DBMS LAB ASSIGNMENT-4

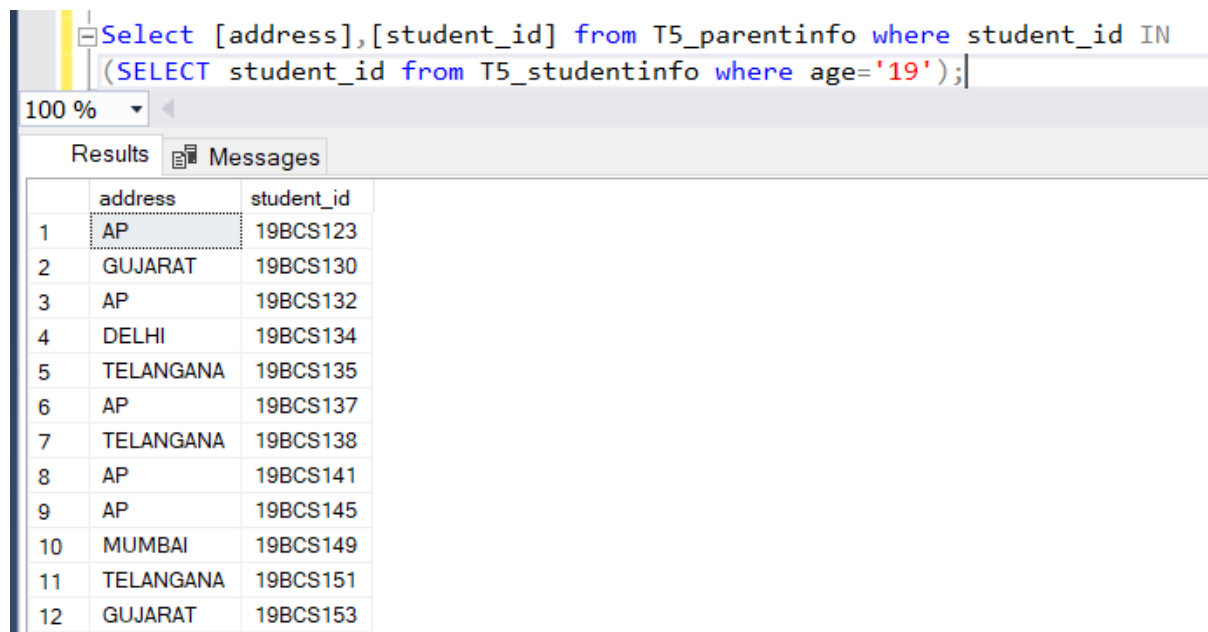**Name:** M.Anupama

Roll No: 19BCS123

Group No: 5

1)

Write 5 Nested Queries for your respective database- the queries should not be very similar like just changing the where clause or just building all the queries on only one or two tables etc. The queries should make sense, it should cover most part of your database tables.

QUERY1)

```
Select [address],[student_id] from T5_parentinfo where student_id IN
(SELECT student_id from T5_studentinfo where age='19');
```

OUTPUT:

QUERY2)

```
Select * from T5_staff where teacher_id IN
(Select teacher_id from T5_course_staff where student_id IN
(select student_id from T5_courses where course_id='CS201' or course_id='CS210'));
```

OUTPUT:

```
Select * from T5_staff where teacher_id IN
  (Select teacher_id from T5_course_staff where student_id IN
  (select student_id from T5_courses where course_id='CS201' or course_id='CS210'));
```

	teacher_id	teacher_name	salary	teacher_email_id	teacher_ph_no
1	CS01	RAM	35000	ram@iiitdwd.ac.in	1237849322
2	CS02	ARJUN	40000	arjun@iiitdwd.ac.in	1245784209
3	CS03	BHUVAN RAJ	35000	bhuvan@iiitdwd.ac.in	9065438892
4	CS04	CAMELLA	35000	camella@iiitdwd.ac.in	6737849322
5	CS05	NIVEDITHA	45000	niveditha@iiitdwd.ac.in	1237890322
6	CS10	PRANAY	35000	pranay@iiitdwd.ac.in	9980849322

QUERY3)

Select student_id,parent_mobile_no from T5_parentinfo where student_id NOT IN
(Select student_id from T5_courses where course_id IN
(select course_id from T5_course_staff where grade='c' or grade='B-'));

OUTPUT:

```
Select student_id,parent_mobile_no from T5_parentinfo where student_id NOT IN
  (Select student_id from T5_courses where course_id IN
  (select course_id from T5_course_staff where grade='c' or grade='B-'));
```

	student_id	parent_mobile_no
1	19BCS131	8899007762
2	19BCS133	8899007756
3	19BCS136	8899007758
4	19BCS137	9870932235
5	19BCS138	9086235637
6	19BCS141	8899007235
7	19BCS146	8899080766
8	19BCS147	2509875466
9	19BCS148	8891107766
10	19BCS152	9950453218
11	19BCS153	8796530021

QUERY4)

Select teacher_name,teacher_id from T5_staff where NOT EXISTS
(select * from T5_course_staff where
T5_staff.teacher_id=T5_course_staff.teacher_id);

OUTPUT:

```sql
Select teacher_name,teacher_id from T5_staff where NOT EXISTS
( select * from T5_course_staff where T5_staff.teacher_id=T5_course_staff.teacher_id);
```

100 %

▦ Results | 📄 Messages

	teacher_name	teacher_id
1	THOMAS	CS06
2	JACK	CS07
3	KARAN	CS08
4	KIRAN	CS09
5	SAHEEBA	EC01
6	PREETHI RAJ	EC02
7	BHUVI	EC03
8	ANANYA	EC04
9	MADHU	EC05
10	LALITH PANDEY	EC06
11	THANUJA	EC07
12	JAGADISH RAM	EC10
13	PRAKASH SINGH	ECO8
14	GEETHA	ECO9

QUERY5)

Select student_id,first_name,last_name from T5_studentinfo where student_id IN
(Select student_id from T5_course_staff where EXISTS
(select * from T5_courses where
T5_course_staff.course_id=T5_courses.course_id));

OUTPUT:

```sql
Select student_id,first_name,last_name from T5_studentinfo where student_id IN
(Select student_id from T5_course_staff where EXISTS
( select * from T5_courses where T5_course_staff.course_id=T5_courses.course_id));
```

100 %

▦ Results | 📄 Messages
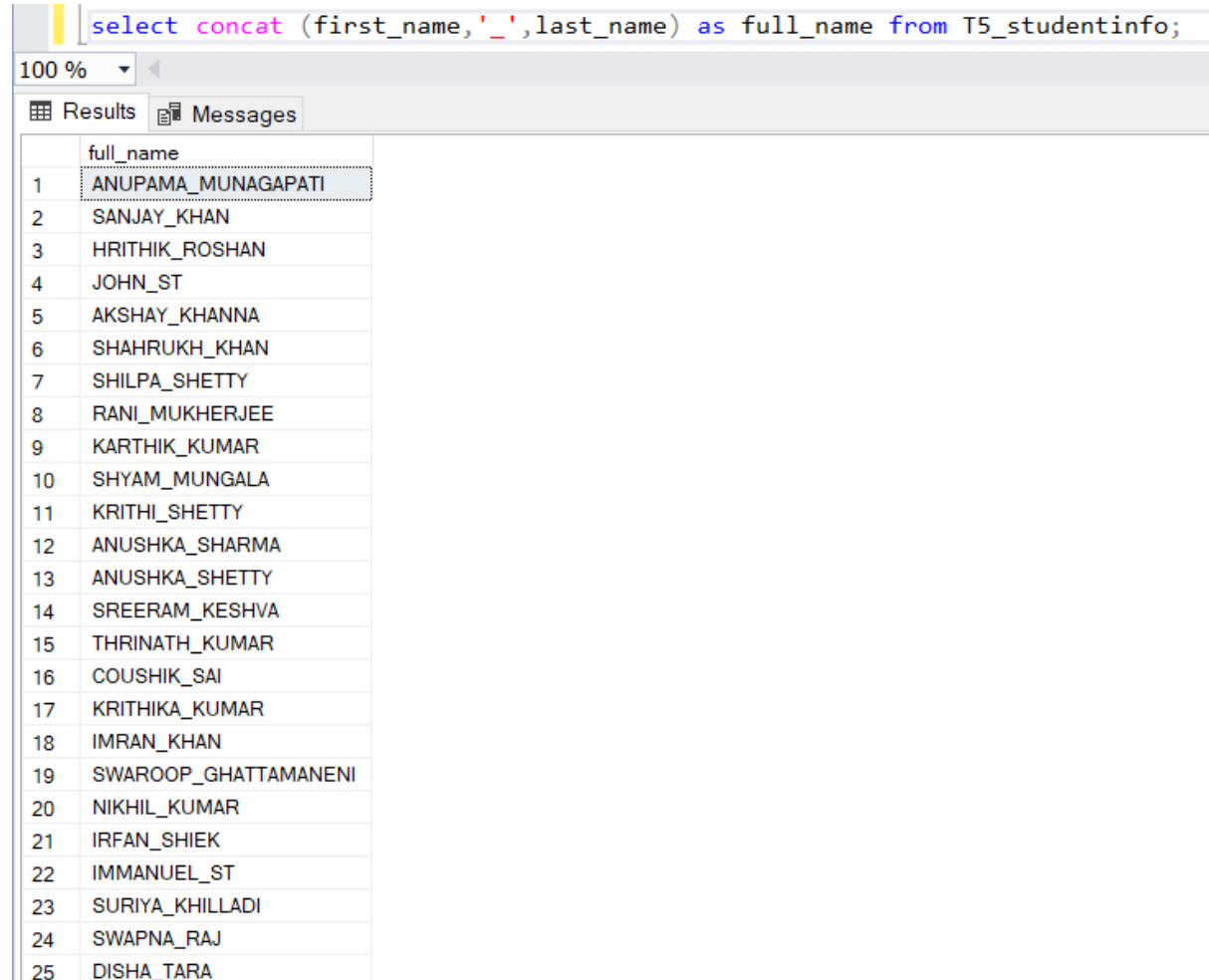
	student_id	first_name	last_name
1	19BCS123	ANUPAMA	MUNAGAPATI
2	19BCS130	SANJAY	KHAN
3	19BCS132	JOHN	ST
4	19BCS133	AKSHAY	KHANNA
5	19BCS134	SHAHRUKH	KHAN
6	19BCS135	SHILPA	SHETTY
7	19BCS138	SHYAM	MUNGALA
8	19BCS139	KRITHI	SHETTY
9	19BCS140	ANUSHKA	SHARMA
10	19BCS141	ANUSHKA	SHETTY
11	19BCS142	SREERAM	KESHVA
12	19BCS143	THRINATH	KUMAR
13	19BCS144	COUSHIK	SAI
14	19BCS145	KRITHIKA	KUMAR

2) Illustrate how we can use Concat and As operators in SQL (minimum 3 queries)

QUERY1)

```sql
select concat (first_name,'_',last_name) as full_name from T5_studentinfo;
```

OUTPUT:

```sql
select concat (first_name,'_',last_name) as full_name from T5_studentinfo;
```

100 %

▦ Results 📄 Messages

	full_name
1	ANUPAMA_MUNAGAPATI
2	SANJAY_KHAN
3	HRITHIK_ROSHAN
4	JOHN_ST
5	AKSHAY_KHANNA
6	SHAHRUKH_KHAN
7	SHILPA_SHETTY
8	RANI_MUKHERJEE
9	KARTHIK_KUMAR
10	SHYAM_MUNGALA
11	KRITHI_SHETTY
12	ANUSHKA_SHARMA
13	ANUSHKA_SHETTY
14	SREERAM_KESHVA
15	THRINATH_KUMAR
16	COUSHIK_SAI
17	KRITHIKA_KUMAR
18	IMRAN_KHAN
19	SWAROOP_GHATTAMANENI
20	NIKHIL_KUMAR
21	IRFAN_SHIEK
22	IMMANUEL_ST
23	SURIYA_KHILLADI
24	SWAPNA_RAJ
25	DISHA_TARA

QUERY2)

```sql
select concat (teacher_id,'_',teacher_name,'(ph:',teacher_ph_no,')')
    as teacher_contact_details,salary,teacher_email_id from T5_staff
```

OUTPUT:

```sql
select concat (teacher_id,'_',teacher_name,'(ph:',teacher_ph_no,')')
    as teacher_contact_details,salary,teacher_email_id from T5_staff
```

100 %

▦ Results ▩ Messages

	teacher_contact_details	salary	teacher_email_id
1	CS01_RAM(ph:1237849322)	35000	ram@iiitdwd.ac.in
2	CS02_ARJUN(ph:1245784209)	40000	arjun@iiitdwd.ac.in
3	CS03_BHUVAN RAJ(ph:9065438892)	35000	bhuvan@iiitdwd.ac.in
4	CS04_CAMELLA(ph:6737849322)	35000	camella@iiitdwd.ac.in
5	CS05_NIVEDITHA(ph:1237890322)	45000	niveditha@iiitdwd.ac.in
6	CS06_THOMAS(ph:1237509322)	40000	thomas@iiitdwd.ac.in
7	CS07_JACK(ph:1237222322)	35000	jack@iiitdwd.ac.in
8	CS08_KARAN(ph:5677849322)	35000	karan@iiitdwd.ac.in
9	CS09_KIRAN(ph:1099849322)	50000	kiran@iiitdwd.ac.in
10	CS10_PRANAY(ph:9980849322)	35000	pranay@iiitdwd.ac.in
11	EC01_SAHEEBA(ph:9887849322)	35000	saheeba@iiitdwd.ac.in
12	EC02_PREETHI RAJ(ph:1249849322)	30000	preethiR@iiitdwd.ac.in
13	EC03_BHUVI(ph:1098849322)	35000	bhuvi@iiitdwd.ac.in
14	EC04_ANANYA(ph:1210949322)	45000	ananya@iiitdwd.ac.in
15	EC05_MADHU(ph:1237109322)	35000	madhu@iiitdwd.ac.in
16	EC06_LALITH PANDEY(ph:3867849322)	35000	lalith@iiitdwd.ac.in
17	EC07_THANUJA(ph:1231234322)	40000	thanuja@iiitdwd.ac.in
18	EC10_JAGADISH RAM(ph:1230045322)	35000	jagadish@iiitdwd.ac.in
19	ECO8_PRAKASH SINGH(ph:9437849322)	45000	prakash@iiitdwd.ac.in
20	ECO9_GEETHA(ph:1367849322)	30000	geetha@iiitdwd.ac.in

QUERY3)

```sql
select concat (student_id ,' got ',grade,' with ',marks,' marks in ',course_id)
    as grade_info,* from T5_grades
```

OUTPUT:

```
select concat (student_id ,' got ',grade,' with ',marks,' marks in ',course_id)
    as grade_info,* from T5_grades
```

100 %

Results | Messages

	grade_info	marks	grade	course_id	student_id
1	19BCS133 got A- with 86 marks in CS201	86	A-	CS201	19BCS133
2	19BCS138 got A- with 85 marks in CS201	85	A-	CS201	19BCS138
3	19BCS140 got A- with 89 marks in CS201	89	A-	CS201	19BCS140
4	19BCS141 got A with 91 marks in CS201	91	A	CS201	19BCS141
5	19BCS142 got A- with 84 marks in CS201	84	A-	CS201	19BCS142
6	19BCS123 got A with 90 marks in CS210	90	A	CS210	19BCS123
7	19BCS130 got B with 69 marks in CS210	69	B	CS210	19BCS130
8	19BCS132 got C with 59 marks in CS210	59	C	CS210	19BCS132
9	19BCS134 got A with 93 marks in CS210	93	A	CS210	19BCS134
10	19BCS135 got B- with 78 marks in CS210	78	B-	CS210	19BCS135
11	19BCS139 got A- with 88 marks in CS210	88	A-	CS210	19BCS139
12	19BCS140 got A with 92 marks in CS210	92	A	CS210	19BCS140
13	19BCS142 got C with 55 marks in CS210	55	C	CS210	19BCS142
14	19BCS143 got B with 67 marks in CS210	67	B	CS210	19BCS143
15	19BCS145 got B with 65 marks in CS210	65	B	CS210	19BCS145
16	19BCS123 got A- with 89 marks in CS211	89	A-	CS211	19BCS123
17	19BCS144 got B- with 77 marks in CS211	77	B-	CS211	19BCS144

3)Illustrate all the Comparison operator.

FOR '>':

QUERY1)

```
select count(*) from T5_staff where salary>35000
```

OUTPUT:

```
select count(*) from T5_staff where salary>35000
```

100 %

Results | Messages

	(No column name)
1	7

QUERY2)

```
select * from T5_staff where teacher_id>'CS09'
```

OUTPUT:

```
select * from T5_staff where teacher_id>'CS09'
```

100 %

Results | Messages

	teacher_id	teacher_name	salary	teacher_email_id	teacher_ph_no
1	CS10	PRANAY	35000	pranay@iiitdwd.ac.in	9980849322
2	EC01	SAHEEBA	35000	saheeba@iiitdwd.ac.in	9887849322
3	EC02	PREETHI RAJ	30000	preethiR@iiitdwd.ac.in	1249849322
4	EC03	BHUVI	35000	bhuvi@iiitdwd.ac.in	1098849322
5	EC04	ANANYA	45000	ananya@iiitdwd.ac.in	1210949322
6	EC05	MADHU	35000	madhu@iiitdwd.ac.in	1237109322
7	EC06	LALITH PANDEY	35000	lalith@iiitdwd.ac.in	3867849322
8	EC07	THANUJA	40000	thanuja@iiitdwd.ac.in	1231234322
9	EC10	JAGADISH RAM	35000	jagadish@iiitdwd.ac.in	1230045322
10	ECO8	PRAKASH SINGH	45000	prakash@iiitdwd.ac.in	9437849322
11	ECO9	GEETHA	30000	geetha@iiitdwd.ac.in	1367849322

FOR '<':

QUERY1)

```
select * from T5_grades where marks<85
```

OUTPUT:

```
select * from T5_grades where marks<85
```

100 %

Results | Messages

	marks	grade	course_id	student_id
1	84	A-	CS201	19BCS142
2	69	B	CS210	19BCS130
3	59	C	CS210	19BCS132
4	78	B-	CS210	19BCS135
5	55	C	CS210	19BCS142
6	67	B	CS210	19BCS143
7	65	B	CS210	19BCS145
8	77	B-	CS211	19BCS144

QUERY2)

```
select course_year,student_id from T5_courses where course_year<3
```

OUTPUT:

```
select course_year,student_id from T5_courses where course_year<3
```

100 %

▦ Results ▤ Messages

	course_year	student_id
1	2	19BCS123
2	2	19BCS123
3	2	19BCS130
4	2	19BCS132
5	2	19BCS133
6	2	19BCS134
7	2	19BCS135
8	2	19BCS138
9	2	19BCS139
10	2	19BCS140
11	2	19BCS140
12	2	19BCS141
13	2	19BCS142
14	2	19BCS142
15	2	19BCS143
16	2	19BCS144
17	2	19BCS144
18	2	19BCS145
19	2	19BCS145
20	2	19BCS147
21	2	19BCS149
22	2	19BCS150
23	2	19BCS151

FOR '>=':

QUERY1)

```
select * from T5_studentinfo where student_id>='19BCS140'
```

OUTPUT:

```
select * from T5_studentinfo where student_id>='19BCS140'
```

100 %

Results | **Messages**

	student_id	first_name	last_name	email_id	ph_no	study_year	DOB	age
1	19BCS140	ANUSHKA	SHARMA	19bcs140@iiitdwd.ac.in	9665894362	2	2001-10-08	20
2	19BCS141	ANUSHKA	SHETTY	19bcs141@iiitdwd.ac.in	9887065432	2	2002-10-06	19
3	19BCS142	SREERAM	KESHVA	19bcs142@iiitdwd.ac.in	9507763210	2	2001-11-08	20
4	19BCS143	THRINATH	KUMAR	19bcs143@iiitdwd.ac.in	8076995430	2	2001-04-18	20
5	19BCS144	COUSHIK	SAI	19bcs144@iiitdwd.ac.in	9440996234	2	2001-09-19	20
6	19BCS145	KRITHIKA	KUMAR	19bcs145@iiitdwd.ac.in	9079054670	2	2002-10-27	19
7	19BCS146	IMRAN	KHAN	19bcs146@iiitdwd.ac.in	7906695449	2	2001-12-20	20
8	19BCS147	SWAROOP	GHATTAMANENI	19bcs147@iiitdwd.ac.in	9008796654	2	2001-02-23	20
9	19BCS148	NIKHIL	KUMAR	19bcs148@iiitdwd.ac.in	9778054398	2	2001-11-12	20
10	19BCS149	IRFAN	SHIEK	19bcs149@iiitdwd.ac.in	7789054678	2	2002-12-04	19
11	19BCS150	IMMANUEL	ST	19bcs150@iiitdwd.ac.in	8859034218	2	2001-07-27	20
12	19BCS151	SURIYA	KHILLADI	19bcs151@iiitdwd.ac.in	9075428944	2	2002-07-25	19
13	19BCS152	SWAPNA	RAJ	19bcs152@iiitdwd.ac.in	8992458870	2	2001-09-07	20
14	19BCS153	DISHA	TARA	19bcs153@iiitdwd.ac.in	8899225078	2	2002-10-10	19

QUERY2)

select parent_name,parent_mobile_no from T5_parentinfo where student_id>='19BCS145'

OUTPUT:

```
select parent_name,parent_mobile_no from T5_parentinfo where student_id>='19BCS145'
```

100 %

Results | **Messages**

	parent_name	parent_mobile_no
1	GOVINDH	8899000751
2	ALI	8899080766
3	RAAVAN	2509875466
4	RAMANUJAN	8891107766
5	ARJITH	8892207766
6	JENNIFER	8811117766
7	LALITH KUMAR	8899010366
8	JYOTHI MOHAN	9950453218
9	KARTHIKEYA	8796530021

FOR '<=':

QUERY1)

select course_id,course_name,student_id from T5_courses where course_year<='4'

OUTPUT:

```
select course_id,course_name,student_id from T5_courses where course_year<='4'
```

100 %

☰ Results   Messages

	course_id	course_name	student_id
1	CS210	TOC	19BCS123
2	CS211	DBMS	19BCS123
3	CS210	TOC	19BCS130
4	CS210	TOC	19BCS132
5	CS201	MATHS	19BCS133
6	CS210	TOC	19BCS134
7	CS210	TOC	19BCS135
8	CS201	MATHS	19BCS138
9	CS210	TOC	19BCS139
10	CS201	MATHS	19BCS140
11	CS210	TOC	19BCS140
12	CS201	MATHS	19BCS141
13	CS201	MATHS	19BCS142
14	CS210	TOC	19BCS142
15	CS210	TOC	19BCS143
16	CS210	TOC	19BCS144
17	CS211	DBMS	19BCS144
18	CS210	TOC	19BCS145
19	CS211	DBMS	19BCS145
20	CS201	MATHS	19BCS147
21	CS210	TOC	19BCS149
22	CS211	DBMS	19BCS150
23	CS211	DBMS	19BCS151

QUERY2)

select count(*) from T5_staff where salary<=35000

OUTPUT:

```
select count(*) from T5_staff where salary<=35000
```

100 %

☰ Results   Messages

	(No column name)
1	13

QUERY1)

select * from T5_course_staff where grade='A-'

OUTPUT:

```
select * from T5_course_staff where grade='A-'
```

100 %

Results | Messages

	grade	student_id	course_id	teacher_id
1	A-	19BCS133	CS201	CS02
2	A-	19BCS138	CS201	CS03
3	A-	19BCS140	CS201	CS03
4	A-	19BCS142	CS201	CS02
5	A-	19BCS139	CS210	CS05
6	A-	19BCS123	CS211	CS02

QUERY2)

```
select student_id,grade,marks from T5_grades where course_id='CS210'
```

OUTPUT:

```
select student_id,grade,marks from T5_grades where course_id='CS210'
```

100 %

Results | Messages

	student_id	grade	marks
1	19BCS123	A	90
2	19BCS130	B	69
3	19BCS132	C	59
4	19BCS134	A	93
5	19BCS135	B-	78
6	19BCS139	A-	88
7	19BCS140	A	92
8	19BCS142	C	55
9	19BCS143	B	67
10	19BCS145	B	65

FOR '<>':

QUERY1)

```
select count(*) from T5_courses where course_name<>'MATHS'
```
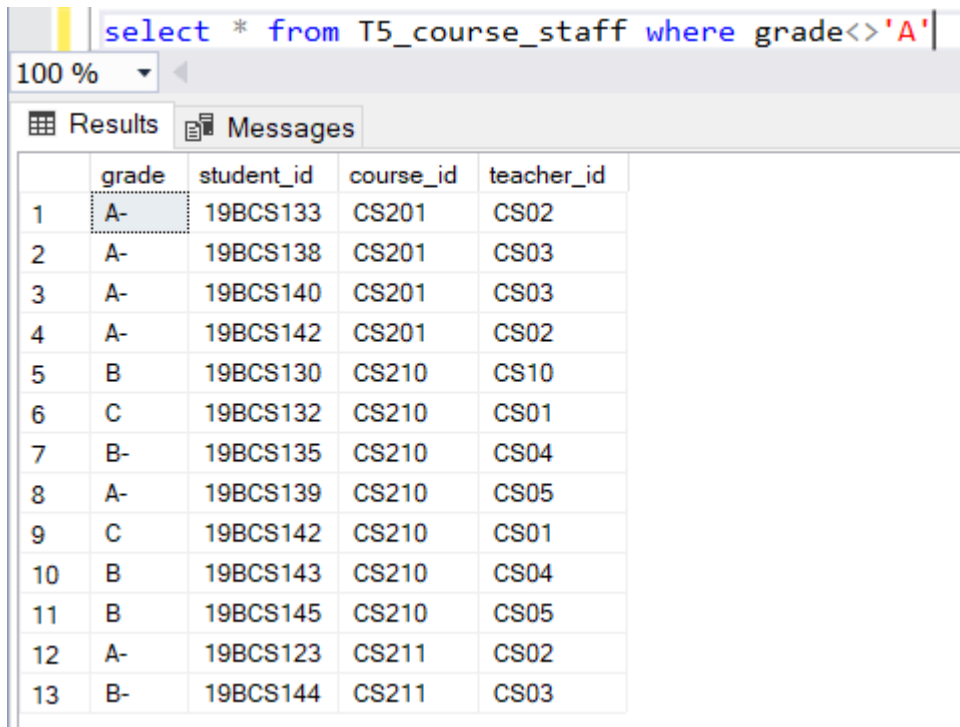
OUTPUT:

```
select count(*) from T5_courses where course_name<>'MATHS'
```

100 %

Results | Messages

	(No column name)
1	17

QUERY2)

```
select * from T5_course_staff where grade<>'A'
```

OUTPUT:

```
select * from T5_course_staff where grade<>'A'
100 %    ▾ ◂
```

| ⊞ Results | 🔲 Messages |

	grade	student_id	course_id	teacher_id
1	A-	19BCS133	CS201	CS02
2	A-	19BCS138	CS201	CS03
3	A-	19BCS140	CS201	CS03
4	A-	19BCS142	CS201	CS02
5	B	19BCS130	CS210	CS10
6	C	19BCS132	CS210	CS01
7	B-	19BCS135	CS210	CS04
8	A-	19BCS139	CS210	CS05
9	C	19BCS142	CS210	CS01
10	B	19BCS143	CS210	CS04
11	B	19BCS145	CS210	CS05
12	A-	19BCS123	CS211	CS02
13	B-	19BCS144	CS211	CS03

4) Illustrate Logical operators except ANY, ALL and Like (2 queries for each operator)

QUERIES:

i)

```
select * from T5_grades where grade='A' OR course_id='CS210'
```

OUTPUT:

```
select * from T5_grades where grade='A' OR course_id='CS210'
```

100 % ▾ ◂

Results | **Messages**

	marks	grade	course_id	student_id
1	91	A	CS201	19BCS141
2	90	A	CS210	19BCS123
3	69	B	CS210	19BCS130
4	59	C	CS210	19BCS132
5	93	A	CS210	19BCS134
6	78	B-	CS210	19BCS135
7	88	A-	CS210	19BCS139
8	92	A	CS210	19BCS140
9	55	C	CS210	19BCS142
10	67	B	CS210	19BCS143
11	65	B	CS210	19BCS145

ii)

i*select * from T5_course_staff where teacher_id='CS02' OR course_id='CS201' OR grade='A'*

OUTPUT:

```
select * from T5_course_staff where teacher_id='CS02' OR course_id='CS201' OR grade='A'
```

100 % ▾ ◂

Results | **Messages**

	grade	student_id	course_id	teacher_id
1	A-	19BCS133	CS201	CS02
2	A-	19BCS138	CS201	CS03
3	A-	19BCS140	CS201	CS03
4	A	19BCS141	CS201	CS05
5	A-	19BCS142	CS201	CS02
6	A	19BCS123	CS210	CS01
7	A	19BCS134	CS210	CS03
8	A	19BCS140	CS210	CS04
9	A-	19BCS123	CS211	CS02

iii)

select first_name,last_name from T5_studentinfo
where age='19' and
student_id in(select student_id from T5_parentinfo where student_id>'19BCS130')

OUTPUT:

```
select first_name,last_name from T5_studentinfo
where age='19' and
student_id in(select student_id from T5_parentinfo where student_id>'19BCS130')
```

100 %

Results | Messages

	first_name	last_name
1	JOHN	ST
2	SHAHRUKH	KHAN
3	SHILPA	SHETTY
4	KARTHIK	KUMAR
5	SHYAM	MUNGALA
6	ANUSHKA	SHETTY
7	KRITHIKA	KUMAR
8	IRFAN	SHIEK
9	SURIYA	KHILLADI
10	DISHA	TARA

iv)

select * from T5_grades where marks NOT BETWEEN 80 and 90

OUTPUT:

```
select * from T5_grades where marks NOT BETWEEN 80 and 90
```

100 %

Results | Messages

	marks	grade	course_id	student_id
1	91	A	CS201	19BCS141
2	69	B	CS210	19BCS130
3	59	C	CS210	19BCS132
4	93	A	CS210	19BCS134
5	78	B-	CS210	19BCS135
6	92	A	CS210	19BCS140
7	55	C	CS210	19BCS142
8	67	B	CS210	19BCS143
9	65	B	CS210	19BCS145
10	77	B-	CS211	19BCS144

v)

select * from T5_course_staff where NOT course_id='CS210';

OUTPUT:

```sql
select * from T5_course_staff where NOT course_id='CS210';
```

	grade	student_id	course_id	teacher_id
1	A-	19BCS133	CS201	CS02
2	A-	19BCS138	CS201	CS03
3	A-	19BCS140	CS201	CS03
4	A	19BCS141	CS201	CS05
5	A-	19BCS142	CS201	CS02
6	A-	19BCS123	CS211	CS02
7	B-	19BCS144	CS211	CS03

vi)

```sql
select * from T5_courses where student_id BETWEEN '19BCS130' and '19BCS140'
```

OUTPUT:

```sql
select * from T5_courses where student_id BETWEEN '19BCS130' and '19BCS140'
```

	course_id	course_name	course_year	student_id
1	CS210	TOC	2	19BCS130
2	CS210	TOC	2	19BCS132
3	CS201	MATHS	2	19BCS133
4	CS210	TOC	2	19BCS134
5	CS210	TOC	2	19BCS135
6	CS201	MATHS	2	19BCS138
7	CS210	TOC	2	19BCS139
8	CS201	MATHS	2	19BCS140
9	CS210	TOC	2	19BCS140

vii)

```sql
select student_id,marks,grade from T5_grades where marks BETWEEN 60 and 85
```
OUTPUT:

```
select student id,marks,grade from T5 grades where marks BETWEEN 60 and 85
```

100 %

⊞ Results 📄 Messages

	student_id	marks	grade
1	19BCS138	85	A-
2	19BCS142	84	A-
3	19BCS130	69	B
4	19BCS135	78	B-
5	19BCS143	67	B
6	19BCS145	65	B
7	19BCS144	77	B-

viii)

```
select student_id,DOB from T5_studentinfo where age=20 and student_id
BETWEEN '19BCS140' and '19BCS150';
```

OUTPUT:

```
select student_id,DOB from T5_studentinfo where age=20 and student_id BETWEEN '19BCS140' and '19BCS150';
```

100 %

⊞ Results 📄 Messages

	student_id	DOB
1	19BCS140	2001-10-08
2	19BCS142	2001-11-08
3	19BCS143	2001-04-18
4	19BCS144	2001-09-19
5	19BCS146	2001-12-20
6	19BCS147	2001-02-23
7	19BCS148	2001-11-12
8	19BCS150	2001-07-27