

B.Sc. (Honours) Examination, 2018
Semester-IV
Statistics
Course : BSC-42
(Statistical Computing)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer **any four** questions

1. (a) Write short notes on : objective and function of an operating system. 4
(b) Suppose x_2 and x_{10} denotes the binary and decimal representation of a number x . Now if $a_2=(0101101)_2$ and $b_{10} = 30$, find $(a_{10}/b_{10})_2$, $(a_2 + b_2)_{10}$, $(a_{10}/100)_2$, $(2.5 \times b_{10})_2$. 6
2. (a) Write down the rules for constructing real constants in C. 3
(b) Write short notes on : Printf(), compilation and execution in C programming. 4
(c) While purchasing certain is more than 1000. If quantity and price per item are input through keyboard, write down the flowchart to calculate the total expenses. 3
3. (a) Write down the general form of while loop. 2
(b) Write a C-code to calculate the greatest integer of a number which is less than that number. 3
(c) Use for loop to print the following figure in C 2
2 3 4
3 4 15
4 5 6
- (d) Write a C-program to calculate $\sum_{i=1}^{10} (-1)^i \sin^2(i)$ 3
4. (a) Write a program in C to calculate and print the first quartile, second quartile, third quartile and interquartile range of 30 numbers input through keyboard. 5
(b) Write a C-code to print the first 50 terms of the following series by taking the initial value (0.1, 0.15)
$$x_n = x_{n-1}(1 - x_{n-1}) - x_{n-1}y_{n-1}$$
$$y_n = x_{n-1}y_{n-1} - y_{n-1} + 0.2x_n$$
Hence find the correlation co-efficient between x and y data.

(2)

5. (a) Write a C program to fill a binomial distribution with the following data. Save the output of the program in a file. 5

Number(x)	0	1	2	3	4	5	6	7	8
Frequency(f)	12	46	80	124	197	133	65	21	3

- (b) Write a code on C to find a root of the equation $x = \cos^{-1}(xe^{2x})$ by iteration method
6. (a) Write a program in C to check whether a square matrix of order 8 is skew-symmetric or, not. 7
- (b) Write a program to calculate the trace of square matrix of order n . 3
7. Write a C program to generate 5000 samples from $t_{(3)}$ distribution. Compute mean and s.d. these samples. 10
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