City University

Faculty of Science & Engineering

Department of Computer Science and Engineering

Program: B.Sc. in CSE

Class Test-2 Semester: Spring 2020

Course Code: **SE 401** Course Title: **Computer Simulation and Modelling**

Total Marks: 10 Duration: 1 hour

N.B: You have to attempt all the questions. Here for Ques-2 you can write any one.

1. 600 people (250 less than or equal to 20 years old, and 350 greater than 20 years old) were asked, "Which take-out food do you prefer - Fried Chicken, Burger or Chinese?"

	Chicken	Burger	Chinese
≤ 20	106	119	25
> 20	117	141	92

Calculate the value of correct to 1 decimal place.

2. Using a RNG we found the following values where $\alpha = 0.05$ and $Z_{\frac{\alpha}{2}} = 5.49$

.06, .02, .11, .56, .43, .15, .32, .82, .16, .39. Now, test whether the given number are independent or not by applying the Runs Up Test.

OR,

2. A coin was tossed 20 times and resulted in the following sequence where $Z_{\frac{\alpha}{2}} = 1.51$

H H T T H T H H H H T H H T T T T T H H. Now, Test whether the given number are independent or not by applying the Runs Up test.

3. Using a uniform distribution, we found the following 100 value where $\chi^2_{0.05,9} = 16.9$

.34, .90, .25, .89, .87, .44, .12, .21, .46, .67, .83, .76, .79, .64, .70, .81, .94, .74, .22, .74, .96, .99, .77, .67, .56, .41, .52, .73, .99, .02, .47, .30, .17, .82, .56, .05, .45, .31, .78, .05, .79, .71, .23, .19, .82, .93, .65, .37, .39, .42, .99, .17, .99, .46, .05, .66, .10, .42, .18, .49, .37, .51, .54, .01, .81, .28, .69, .34, .75, .49, .72, .43, .56, .97, .30, .94, .96, .58, .73, .05, .06, .39, .84, .24, .40, .64, .40, .19, .79, .62, .18, .26, .97, .88, .64, .47, .60, .11, .29, .78

Now, Test whether the given number are uniform or not by applying the chi square test.

4. The sequence of numbers ***0.54, 0.73, 0.98, 0.11, 0.68*** has been generated. Use the Kolmogorov-Smirnov (KS) test with α= 0.05 (Where, $D_\alpha = 0.565$) to check the uniformity.