GVM's GGPR College of Commerce & Economics,
Farmagudi- Ponda, Goa.
B.C.A. (Semester II) Intra Semester Assessment (ISA) I- Test, January 2020

APPLIED MATHEMATICS

Duration: 45 minutes Marks: 20

Answer ANY 4 of the following: (4×5=20)

Q1.] If X={1,2,3,……..,15} is the universal set, A={1,3,5,8,9,10,12,15} B={2,3,4,6,8,9,10,11,13} C={1,2,5,8,9,14} Verify De-Morgan's law & Distributive laws.

Q2.] If X is the universal set and A & B are subset of X such that $n(X)$=99, $n(A^C)$=80, $n(B^C)$=85 and $n[(A \cap B)^C]$=94. Find $n(A \cup B)$.

Q3.] If $f(x) = x^2 + 3x - 5$, $0 \leq x \leq 6$ find $f(0), f(2), f(4), f(7)$, whenever they exist also find x if $f(x)$=35.

Q4.] Find f{g(x)} & g{f(x)} if

a) f(x)= x^2 g(x)= 5x-6

b) f(x)=x^2+4 g(x)= $\frac{1}{x}$

Q5.] Define an Equivalence Relation. Let A={x| x<4, x∈IN}. A relation R on the set A is given by R={(1,1,) (1,2) (2,1) (2,3) (3,2)} prove that R is symmetric relation but it is neither reflexive nor transitive.

Q6.] Prove that the relation R on the set of integer ℤ defined as $R = \{(x, y) | \ x - y \ is \ divisible \ by \ 3, x \in \mathbb{Z}, y \in \mathbb{Z}\}$ is an equivalence relation.
