Activity-1

1) What is Computational Intelligence? How does Computational Intelligence differ from Artificial Intelligence?
2) Draw the schematic diagram of an intelligent system and explain how it differs from traditional Expert System.
3) Briefly describe the difference between Soft Computing and Hard computing.
4) Define Membership function.Explain various types of one dimensional MFs with diagrams and mathematical expressions.
5) Describe 3 types of universes of discourse through suitable examples.
6) Obtain 0.4-cut and strong 0.4-cut for following fuzzy set:
   A=0.6/-3 + 0.5/-2 +0.2/-1 + 1/0 + 0.2/1 + 0.3/2 + 0.5/3 + 0.4 /4

7) Define the following terminologies of fuzzy set:

   i)Support
   ii)Core
   iii)Normality
   iv)Crossover points
   v)Fuzzy singleton
   vi)α-cut or α −level set
   vii)strong α-cut or strong α-level set
   viii)Convexity
   ix)Bandwidth or width of fuzzy set
   x)Symmetry

7) What are composite and non-composite membership function in fuzzy set theory?
8) For the following fuzzy sets, find Cartesian product and Cartesian co-product:
   A=0.5/x1 +0.4/x2 +0.7/x3 +1/x4 +0.6/x5 where xi ∈ X
   B=0.5/y1 +0.3/y2 +0.8/y3 +1/y4 +0.6/y5 where yi∈ Y
9) Find the width of A0.3 for a fuzzy set A defined by
   μ_A(x)=trapezoid(x;10,20,40,70)