- **Lattice size : $L \times L$. Here L =(your roll number %5)+1)*100**
- **For showing power law, you have to use log-binning.**
- **Data points must be plotted in log-log scale**.

Q1: Consider a 2-d lattice. Numerically show, how cluster size distribution varies from subcritical to supercritical (via critical) regime? How does the distribution look like at critical point (where spanning cluster emerges)?
(At critical p, it should follow power law. Check the exponent at critical point.). Take p=p_c, p $= 0.3, p = 0.4,$ and $p = 0.7$. **Marks: 6.**

Q2: Plot the largest clusters as a function of occupation probability p. Consider $L \times L$, and $2L \times 2L$
Marks: 5.

Q3: Plot the histogram of two data sets (say population of each states in India, and in USA).
Check the density of those data sets follow power law or not. (You can choose your own data (two sets) as well. Say citation networks, earthquake etc.) **Marks 1.5+1.5=3.**