

# Sri Lanka Institute of Information Technology



Lab Submission

<Lab sheets No 6>

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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?

```
5 #02(iii) > dpois(15,12)
6 dpois(15,12) [1] 0.07239112
```