

Sri Lanka Institute of Information Technology



Lab Submission
<Lab sheet 06>

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Probability and Statistics| IT2120

B.Sc. (Hons) in Information Technology

Exercise

1. i)

```
#Question 1
#i. What is the distribution of X?
#Binomial Distribution
#Random variable X has binomial distribution with n=50 and P=0.85
#X~Binomial(n=50,p=0.85)
```

ii)

```
#ii. What is the probability that at least 47 students passed the test?
#P(X>=47) =1-P(X<47)=1-(P<=46)
1-pbinom(46,50,0.85)
```

```
> 1-pbinom(46,50,0.85)
[1] 0.04604658
> |
```

2. i)

```
#Question 2
#i. What is the random variable (X) for the problem?
#Number of customer calls received per hour
```

ii)

```
#ii. What is the distribution of X?
#Poisson Distribution
#Here, random variable X has poisson distribution lambda=12
```

2. iii)

```
#iii. What is the probability that exactly 15 calls are received in an hour?  
#P(X=15)  
dpois(15,12)
```

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