**internal Assignment**

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| **SESSION** | **SEPTEMBER 2022** |
| **PROGRAM** | **BACHELOR of Computer applications (BcA)** |
| **SEMESTER** | **I** |
| **course CODE & NAME** | **Dca1103 – basic mathematics** |
| **CREDITS**  | **4** |
| **nUMBER OF ASSIGNMENTS & Marks** | **02****30 Marks each** |

**Note:** Answer all questions. Kindly note that answers for 10 marks questions should be approximately of 400 - 450 words. Each question is followed by evaluation scheme.

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| **ASSIGNMENT Set-I** |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **1.** | 1. It is known that in a sports club, there are 1000 registered members. 60% of members play Tennis, 50% of members play Cricket, 70% of members play Football, 20% of members play Tennis and Cricket, 40% of members play Cricket and Football and 30% of members play Football and Tennis. If someone claimed that 20% of members play all the three sports, what is your opinion and why? [Use inclusion and exclusion principle to provide your opinion]
2. By using truth tables, check whether the propositions and are logically equivalent or not?
 | **5+5** | **10** |
| **2.** | 1. Consider the set under multiplication modulo 18 as a group. Construct the multiplication table for *G* and find the inverse of each element of *G.*
2. If for a right-angle triangle, for the acute angle *,* then, find the values for&and show that *-*
3. Find the value of the constant , for which, the following function is continuous
 | **4+3+3** | **10** |
| **3.** | 1. Differentiate the following function with respect to the variable *.*
2. Evaluate the following definite integral
 | **5+5** | **10** |
| **ASSIGNMENT Set-II** |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **4.** | 1. The differential equation can made exact by multiplying with integrating factor . Then find the relation between and
2. Find one fourth roots of unity.
 | **5+5** | **10** |
| **5.** | 1. Solve the following system of equations by using the concept of matrices and determinants.
2. Find whether the following series are convergent or divergent
 | **5+5** | **10** |
| **6.** | 1. Bag I contain 3 red and 4 black balls and Bag II contain 4 red and 5 black balls. One ball is transferred from Bag I to Bag II and then a ball is drawn from Bag II. The ball so drawn is found to be red. Find the probability that the transferred ball is black.
2. The data for a commodity for seven consecutive days in a month is as follows

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Days (X)** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **Frequency (f)** | 240 | 260 | 270 | 245 | 255 | 286 | 264 |

Calculate Standard Deviation, Variance and coefficient of variation. | **5+5** | **10** |