CS 528 Quiz 2, Time:3.05-3.50PM
Weightage-8%, each question carries 10 marks

1. Design an efficient algorithm for $P_m | p_j=1, \text{no-pmtn} | \sum w_j U_j$

2. Design an efficient approach to place **N** web-server tasks in virtual environments, such that it uses minimum number of server. Every tasks comes with CPU-utilization c_i and ($c_i+\delta<1$), and every server have CPU capacity **k** and **k>1**. Each task needs to execute on top of VM and every VM have CPU overhead of δ CPU-utilization. In a server multiple VM can run and share the CPU resources.

3. Suppose a cloud data centre service is used to host a movie, the parallel movie viewing rate for initial **10** days is given by **v(1-i/10)** for i^{th} day. A server can service only **r** requests simultaneously in parallel. Suppose server hiring cost (*per day*) is given by c_o+c_m*500/m per server where **m** is number of server need to be hired. *Calculate the price to host the servers using formulae.*