KFUPM | Term 111 | Date: 26/11/2011

Mathematics & Statistics | STAT 319 | Duration: 30 minutes

Quiz# 3

Name: ID #: Section 6 Serial #:

Q1 An electronic switching device occasionally malfunctions and may need to be replaced. It is known that the device is satisfactory if it makes, on the average, no more than 0.2 errors per hour. A particular 5-hour period is chosen as a "test" on the device. If no more than 1 error occurs, the device is considered satisfactory.

a. What is the probability that a satisfactory device will be considered unsatisfactory on the basis of the test?

b. If a sample of 7 devices is randomly selected, what is the probability that at least 2 of them will be considered unsatisfactory on the basis of the test?

P.T.O. →

c. If the devices are tested one by one, what is the probability that the first unsatisfactory device will be found on the 5^{th} test?

d. If a box with 20 such devices has 4 unsatisfactory ones, then what is the variance of the number of unsatisfactory devices in a sample of 8 devices randomly selected from the box?

With My Best Wishes