BSC (PSM)
SIXTH SEMESTER / THIRD YEAR
STATISTICAL COMPUTING AND INTRODUCTION TO STATISTICAL SOFTWARE
(BSST – 361)

SECTION-A (Very Short Answer Type Questions)

UNIT – I and II

S.No.	Question	CO	Bloom's Taxonomy
a)	What do you mean by computer?	CO1	L1
b)	Define the number system.	CO2	L1
c)	Draw the block diagram of the computer system.	CO3	L2
d)	What is the primary memory?	CO4	L2
e)	Draw the flowchart symbols with symbol names.	CO5	L3
f)	What do you mean by row and column?	CO3	L3
g)	Write the shortcut keys to the following: i. Bold, Italic and Underline ii. Copy the text and paste the text iii. Find and Replace	CO4	L4
h)	Convert $(111011101)_2$ binary numbers to octal and hexadecimal formats.	CO4	L4
i)	Convert $(3479)_{10}$ decimal numbers to binary and octal formats.	CO5	L5
j)	Convert $(10101010111)_2$ binary numbers to decimal, and hexadecimal formats.	CO5	L5

UNIT - III and IV

S.No.	Question	CO	Bloom's Taxonomy
a)	Write the syntax of max and min function.	CO1	L1
b)	What is the difference between average and averageif function?	CO1	L1
c)	What is the difference between count and counta function?	CO2	L2
d)	Write the syntax and example of sum function.	CO2	L2
e)	Define the median with syntax.	CO3	L3
f)	Write the syntax of if command.	CO3	L3
g)	Write the sqrt function syntax with example.	CO4	L4
h)	Write the step of insert a row in excel sheet.	CO4	L4
i)	Write the step of delete a column in excel sheet.	CO5	L5
j)	Write the step of copy and paste for the particular paragraph.	CO5	L5

UNIT – V and VI

S.No.	Question	CO	Bloom's Taxonomy
a)	What is R Software?	CO1	L1
b)	Write the name of developers of R software?	CO1	L1
c)	What are the different application areas of R language?	CO3	L2
d)	What are the packages in R?	CO2	L2

e)	**Write the command for correlation coefficient between x and y.**	**CO3**	**L3**
f)	**What about the data object with R?**	**CO4**	**L3**
g)	**Are variables 'H' and 'h' same in R?**	**CO4**	**L4**
h)	**What is meant by [1] in R console?**	**CO4**	**L4**
i)	**What is a character vector?**	**CO5**	**L5**
j)	**What is meant by "> +" in R console?**	**CO5**	**L5**

UNIT – VII and VIII

S.No.	Question	CO	Bloom's Taxonomy
a)	**What is the command for correlation and standard deviation in R?**	**CO1**	**L1**
b)	**How can one assign value to the objects?**	**CO1**	**L1**
c)	**What is the use of sqrt() function in R?**	**CO2**	**L2**
d)	**What is the meaning of row and column?**	**CO2**	**L2**
e)	**What is the character vector?**	**CO3**	**L3**
f)	**What do you mean by summary?**	**CO3**	**L3**
g)	**Convert the matrix** $A = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2 \end{bmatrix}$ **into transpose form. Write the R Software command also.**	**CO4**	**L4**
h)	**What is the command of pie chart in R?**	**CO4**	**L4**
i)	**What is the function?**	**CO5**	**L5**
j)	**Write the sequence command in R with example.**	**CO5**	**L5**

SECTION-B (Short Answer Type Questions)

UNIT – I and II

S.No.	Question	CO	Bloom's Taxonomy
a)	**Define the characteristics of Computer.**	**CO1**	**L1**
b)	**Convert the $1101100010011011_{(2)}$ into hexadecimal.**	**CO2**	**L1**
c)	**Convert the $8B2F.9A_{(16)}$ into binary equivalent.**	**CO3**	**L2**
d)	**Convert the $BDAF.AC9_{(16)}$ into octal equivalent**	**CO4**	**L2**
e)	**Convert the $51.63_{(8)}$ into binary equivalent**	**CO5**	**L3**
f)	**Write a program to find area of the triangle by the Heron's Formula.**	**CO1**	**L3**
g)	**Write a program to convert the Celsius into Fahrenheit**	**CO1**	**L4**
h)	**Draw a flowchart to find the factorial of any number.**	**CO2**	**L4**
i)	**Draw a flowchart to find the maximum number of three numbers.**	**CO2**	**L5**
j)	**Draw a flowchart to find the table of any given number.**	**CO3**	**L5**

UNIT - III and IV

S.No.	Question	CO	Bloom's Taxonomy
a)	**Define the spreadsheet.**	**CO1**	**L1**
b)	**Write the short note about MS Excel.**	**CO1**	**L1**
c)	**Explain a few useful mathematical functions in excel.**	**CO3**	**L2**

d)	**What is the benefit of using formulas in excel sheets?**	**CO4**	**L2**
e)	**Define the Cell range with MS Excel.**	**CO5**	**L3**
f)	**Define the Cell reference with MS Excel.**	**CO1**	**L3**
g)	**Write shortcut keys for the following.** **a. To go to the next cell.** **b. To edit a cell** **c. To undo the editing of contents in a cell** **d. To cut cell contents** **e. To copy cell contents**	**CO4**	**L4**
h)	**What charts are in excel? What are different types of charts?**	**CO4**	**L4**
i)	**How many data formats are available in Excel? Name some of them.**	**CO5**	**L5**
j)	**How can you resize the column?**	**CO5**	**L5**

UNIT - V and VI

S.No.	Question	CO	Bloom's Taxonomy
a)	**What is the difference between Histogram and Bar graph?**	**CO1**	**L1**
b)	**What is meant by [1] and "> +" in R console?**	**CO1**	**L1**
c)	**What is the use of round () function and abs() function?**	**CO2**	**L2**
d)	**What is matrix?**	**CO2**	**L2**
e)	**What are the packages of R language? Give some examples of packages.**	**CO3**	**L3**
f)	**These two matrices given.** $A=\begin{bmatrix}1 & 2 & -1\\ 2 & 0 & 3\\ 0 & 1 & 2\end{bmatrix}$ $B=\begin{bmatrix}3 & 1 & 1\\ 0 & 0 & 2\\ 4 & -3 & 2\end{bmatrix}$ **Find the A - B. Write the R Software command also.**	**CO3**	**L3**
g)	**These two matrices given.** $A=\begin{bmatrix}1 & 2 & -1\\ 2 & 0 & 3\\ 0 & 1 & 2\end{bmatrix}$ $B=\begin{bmatrix}3 & 1 & 1\\ 0 & 0 & 2\\ 4 & -3 & 2\end{bmatrix}$	**CO4**	**L4**

	Find the A' and B'. Write the R Software command also.		
h)	**These two matrices given.** $A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 1 & 1 \\ 0 & 0 & 2 \\ 4 & -3 & 2 \end{bmatrix}$ **Find the A + B. Write the R Software command also.**	**CO4**	**L4**
i)	**If** $A = \begin{bmatrix} 2 & 3 \\ 1 & 4 \\ -2 & 1 \end{bmatrix}$ **and** $B = \begin{bmatrix} 1 & 2 \\ 3 & -1 \\ 4 & 3 \end{bmatrix}$ **and 2A + 3B – C = 0 then find the value of C.**	**CO5**	**L5**
j)	**These two matrices given.** $A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 3 \\ 0 & 1 & 2 \end{bmatrix}$ $B = \begin{bmatrix} 3 & 1 & 1 \\ 0 & 0 & 2 \\ 4 & -3 & 2 \end{bmatrix}$ **Find the A * B. Write the R Software command also.**	**CO5**	**L5**

UNIT - VII and VIII

S.No.	Question	CO	Bloom's Taxonomy
a)	**What do you mean by sample and population?**	**CO1**	**L1**
b)	**What are null and alternative hypotheses?**	**CO1**	**L1**
c)	**What is the role data frame in R software?**		**L2**
d)	**How to create a matrix in R software?**	**CO3**	**L2**
e)	**Find the mean of the following data.** **Write the command of R also**	**CO4**	**L3**
f)	**What do you mean by dependent and independent variables?**	**CO4**	**L3**
g)	**What are null and alternative hypotheses?**	**CO5**	**L4**
h)	**Define the library function in R. write the some name of these.**	**CO1**	**L4**

Marks	0-10	10-20	20-30	30-40	40-50
Frequency	7	11	9	3	10

i)	**Define sqrt, log, exp functions in R software.**	**CO1**	**L5**
j)	**Define the repeating command in R software.**	**CO5**	**L5**

SECTION-C [Descriptive Answer Type Questions]

UNIT - I and II

S.No.	Question	CO	Bloom's Taxonomy
a)	**Explain the generation of computer.**	**CO1**	**L1**
b)	**Conversion of number system:** i. **Convert $(3A4)_{16}$ to the decimal number system.** ii. **Convert the $(345)_8$ to the hexadecimal number.** iii. **Convert the $(5500)_{10}$ to the hexadecimal number system.** iv. **Convert the $(88BAE)_{16}$ to octal number.**	**CO1**	**L1**
c)	**Explain two input and two output devices.**	**CO2**	**L2**
d)	**Explain the central processing unit.**	**CO4**	**L2**
e)	**Explain the four positional number system, briefly.**	**CO5**	**L3**
f)	**Explain the flowchart symbols with definition.**	**CO4**	**L3**
g)	**Draw a flowchart to find the given year is a leap year or not.**	**CO4**	**L4**
h)	**Draw a flowchart to find the roots of the quadratic equation.**	**CO4**	**L4**
i)	**Draw a flow chart to print the Fibonacci series.**	**C04**	**L5**
j)	**Write the steps for : To create a new workbook, save the workbook, to create a mark sheet of three subject (Physics. Maths and Statistics) and find the average of these subjects.**	**CO5**	**L5**

UNIT - III and IV

S.No.	Question	CO	Bloom's Taxonomy
a)	**Write all the step of finding and replacing text.**	**CO1**	**L1**
b)	**Write the method of change column width and row height.**	**CO1**	**L1**
c)	**Create a table of 10 records and find the sum of all values.**	**CO2**	**L2**
d)	**Create a table of 10 records and find the maximum and minimum value.**	**CO2**	**L2**
e)	**Explain the sumif function in MS Excel with example.**	**CO3**	**L3**
f)	**Explain the average function in MS Excel with example.**	**CO3**	**L3**
g)	**Describe the benefits and limitation of flowchart.**	**CO4**	**L4**
h)	**Explain the correl and stdev function in MS Excel with example.**	**CO4**	**L4**
i)	**What is the AND function does in Excel?**	**CO5**	**L5**
j)	**What are left, right, fill and distributed alignments?**	**CO5**	**L5**

UNIT - V and VI

S.No.	Question	CO	Bloom's Taxonomy
a)	**Define measures of central tendency.**	**CO1**	**L1**

<table>
<tr><td>b)</td><td>Define measures of dispersion.</td><td>CO1</td><td>L1</td></tr>
<tr><td>c)</td><td>Explain discrete and continuous distribution.</td><td>CO2</td><td>L2</td></tr>
<tr><td>d)</td><td>What is the difference between sqrt() and order() built-in function in R?</td><td>CO2</td><td>L2</td></tr>
<tr><td>e)</td><td>Find the median of the following data.
<table><tr><td>X</td><td>10</td><td>17</td><td>5</td><td>3</td><td>15</td></tr></table>Write the command in R also.</td><td>CO3</td><td>L3</td></tr>
<tr><td>f)</td><td>Find the variance of the following data.
<table><tr><td>X</td><td>100</td><td>170</td><td>50</td><td>30</td><td>150</td></tr></table>Write the command in R also.</td><td>CO3</td><td>L3</td></tr>
<tr><td>g)</td><td>Find the SD of the following data.
<table><tr><td>X</td><td>20</td><td>27</td><td>25</td><td>23</td><td>25</td></tr></table>Write the command in R also.</td><td>CO4</td><td>L4</td></tr>
<tr><td>h)</td><td>Calculate the correlation coefficient from the following data.
<table><tr><td>X</td><td>6</td><td>7</td><td>5</td><td>8</td><td>9</td><td>10</td><td>8</td><td>7</td></tr><tr><td>Y</td><td>8</td><td>7</td><td>9</td><td>5</td><td>7</td><td>6</td><td>7</td><td>8</td></tr></table>Write the command in R also.</td><td>CO4</td><td>L4</td></tr>
<tr><td>i)</td><td>Calculate Karl Pearson coefficient of correlation from the following data.
<table><tr><td>X</td><td>65</td><td>66</td><td>67</td><td>67</td><td>68</td><td>69</td><td>70</td><td>72</td></tr><tr><td>Y</td><td>67</td><td>68</td><td>65</td><td>68</td><td>72</td><td>72</td><td>69</td><td>71</td></tr></table>Write the command in R also.</td><td>CO5</td><td>L5</td></tr>
<tr><td>j)</td><td>Calculate Karl Pearson coefficient of correlation from the following data.
<table><tr><td>X</td><td>18</td><td>20</td><td>21</td><td>22</td><td>27</td><td>27</td><td>28</td><td>29</td><td>29</td><td>29</td></tr><tr><td>Y</td><td>23</td><td>37</td><td>29</td><td>28</td><td>28</td><td>31</td><td>35</td><td>30</td><td>36</td><td>33</td></tr></table>Write the command in R also.</td><td>CO5</td><td>L5</td></tr>
</table>

UNIT – VII and VIII

S.No.	Question	CO	Bloom's Taxonomy
a)	**Define correlation in R with an example.**	**CO1**	**L1**
b)	**Explain regression analysis in R with a suitable example.**	**CO1**	**L1**
c)	**Create a matrix and write the command of transpose and inverse.**	**CO2**	**L2**
d)	Find the inverse of the following matrix. $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 5 & 7 \end{bmatrix}$. Write the R Software command also.	**CO2**	**L2**

e)	If $A=\begin{bmatrix} 2 & 3 \\ 1 & 4 \\ -2 & 1 \end{bmatrix}$ and $B=\begin{bmatrix} 1 & 2 \\ 3 & -1 \\ 4 & 3 \end{bmatrix}$ then find 2A + 3B then find the value of C.	**CO3**	**L3**
f)	What is the difference between Histogram and Bar graph? Define in R Software.	**CO3**	**L3**
g)	**Write a program to find the even and odd number for a given number.**	**CO4**	**L4**
h)	**Write a program to find the positive and negative number for a given number.**	**CO4**	**L4**
i)	Define list the built-in functions of a binomial distribution in R.	**CO5**	**L5**
j)	Which parameter is used by the Poisson distribution functions in R?	**CO5**	**L5**