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**NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL)** » **Data Science for Engineers (course)**

Announcements (announcements)     **About the Course (https://swayam.gov.in/nd1_noc20_cs28/preview)**

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# Unit 3 - Week 1

## Course outline

**How does an NPTEL online course work?**

**Week 0**

**Week 1**

● Data science for engineers Course philosophy and expectation (unit? unit=1&lesson=2)

○ Introduction to R (unit? unit=1&lesson=3)

○ Introduction to R (Continued) (unit? unit=1&lesson=4)

○ Variables and datatypes in R (unit? unit=1&lesson=5)

○ Data frames (unit? unit=1&lesson=6)

○ Recasting and joining of dataframes (unit? unit=1&lesson=7)

● Arithmetic,Logical and Matrix operations in R (unit? unit=1&lesson=8)

○ Advanced programming in R : Functions (unit? unit=1&lesson=9)

# Assignment 1

**The due date for submitting this assignment has passed.**     **Due on 2020-02-12, 23:59 IST.**
**As per our records you have not submitted this assignment.**

1) The value of "x" after running the code given below is -----      **1 point**

```
x=95
if(x<90){
        x=x^3
}else if(x>100){
        x= x^5
}else {
        x= x^2}
print(x)
```

○ 9025

○ True

○ 9211

○ 6325

No, the answer is incorrect.
Score: 0
Accepted Answers:
*9025*

2) The last value of sum and month printed is -----      **1 point**

```
n=5
sum=0
for(i in 1:11){
        sum=sum+(i^3)
        if (i %% 2 !=0)
            next
        print(c(month.abb[i+2],sum))
}
```

○ "Oct" "2025"

○ "Sep" "1296"

○ "Nov" "3025"

○ "Dec" "3025"

No, the answer is incorrect.
Score: 0

Accepted Answers:
*"Dec" "3025"*

3) Number of times the string "Thank you" will be printed when the below code is executed is----          *1 point*

```
n=25
sum=1
for (i in 1:n) {
        sum=sum*n
        if(sum >50)
        {
                print("Welcome")
        }
        else
        {
                print("Thank you")
        }
}
```

○ 3

○ 1

○ 4

○ 5

No, the answer is incorrect.
Score: 0

Accepted Answers:
*1*

4) In the R code given below, the value of "i" at which the loop breaks is ---          *1 point*

```
n=16
x = seq(1,n,2)
for (i in x) {
        if (i == 5){
                print(i)
                break
        }
}
```

○ 3

○ 5

○ 15

○ 25

No, the answer is incorrect.
Score: 0

Accepted Answers:
*5*

5) The value(s) of "y" at the end of the program given below is--          *1 point*

```
x1=matrix(10:18,3,3)
x2=matrix(11:19,3,3)
m =cbind(apply(x1,1,min),apply(x2,1,max))
print(m)

y =apply(m,2,mean)
print(y)
```

○ 11 18

○ 30 20 40

○ 13.5 14.5 15.5

○ 2 12

No, the answer is incorrect.
Score: 0

Accepted Answers:
*11 18*

6) What will be the output of the code given below                                **1 point**

```
x =c(3:8)
y =c(2,4,5)
x *y
```

○ Error!

○ 6  16 18 12

○ 6 16 25 12 28 40

○ 6  16  8  8

No, the answer is incorrect.
Score: 0

Accepted Answers:
*6 16 25 12 28 40*

7) The output displayed on running the code given below is                        **1 point**

```
runif(100)
```

○ Random numbers between -1 and 1

○ 100 random real numbers

○ Generates 100 uniform random numbers between 0 and 1

○ None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
*Generates 100 uniform random numbers between 0 and 1*

8) The data structures in R on which binary operators can be applied            **1 point**

○ Scalar

○ Vector

○ Matrices

○ All the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
*All the above*

9) Consider a list defined as below:                                             **1 point**

```
mylist=list("Ram","Harish","Pradeep",c("Python","Java","R"),"25","90","1
```

Choose the correct command to access  the element "R"

○ mylist[[2]][2]

○ mylist[[4]][3]

○ mylist[[3]][1]

○ None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
*mylist[[4]][3]*

10)Given the following line of code to generate matrix 'y', how would you subset the third row?        **1 point**

$$y <- matrix(nrow=3, ncol=3, 1:9)$$

○ y[3,]
○ y[,3]
○ y[3,2]
○ y(3,)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*y[3,]*

11)The correct command to build a matrix with numbers from 1 to 12, arranged row wise of size 3x4 and        **1 point**
name it as "A" is ----

○ A =matrix(c(1:12), nrow = 3, ncol = 4, byrow = F)
○ A =matrix(c(1:12), nrow = 3, ncol = 4, byrow = T)
○ A =matrix(c(1:12), nrow = 4, ncol = 3, byrow = T)
○ A =matrix(c(1:12), nrow = 1, ncol = 9, byrow = T)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*A =matrix(c(1:12), nrow = 3, ncol = 4, byrow = T)*

Using the matrix, $a = \begin{bmatrix} 52 & 42 & 53 & 21 & 63 \\ 14 & 26 & 77 & 32 & 12 \\ 13 & 18 & 23 & 28 & 33 \\ 14 & 19 & 24 & 29 & 34 \\ 15 & 20 & 25 & 30 & 35 \end{bmatrix}$ answer the questions from 12 to 16.

12)What is the output for the command "a[2:3]"        **1 point**

○ 26 77 32 12
○ 14 26 77 32 12
  13 18 23 28 33
○ 52 42 63
○ 14 13

No, the answer is incorrect.
Score: 0
Accepted Answers:
*14 13*

13)The expected output when the command "a[3,4]" is executed is        **1 point**

○ 56
○ 32
○ 33
○ 28

No, the answer is incorrect.
Score: 0
Accepted Answers:
*28*

14)The command to exclude the elements of 3rd row and select the rest of matrix is        **1 point**

○ a[-3,]
○ a[3,1:5]
○ a[3,]

○ a[2,0:4]

No, the answer is incorrect.
Score: 0
Accepted Answers:
*a[-3,]*

15)The command to extract the diagonal elements of matrix "a"                                    **1 point**

○ diag (a)

○ diagonal(x=a)

○ diag(x = a,nrow = 5,ncol = 5)

○ All the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*diag (a)*

16)The command to check if "a" is an object of matrix in R                                        **1 point**

○ is.matrix(a)

○ as.matrix(a)

○ is.matrix([a])

○ as.mat(a)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*is.matrix(a)*

17)User function that allows you to insert debugging code into a function to a specific place        **1 point**

○ debug()

○ trace()

○ recover()

○ None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
*trace()*

**Create a new data frame with the following variables.**

a = data.frame(x1= c("A","B","C"), x2=1:3)

b = data.frame(x1= c("A","B","D"), x2=c("Yes","No","Yes"))

**Answer the questions (18 to 20) based on the data frame created above.**

18)The command to join data frame "b" to "a" by x1 is ---                                          **1 point**

○ left_join(a,b,by='x1')

○ left_join(b,a,by='x1')

○ left.join(by='x1',a,b)

○ left_join(by='x2',b,a)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*left_join(a,b,by='x1')*

19)The command to join data frame "a" to "b" by x1 is ---                                          **0 points**

○ right.join(b,a,by='x2')

○ right_join(a,b,by='x1')

○ right_join(by='x1',a,b)

○ right.join(by='x1',b,a)

No, the answer is incorrect.
Score: 0
Accepted Answers:
*right_join(a,b,by='x1')*

20)The syntax to set the working directory in "R- studio" is ---      **1 point**

○ getwd("file path")

○ wd("file path")

○ currentwd("file path")

○ setwd("file path")

No, the answer is incorrect.
Score: 0
Accepted Answers:
*setwd("file path")*