Question 1: Given a database table "Students" which has four tuples given below, answer the questions stated:

Roll Number	Name	Dob
1	John	11-May-2000
2	Alice	11-May-2000
3	Alan	09-Dec-2003
4	Larry	05-Jan-2001

1. Which of the attributes/fields can be used as a primary key, and which cannot be used as a primary key considering the current state of the table? Justify your answer.
2. If roll number is being used as a primary key, will the following update to the table be allowed?
   Update Students
   Set Roll Number=3 where Roll Number=4

3. What will be the result of the following queries:
   - Select * From Students where 1=1
   - Delete from Students where Name is not "Larry" or dob="05-Jan-2001"

4. Suppose that there is another table StudentCourses which has information about the course that a student is taking.

Roll Number	Course Name
1	ICT
2	Programming Fundamentals

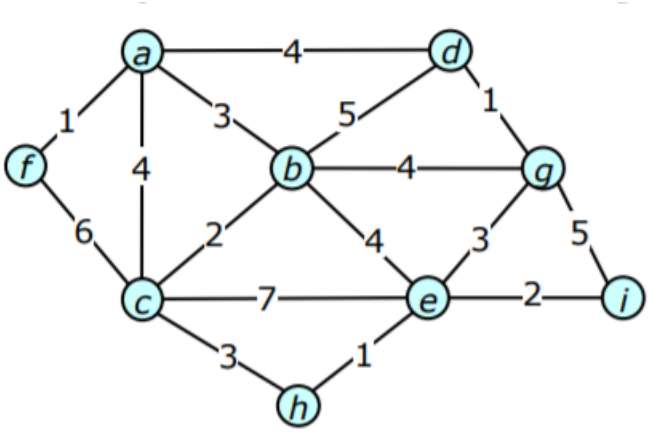
   What will be the result of the following query? Also give some explanation about the output, i.e.

   Select *

   From Students, StudentCourses

Question 2:

a. Convert the following graph into adjacency matrix form:



b. Convert the above undirected graph into directed graph such that the direction of each edge is from smaller alphabet node to a bigger alphabet node, i.e., if there is an edge between b and e, then the direction of this edge will be from b to e since b is a smaller alphabet and e is a bigger alphabet (in terms of ASCII values).

Question 3:

1. Explain the difference between preemptive and non-preemptive scheduling.
2. Explain the different between CPU time and turnaround time.

3. Assume that all processes arrive at the same time.

Process	Service Time (CPU Time)
P1	35s
P2	30s
P3	25s
P4	20s

i. Draw the gantt chart for first-come-first-served scheduling. Also calculate average turnaround time.
ii. Draw the gantt chart for shortest-job-first scheduling. Also calculate the average turnaround time.
iii. Draw the gantt chart for round robin scheduling. The value of time quantum will be 5 seconds. Also calculate the average turnaround time.