Please read the following assignment carefully & the questions have been asked at the end of the task. You should finish the following assignment in 60 minutes. Speak to the interview coordinator in case you have any doubts.

Section 1 - Queries

Consider the following employee data in relational tables and write queries for questions below the data:

Please note: Please don't take the data as it is mentioned in the table – it is a sample dataset. There can be more data in the table, please write your answers accordingly.

Please do not use CTE, Rank, Top, RowNum and LIMIT clauses!

Table Name: Employee

EMPLOYEE_ID FIRST_NAME LAST_NAME SALARY JOINING_DATE MANAGER DEPARTMENT 1 John Abraham 1000000 01-JAN-13 12.00.00 AM 3 Banking 2 Michael Clarke 800000 01-JAN-13 12.00.00 AM 4 Insurance 3 Roy Thomas 700000 01-FEB-13 12.00.00 AM Banking 4 Tom Jose 600000 01-FEB-13 12.00.00 AM Insurance 5 Jerry Pinto 650000 01-FEB-13 12.00.00 AM 4 Insurance 6 Philip Mathew 750000 01-JAN-13 12.00.00 AM 7 Services 7 TestName1 123 650000 01-JAN-13 12.00.00 AM Services 8 TestName2 Lname% 600000 01-FEB-13 12.00.00 AM 4 Insurance

Table Name: Incentives

EMPLOYEE_REF_ID INCENTIVE_DATE INCENTIVE_AMOUNT

1 06-FEB-13 5000

2 01-FEB-13 3000

3 07-FEB-13 4000

1 01-JAN-13 4500

2 04-JAN-13 3500

1 08-FEB-13 6000

1. Write a query to print the number of employees per department in the organization

ANS: SELECT Department, COUNT (Employee_Id) FROM Employee GROUP BY Department

2. Write an SQL query to find the name of the top-level manager of each department

ANS: SELECT First_Name, Last_Name, Department, MAX(Manager) FROM Employee GROUP BY Department

3. Write a query to find the total incentive received by a given employee in a given month.

Ans: SELECT SUM(Incentive_Amount) FROM Employee INNER JOIN Incentives ON Employee_Ref_ID = Employee_ID WHERE First_Name = ”John” AND MONTH(Incentive_Date) = ”JAN”

4. Write a query to find the month where employees got maximum incentive

ANS:SELECT MONTH (Incentive_Date), MAX(Incentive_Amount) FROM Employee, Incentives.

Section 2: Please read through the problems/questions and write down your answer.

5. You have two sand timers, which can show 4 minutes and 7 minutes respectively. Use both the sand timers (at a time or one after other or any other combination) and measure a time of 9 minutes.

ANS: Start both the timers at a time. Turn over the 4 m timer twice & so that when the 7m timer is over , flip it . There is sand remaining in the 4m timer for one minute.Start 7m timer and when one minute sand in 4m timer is over mark that point on 7m timer. We will get one minute marking on the 7m timer. Now start the 4m timer and then flip it over so that we get 4+ 4 = 8m and then start the 7m timer up to one minute mark , we will get: 4+4+1 = 9 minutes.

6. John and Mary are a married couple. They have two kids, one of them is a girl. Assume safely that the probability of each gender is 1/2.
What is the probability that the other kid is also a girl?

P(Both girls | At least one girl) = P(both girls) / P(At least one girl)

P(Both girls) = .5 * .5 = .25

P(At least one girl) = 1 - P(No girls)

P(No girls) = P(Both boys) = .5 * .5 = .25

P(AT least one girl) = 1 - .25 = .75

Thus, P(Both Girls | At least one girl) = .25 / .75 = 1/3

7. The following appeared as part of a campaign to sell advertising time on a local radio station to local businesses.

Ron's Cafe began advertising on our local radio station this year and was delighted to see its business increase by 10 percent over last year's totals. Their success shows you how you can use radio advertising to make your business more profitable.

Discuss how well reasoned you find this argument. In your discussion be sure to analyze the line of reasoning and the use of evidence in the argument. For

example, you may need to consider what questionable assumptions underline the thinking and what alternative explanations or counterexamples might weaken the conclusion. You can also discuss what sort of evidence would strengthen or refute the argument, what changes in the argument would make it more logically sound and what, if anything, would help you better evaluate in conclusion.