Sri Lanka Institute of Information Technology

Lab Submission
<Lab 06>

<Manathunga. M.M.N.L>

<IT24104163>

Probability and Staticstics | IT2120

Exercise

01) i) , ii)

```
setwd("~/Desktop/IT24104163LAB 06")
getwd()
```

```
> setwd("~/Desktop/IT24104163LAB 06")
> getwd()
```

```
# Exercise
# Question 01

# i) , ii)
# Parameters
n <- 50        # number of students
p <- 0.85      # probability for pass

prob_least_47_pass <- pbinom(46, size = n, prob = p, lower.tail = FALSE)
cat("probability that at least 47 students passed the test = " , prob_least_47_pass, "\n"
```

```
> # Exercise
> # Question 01
>
> # i) , ii)
> # Parameters
> n <- 50        # number of students
> p <- 0.85      # probability for pass
>
> prob_least_47_pass <- pbinom(46, size = n, prob = p, lower.tail = FALSE)
> cat("probability that at least 47 students passed the test = " , prob_least_47_pass, "\n")
probability that at least 47 students passed the test =  0.04604658
```

Values	
a	10
b	3
lambda	12
max	-Inf
max_score	-Inf
n	50
names	chr [1:6] "Alice" "Bob" "Charlie" "Diana" …
p	0.85
passed	logi [1:6] TRUE TRUE FALSE TRUE FALSE TRUE
prob_15	0.0723911201466387
prob_47_or_more	0.0460465788923019
prob_least_47_p…	0.0460465788923019
scores	num [1:6] 85 90 78 92 70 88

02) i) ,ii), iii)

```
# Question 02
# i) ii) iii)

lambda <- 12
cat("X ~ Poisson(", lambda, ")\n")


prob_15 <- dpois(15, lambda)
cat("P(X = 15) =", prob_15, "\n")
```

```
> # Question 02
> # i) ii) iii)
>
> lambda <- 12
> cat("X ~ Poisson(", lambda, ")\n")
X ~ Poisson( 12 )
>
>
> prob_15 <- dpois(15, lambda)
> cat("P(X = 15) =", prob_15, "\n")
P(X = 15) = 0.07239112
>
```