

## DBMS – ASSIGNMENT 2

M.Tech. (CS), First Year, 2022–2023

**Deadline:** April 15, 2023

Total: 5 marks

### SUBMISSION INSTRUCTIONS

1. Submit all the solutions in a single file.
2. Naming convention for your submission file (assuming CS22xx is your roll number): CS22xx-assign2 (.rtf, .docx, .doc, .pdf, .tex, etc.).
3. To submit a solution file (say CS22xx-assign2.pdf), ensure that it is not password protected and mail to <assignisik@gmail.com> with the subject line as follows: DBMS M.Tech. (CS) 2022-24 CS22xx Assignment 2.

**NOTE:** All the solutions must be self-sufficient and to the point.

Q1. Consider the construction of the following tables.

```
/* Table of students */
create table student
( sno integer,
  sname varchar(10),
  age integer
)
```

```
/* Table of students and the courses they opt for */
create table opt
( sno integer,
  cno varchar(5)
)
```

```
insert into student values (1,'RAMA',20)
insert into student values (2,'SHYAM',21)
insert into student values (3,'RAHIM',20)
insert into student values (4,'MAGGIE',19)
insert into student values (5,'STEVE',22)
insert into student values (6,'JADU',18)
insert into student values (7,'BRIAN',21)
insert into student values (8,'MADHU',20)
insert into student values (9,'GILLIAN',20)
insert into student values (10,'BALBINDAR',21)
insert into opt values (1,'CS01')
```

```

insert into opt values (1,'CS02')
insert into opt values (1,'CS03')
insert into opt values (2,'CS01')
insert into opt values (3,'CS01')
insert into opt values (3,'CS03')
insert into opt values (4,'CS01')
insert into opt values (4,'CS02')
insert into opt values (5,'CS02')
insert into opt values (6,'CS02')
insert into opt values (6,'CS03')

```

- (i) Suppose you want to find students who do not opt for CS01, but the following query is returning the wrong results:

```

select *
from student
where sno in ( select sno
from opt
where cno != 'CS01' )

```

Can you explain why the above query is erroneous? Write an appropriate query in SQL for the given task.

- (ii) You want to find students who opt for CS01 or CS03 but not both, but the following query is returning the wrong results:

```

select *
from student
where sno in ( select sno
from opt
where cno != 'CS01'
and cno != 'CS03' )

```

Can you explain why the above query is erroneous? Write an appropriate query in SQL for the given task.

- (iii) You want to find students who opt for CS01 and no other courses, but the following query is returning the wrong results:

```

select s.*
from student s, opt t
where s.sno = t.sno
and t.cno = 'CS01'

```

Can you explain why the above query is erroneous? Write an appropriate query in SQL for the given task.