**PA170 Computational Geometry**

**Questions, 17. 1. 2020**

1. Divide binary images to groups based on topological equivalence.
2. Compute intrinsic and extrinsic distance in binary image using given chamfer distance.
3. Define d4 metric and prove that it is a metric.
4. Define Hausdorff metric. What is used for? How can it be computed efficiently? What are advantages/disadvantages?
5. What is Euclidean distance transform. How can it be computed? Scratch the algorithm.
6. List three different methods for digital curve length estimation and briefly describe each method. Emphasise advantages and disadvantages of those methods.
7. Mark all simple pixels in given binary image.
8. Compute Euler characteristic of given binary image (point set).
9. Decide if (in given binary image) foreground pixels are convex set. If not, mark pixels that must be added. Justify your decision.