IMSC. (MATHS & COMPUTING) - VI Sem.(SP/2020)
LAB. ASSIGNMENT 1

COMPUTING LAB – MATLAB (**IMM6004**)

Date of Allotment: **14/01/2020** Date of Completion: **21/01/2020**

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1. Evaluate the working of the following inbuilt functions with examples:
   (a) clc,clear all
   (b) input,ginput
   (c) disp, fprintf,sprintf
   (d) int2str,num2str
   (e) break,exit
   (f) realmin, realmax

   Write a program on the following and display the output:

2. Evaluate the expression $b - \dfrac{a}{b + \frac{c+a}{ca}}$ with $a = 3, b = 5, c = -3$.

3. Calculate the expression ${}^{n}C_{m}$ for a variety of values of m and n using loop control structure.

4. Determine the sum of the geometric progression $\sum_{i=1}^{n} r^i$, taking input n and r from the user. Also display the behavior of the series (convergence and divergence).

5. Calculate the sum $\sum_{n=0}^{k} e^{-n}$, taking k as input from the user. Compare the result with actual value ($k \to \infty$).

6. Evaluate the expression $\prod_{n=1}^{N} \left(1 + \dfrac{2}{n}\right)$ for input N taken from the user.

7. Using the following recursion formula, generate the terms of the sequence and the final sum

$$u_n = u_{n-1} + u_{n-2}, \ \forall\ n \geq 2.$$

8. Construct a conditional statement which evaluates the function:

$$f(x) = \begin{cases} 0 & x < 0 \\ x & 0 \leq x \leq 1 \\ 2 - x & 1 < x \leq 2 \\ 0 & x > 2 \end{cases}$$

9. Write out the values of x^3 for all positive integer values of x such that $x^3 < 2000$ using while loop.

10. Using switch case and if conditional statements, display the number of days in every month of a year. Also, put the condition on the leap year.