

1. Apply the query tuning on following query and explain why your modification is more efficient?

2.

```
SELECT S_name, S_Phone, S_Age  
FROM STUDENT  
WHERE S_Age > 22 OR S_Phone like '0555%';
```

2. Consider the three transactions T1, T2, and T3, and the schedules S1 given below. Draw the serializability (precedence) graphs for S1 and state whether schedule is serializable or not. If a schedule is serializable, write down the equivalent serial schedule(s).

T1: r1(x); r1(z); w1(x)

T2: r2(z); r2(y); w2(z); w2(y)

T3: r3(x); r3(y); w3(y)

S1: r1(x); r2(z); r3(x); r1(z); r2(y); r3(y); w1(x); w2(z); w3(y); w2(y)

3. What is cautious waiting deadlock avoidance algorithm? Explain it.