C8E 4549 - Simulation & Modeling 2020-21 Qu12 1 a) state Variables: server state xH), queue lingth qH) Output variables: di > delay of ithe job dn > max delay J → Overage delay C5 > # 8 jobs with more than 5 min dela Ce -># of jab leff C4 →# el + And job. events: assival, departure, leave, termination 6 (Z(1)+1, it arrival occurs and Z(1) ==0 c) if departure oceurs and q(t) == 0 x(f), Sturwise g(+)+1, if applied occurs and RA)==1 $q(\theta +) = \begin{cases} q(\theta) - 1, & \text{if departure occurs and } q(\theta) > 0 \end{cases}$ $S = \{ (0,0), (1,0), (1,1), (1,2), (1,3), \dots \}$ <u>a)</u> (departure Halda) (Arrival Hawder) Job aptroc) 11 create job up date Stat () job10++
job.10 = job1D job.dm = exp(u) //schedule next Arr L. cancel () t = rand Exp(x)a. scherule (t) process &ne C) 204)==0 Mchange State x(+) +=1 leave Harder que -> erqu (sob) puparte stat updateStat () $c_l + +;$ Jobln Serva Jobln Serva JOB YESWIF = 0 // schedule deporture E= uni (. 55m, 1.05m) dicancel () discharge (+) process Que () Vischedle leave l.schedule (m) Rehun

