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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-1 EXAMINATION (February 2018)
B-Tech (6th SEM)

Course Code: **16B22CI621** Max. Marks: 15
Course Name: **DATA ANALYSIS AND SIMULATION TECHNIQUES**
Course Credit: 4 Max. Time: 1 HOUR

Note: All questions are Compulsory

Group-A (1 x 5 =5 marks)

1. **[CO-3]** Which statement is true? [H_0 is null hypothesis and H_1 is alternate hypothesis]
   a) H_0 is TRUE- do NOT reject H_0 is Type -1 error
   b) H_1 is TRUE – reject H_0 is Type-2 error
   c) H_1 is TRUE – do NOT reject H_0 is Type-2 error
   d) H_1 is TRUE – do NOT reject H_0 is Type-1 error
2. **[CO-3]** Increasing the size of critical region effects in
   a) Reduction in β
   b) Increases in β
   c) No change in β
   d) Reduction in **α**
3. **[CO-3]** when sample size is increased
   a) **α** is reduced
   b) β is reduced
   c) both a and b
   d) none of the above
4. **[CO-1]** Consider PRNG Using the Linear Congruential Method (LCM), for a=7, c=0 and m=32. The period is
   a) 13
   b) 4
   c) 11
   d) 7
5. **[CO-2]** Five numbers are given: (5, 10, 15, 5, 15). Now, what would be the sum of deviations of individual data points from their mean?
   a) 25
   b) 50
   c) 0
   d) None of the above

Group-B

6. **[CO-2]**In the context of Data Analysis discus Vertical Integration vs Horizontal Integration of data. What is Data Cleansing? Define Star Schema, Snowflake Schema, Fact Table, Dimension Table. **[5 marks]**
7. **[CO-1]** A) What is Balking and Renege in Queuing theory? **[2 marks]**

   B) The mean time between arrivals of customers in a bank is 3 minutes. Write the expression for the exponential distribution for average time between arrivals for any time t (t>=0).
   • If a customer has already arrived in the bank, what is the probability that the next customer will come after 10 minutes?
   • What is the probability that 5 customers will arrive in the one hour interval? **[3 marks]**