

## **SECOND PUC MATHEMATICS**

### **Assignments for First Quarter.**

**Demonstrate two of the following assignments selecting at least one from each part.**

#### **PART A**

- 1. Understanding and drawing graphs of Basic functions and checking the function as one one and onto with respect to their domain and range using graph of the functions.**
  - i)  $|x|$ ,  $|x|+1$ ,  $|x|-1$ ,  $|x-1|$   $|x+1|$  etc**
  - ii)  $[x]$ , greatest integer function.**
  - iii)  $2x$ ,  $3x$ ,  $x+1$ ,  $x-1$ ,  $2x-3$ , etc**
  - iv)  $x^2$ ,  $x^3$ ,  $x^2-1$ ,  $x^2+1$ ,  $x^3+1$ ...etc**
  - v)  $\sin x$ ,  $\cos x$ ,  $\tan x$ ,  $\sec x$ ,  $\operatorname{cosec} x$ ,  $\cot x$ .**
- 2. Drawing the graph of Inverse trigonometric functions  $\sin^{-1}x$  and  $\cos^{-1}x$  and solving the inequality  $\cos^{-1}x > \sin^{-1}x$ .**
- 3. Finding analytically the limit of a function  $f(x)$  at  $x=a$  and hence verifying the continuity of the function at that point.**

**e.g: consider the function  $f(x) = \begin{cases} \frac{x^2-4}{x-2}, & x \neq 2 \\ 4, & x = 2 \end{cases}$**

#### **PART B**

- 4. Write up on contribution of any two Indian Mathematicians.**
- 5. Using the Golden Ratio or the Fibonacci pattern, write up on demonstrating the interesting possibilities in art, music, nature or architecture etc.**
- 6. Why do you like Mathematics, write practical applications of what you have studied in PUC (any one concept)**