuss the properties of audio and video. **(10 Marks)**

OR

10 a. Explain the working of CDN. **(10 Marks)**

b. What are the classifications in multimedia network applications? Explain. **(10 Marks)**

* * * * *

CBCS SCHEME

USN | | | | | | | | | | |

17CS53

Fifth Semester B.E. Degree Examination, Jan./Feb. 2023
Database Management System

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain the main characteristics of the database approach versus the file processing approach. **(08 Marks)**

b. Explain the three-schema architecture with neat diagram. Why do we need mapping among schema levels? How do different schema definition languages support this architecture? **(08 Marks)**

c. Discuss the different types of user friendly interfaces and the types of user who typically use each. **(04 Marks)**

OR

2 a. Explain with block diagram the different phases of database design. **(08 Marks)**

b. Design an E-R diagram for keeping track of information about a company database taking into account of least five entities. **(08 Marks)**

c. List the advantages of DBMS. **(04 Marks)**

Module-2

3 a. Describe the characteristics of relations with suitable example for each. **(08 Marks)**

b. In SQL which command is used for table creation? Explain with an example along with the constraint specification. **(08 Marks)**

c. Explain the data types available for attribute specification in SQL. **(04 Marks)**

OR

4 a. Explain any five relational algebra operators along with their syntax and purpose. **(10 Marks)**

b. Explain the steps of an algorithm for ER-to-relational mapping. **(10 Marks)**

Module-3

5 a. Explain the syntax of creating and updating views in SQL and give examples for each. **(10 Marks)**

b. Draw and explain 3-tier architecture and technology relevant to each tier. Write the advantages of 3-tier architecture. **(10 Marks)**

OR

6 a. Consider the following company database:
EMP (Name, SSN, Salary, SuperSSN, Dno)
DEPT (DNum, Dname, MgrSSN, Dno)
DEPT_LOC (Dnum, Dlocation)
DEPENDENT (ESSN, Dep_name, Sex)
WORKS_ON (ESSN, Pno, Hours)
PROJECT (Pname, Pnumber, Plocation, Dnum)

Write the SQL queries for the following:

(i) Retrieve the name of the employee who works with same department as ravi.
(ii) Retrieve the number of departments for an employee "Ravi"
(iii) Retrieve the name of the managers working in location "DELHI" who has no female dependents.
(iv) List female employees from Dno = 20 earning more than 50,000.
(v) List "CSE" department details. **(10 Marks)**

b. What is SQLJ? How it is different from JDBC? **(06 Marks)**

c. What is Dynamic SQL and how is it different from embedded SQL? **(04 Marks)**

Module-4

7 a. Define normal form. Explain 1NF, 2NF and 3NF with suitable examples for each. **(08 Marks)**

b. Explain the informal design guidelines used as measures to determine the quality of relation schema design. **(08 Marks)**

c. Define multivalued dependency. Explain fourth normal form with an example. **(04 Marks)**

OR

8 a. Discuss the null value and dangling tuple problems. **(08 Marks)**

b. Explain the concept of BCNF. **(08 Marks)**

c. Explain properties of relational decomposition. **(04 Marks)**

Module-5

9 a. Discuss the desirable properties of transactions. **(08 Marks)**

b. Explain transaction support in SQL. **(08 Marks)**

c. What is two-phase locking protocol? How does it guarantee serializability? **(04 Marks)**

OR

10 a. Explain:

(i) Multi version concurrency control protocols
(ii) Shadow paging **(10 Marks)**

b. Explain:

(i) NO-UNDO/REDO Recovery based on deferred update
(ii) Recovery techniques based on immediate update **(10 Marks)**

* * * * *