**LEADSQUARED ONLINE TEST**

**SECTION A- QUERIES**

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

**Sol-**

**select department, count(department) from employee group by department;**

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

**Sol-**

**SELECT INCENTIVE\_AMOUNT, INCENTIVE\_DATE**

**FROM EMPLOYEE INNER JOIN INCENTIVES**

**ON A. EMPLOYEE\_ID=B.EMPLOYEE\_REF\_ID**

**WHERE MAX(INCENTIVE\_AMOUNT);**

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

**Sol- SELECT INCENTIVE\_AMOUNT, INCENTIVE\_DATE**

**FROM EMPLOYEE INNER JOIN INCENTIVES**

**ON A. EMPLOYEE\_ID=B.EMPLOYEE\_REF\_ID**

**WHERE MAX(COUNT(INCENTIVE\_AMOUNT));**

**SECTION B**

**1. 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.**

**Solution –**

**1. Start the 7 minute timer and the 4 min sand timer.**

**2. Once the 4 min timer ends, turn it upside down instantly.**

**Time Elapsed: 4 minutes.**

***At this moment, 3 minutes of sand is left in the 7 min sand timer.***

**3. Once the 7 minute sand timer ends turn it upside down.**

**Time Elapsed: 7 minutes.**

***At this moment, 1 minutes of sand is left in the 4 minute sand timer.***

**4. After the 4 minute sand timer ends, only 1 minute is elapsed in 7 minute sand timer, therefore for another minute turn the 7 minute sand timer upside down.**

**Time Elapsed: 8 minutes.**

**5. When the 7 minute sand timer ends, total time elapsed is 9 minutes.**

**So effectively 8 + 1 = 9.**

**2. 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?**

***Solution - We can use conditioning to solve this:***

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

**P(Both girls) = 0.5 \* 0.5 = 0.25  
P(At least one girl) = 1 - P(No girls)  
P(No girls) = P(Both boys) = 0.5 \* 0 .5 = 0.25  
P(AT least one girl) = 1 - 0 .25 =0 .75**

**Thus, P(Both Girls | At least one girl) = 0.25 / 0.75 = 1/3**

**3. 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.**

**Solution – There are 3 points that are flawed in this criterion:**

**a) Here it is mentioned that Ron’s café increased its business by 10 % but the amount of profit here is mentioned but amount spent on the process of advertising is not. So, if we check background details the profit margin might be less or negligible.**

**b) This technique might not work for other businesses. This is probably because it depends on those who are listening to radio advertisements, they might be coffee enthusiasts and hence it made the impact . But argument is flawed to be sustained for other businesses.**

**c) There might be other reasons apart from radio advertisement for success of café. For ex- management of resources, new product introduction, creativity being added to existing products, so the entire 10 % or majority of it might not be due to the sole impact of advertising only.**

**So, if the above criteria and details are addressed then it might be better to prove to a conclusion of impact of radio advertising**