

Sri Lanka Institute of Information Technology



Lab Submission Lab sheet 06

IT24104110

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Probability and Statistics - IT2120

B.Sc. (Hons) in Information Technology

Exercise

1. i) What is the distribution of X?

X has binomial distribution with $n=50$ and $p=0.85$.

- ii) What is the probability that at least 47 students passed the test?

```
2 #01(ii)
3 pbinom(46,50,0.85,lower.tail = FALSE)

> pbinom(46,50,0.85,lower.tail = FALSE)
[1] 0.04604658
```

2. i) What is the random variable (X) for the problem?

The random variable(X) is the number of calls received in one hour.

- ii) What is the distribution of X?

The random variable(X) follows a Poisson distribution with $\lambda=12$.

- iii) What is the probability that exactly 15 calls are received in an hour?

```
> dpois(15,12)
[1] 0.07239112

5 #02(iii)
6 dpois(15,12)
```