

Department of Computer Science

Subject: Database Systems(COSC-2103) **Fall-2024**

Midterm

Time Allowed: 60 Minutes

MA

Rollnumber _____

Name _____

Q#1: DBMS provide interface to retrieve, manipulate and _____ data
Q#2: LIMIT, FROM, WHERE , HAVING, GROUP BY, SELECT ,arrange these keywords according to execution
Q#3: Describe the differences in meaning between the tuple and feature
Q#4: When would you use the HAVING clause instead of the WHERE clause in a query?
Q#5: Explain, SELECT name FROM people WHERE name NOT LIKE '%Ade'
Q#6: How UNION is different from UNION ALL _____
Q#7: Describe, SELECT COUNT (*) AS count_records FROM people; Provides _____
Q#8: Raw facts and figures are called _____
Q#9: SQL is the abbreviation of _____
Q#10: Data is stored in table, image, audio or csv format which is structured, unstructured and semi structured. Table _____, image _____, audio _____ csv _____

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Question#1: Explain the Query below (5)

```
SELECT name, rollnumber, MAX(gpa) AS max_gpa
FROM spring_23
GROUP BY SECTION
ORDER BY max_gpa DESC
```

Question#2: Consider tables above,

1. Write a Query to show which student is taking course with which teacher for example the output table contain roll_number, name and teacher_id also write output table (2+1)
2. Write a Query to Count number of students in student table. (2)
3. Write a Query to Show students' rollnumber and phonenumbers who are not registered in any course. (2)
4. Write a Query to Count the number of cities from where students are coming for study purpose, show the output. (2+1)

Table 1: students

roll_num	name	city	phone_num
S21BDOCS1M1001	Ali	BWP	03001234567
S21BDOCS1M1002	Hamza	BWP	03011234567
S21BDOCS1M1003	Ali	Multan	03021234567
S21BDOCS1M1004	Farhan	LHR	03031234567
S21BDOCS1M1005	Usman	ISB	03456825117

roll_num	teacher_id	course_Code
S21BDOCS1M1001	0156	COSC-2001
S21BDOCS1M1002	1456	COSC-2002
S21BDOCS1M1003	1234	COSC-2003

Table 2: courses

E_ID	E_Name	Department	Salary
1	Zohaib	HR	50000
2	Farhan	IT	70000
3	Hamza	Sales	45000
4	Ali	IT	80000
5	Usman	HR	55000

Table 3:employe

Question#3: List the names of employees whose salaries are below the average salary in their department.

1. Subquery Calculate the average salary for the department and show output (3+2)
2. Main Query - Use the result of the subquery to filter employees whose salary is below the average in his department and show output. (3+2)

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