Code explanations are given in the comments of code .
Also some questions may take more time due to high complexity.

Q1.
I created a class for undirected graph. In which i added functions like **addNode ()** which basically add's a node to the graph , this can also be done by + operator (operator overloading).
Also __str__ method was added to print the undirected graph class object
Method to plot degree distribution was also added .
Exception handling was also done .
Q2.
Derived class for Undirected graph - ERrandom graph was created , we used random function in this class to add an edge between two vertices . random function will randomly return any value between 0 and 1 so, probability to get a value less than p is p only . so we add edge if value returned is less than p. In a way it simulates what we want in the question .
Q3.
To check if graph is connected i added a method isConnected in undirected graph class , the code iterate on various probability values and for each value calculates a erdos - renyi graph 1000 times and checks it's connectivity. To calculate final fraction.
Method isconnected in errandom graph class will do the required experiment of checking almost surely connected.
Also method isConnected in errandomgraph and isConnected in undirected graph class have same name this is done by method overriding.
Q4.
Method checkalmostsure was added to check
"If $p < 0.001$, the Erdős-Rényi random graph $G(1000, p)$ will almost surely have only small connected components. On the other hand, if $p > 0.001$, almost surely, there will be a single giant component containing a positive fraction of the vertices."

And another method oneTwoComponentSizes was added in the undirectedgraph class that returns size of largest and second largest component's size.

Q5.

show ,percolate and showPaths method was added in the class .as percolation was increased paths were not reaching the bottom.
Networkx's 2d grid was used for drawing.

Q6.

Lattice class was modified , things that were not necessary in this question like path,showPath were removed, method to check for the statement given in question was added .
50 iterations for each probability were done .