

**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.**