

M.Sc. 3rd Semester Examination, 2023

COMPUTER SCIENCE

PAPER – COS-304(M1&M2)(CBCS)(New)

Full Marks : 50

Time : 1 hour

The figures in the right hand margin indicate marks

*Candidates are required to give their answers in
their own words as far as practicable*

Illustrate the answers wherever necessary

PAPER – COS-304(M1)

(Module-I)

GROUP – A

Answer any two questions : 2 × 2

1. Name one unary and one binary operation in relational algebra.

2. What is the purpose of the primary key in a relational database ?
3. What is the purpose of normalization in DBMS ?
4. Which SQL statement is used to
 - (a) Remove a table from the database
 - (b) Retrieve data from one or more tables in a database.

GROUP – B

Answer any **two** questions : 4 × 2

5. What is the purpose of foreign key in a database ? Give one example. 2 + 2
6. What is fully and partial dependency ? Show with an example. 2 + 2
7. Explain three layer architecture of database with diagram. 4

8. Suppose that we have a Library database containing following set of relations :

Members (Member_id, Member_name, max_books_allowed), Books (Book_ID, Author_ID, cost), Issue_books(Member_id, Book_ID, Issue_date). Write SQL for the following queries.

- (a) Retrieve the Name and ID of Members who's issued book between 26th January 2023 and 14th April 2023. 2
- (b) Find the Member's name who has issued the book having maximum cost. 2

GROUP – C

Answer any **one** question : 8 × 1

9. Design an ER-diagram for a University Library with a set of Books, Members, Authors, Publishers, etc. Members can be specialized as Scholars and Teachers. 8

10. Consider the relations

WORKER (ID, FIRST_NAME, LAST_NAME, SALARY, DOJ, DEPARTMENT)
BONUS (REF_ID, AMOUNT, BONUS_DATE)

Answer the following queries :

- (i) Display FIRST_NAME of all works using the alias name WORKER_NAME.
- (ii) Display unique values of DEPARTMENT
- (iii) Display details of all workers order by FIRST_NAME Ascending and DEPARTMENT Descending.
- (iv) Display details of 'Vipul' and 'Satish' from WORKER Table.

PAPER – COS-304(M2)

(Internet Technology)

GROUP – A

Answer any **two** questions : 2 × 2

1. What is computer network ?
2. List names of layers in ISO/OSI and TCP/IP models.
3. What is the use of IP addresses ?
4. What are the advantages of HTML ?

GROUP – B

Answer any **two** questions : 4 × 2

5. What is data communication ? Define the responsibilities of physical and network layer in OSI model.
6. Write the differences among different types of networks.
7. Describe classful addressing.

8. Write a HTML program which includes image, hyperlink and table.

GROUP – C

Answer any **one** question : 8 × 1

9. Write short note about following (any two) : 4 × 2

(i) Bridge

(ii) Router

(iii) Switch.

10. Describe basic HTML program structure. Find the range of the block and number of addresses for following IP addresses. 2 + 6

(i) 143.66.77.32/24

(ii) 15.30.16.0/28.

[Internal Assessment – 10 Marks]
