

Name: _____

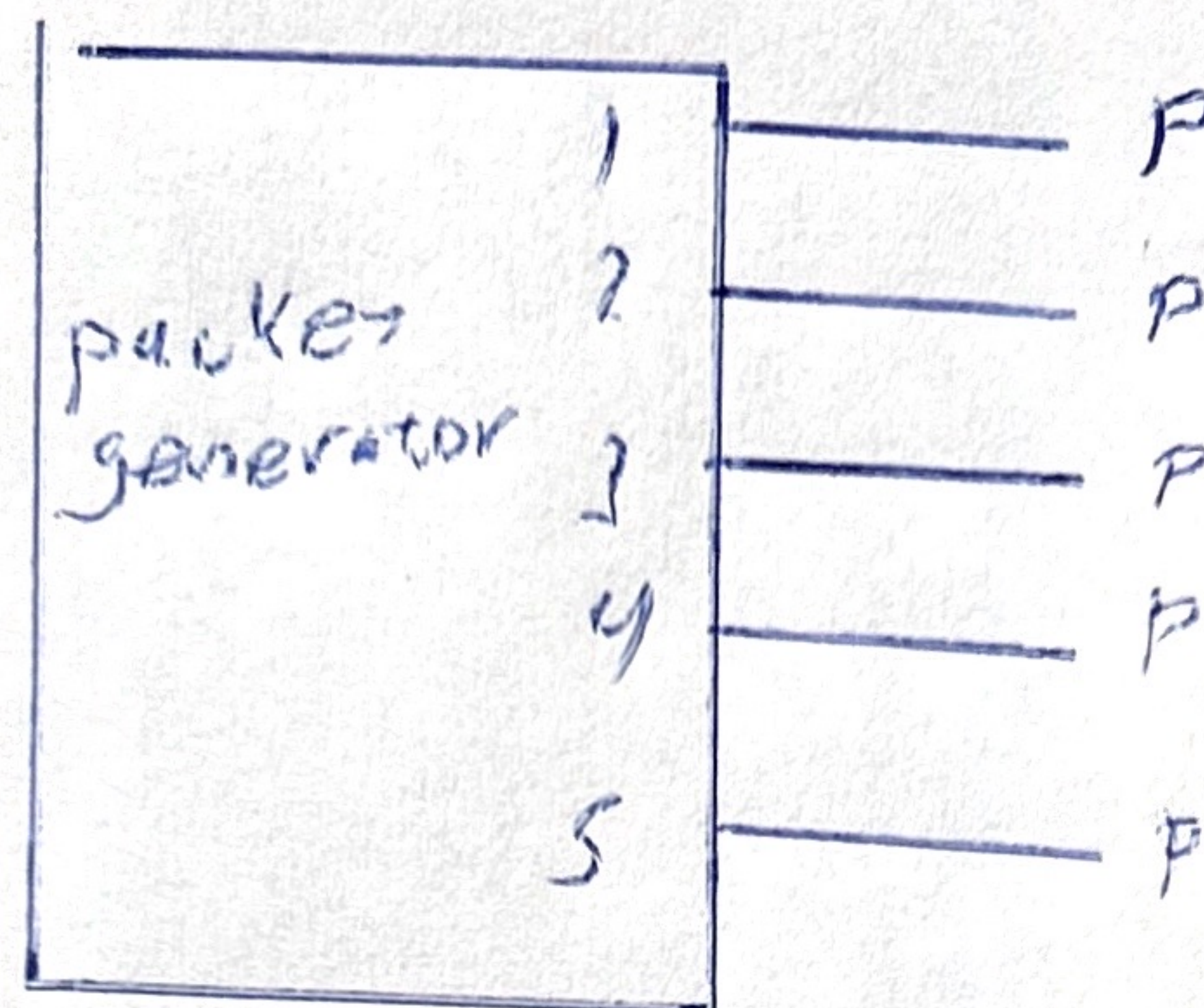
ESE346 Homework 2
2024

Robertazzi

Fall

Please answer questions on this sheet (write or type). Submit as pdf file to Brightspace.

A packet generator has 5 outputs. Each output produces a Bernoulli stream of packets (a single packet in a time slot with independent probability p and no packet in a time slot with independent probability $1-p$). Time slot boundaries are aligned across outputs.



- Write an expression for the probability that every output has a packet in three consecutive time slots. Show how it is derived.
- Write an expression for the probability in one time slot that there are 4 or 5 packets.
- In one time slot what is the throughput (average number of packets outputted per slot)? Answer can be very simple.