

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-1 EXAMINATION- Feb., 2019

B.Tech. [8th Semester]

MAX. MARKS:15

P K Singh

COURSE NAME: R PROGRAMMING AND APPLICATIONS

COURSE CREDITS: 03

CODE: 18B1WCI842

MAX. TIME: 1 Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. (a) Based upon the below code, write the output [4 Marks]

Number of times the string "Apple is good" will be printed when the code below is executed is----

```
n = 5
sum = 1
while(n!=0)
{
    sum = sum*n
    print(sum)
    n = n - 1
    if(sum > 50)
    {
        print("Apple is good")
    }
    else
    {
        print("Apple is bad") } }
```

(b) Create a list using the vectors: subject, Ram & Geetha given below and name the list as "mylist"(without quotes).

subject = c("sub1","sub2","sub3"); Ram = c(83,30,78); Geetha=c(94,68,72)

Answer the questions 11 and 12 using the list created.

Choose the correct command to replace "30" with mean value of Geetha?

(i) mylist[[2]][2] = mean(Geetha) (ii) mylist[2][2] = mean.Geetha()

(iii) mylist[2,2] = Geetha.mean() (iv) mylist[[2]2] = mean(Geetha)

2. You have the results of simple experiments to look at the visitation of various bee species to different plants. The number of bees observed was as follows:

Buff tail: 10, 1, 37, 5,12

Garden bee: 8,3,19,6,4

Red tail: 18,9,1,2,4

Honeybee: 12,13,16,9,10

Carder bee: 8,27,6,32,23

Make five simple numeric vectors of these data. Now join the five vectors together to make a data frame. Each row of the resulting frame relates to specific plants so you could assign names to the rows. The plants names are Thistle, Vipers bugloss, Golden rain, Yellow alfalfa, and Blackberry. Use these names to create row labels for the data. [4 Marks]

3. Look at the Data Frame called mf that contains five column of data. Data values are given as follows:

| Length | Speed | Algae | NO3 | BOD |
|--------|-------|-------|------|-----|
| 20 | 12 | 40 | 2.25 | 200 |
| 21 | 14 | 45 | 2.15 | 180 |
| 22 | 12 | 45 | 1.75 | 135 |
| 23 | 16 | 80 | 1.95 | 120 |
| 21 | 20 | 75 | 1.95 | 110 |
| 20 | 21 | 65 | 2.75 | 120 |

Perform the following operations using the R Commands.

- (i) Pick out the item from the third row and third column
- (ii) Select the third row and display column one to four.
- (iii) Display all the rows by leaving out the first value; select the first column alone.
- (iv) Specify several rows but leave out a value at the end to display all columns.
- (v) Now specify several rows but use a -4 to indicate that you want to display all columns except the fourth. [4 Marks]

4. Write down the capabilities of R Programming. What R can does and does not do ? [3 Marks]

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