1005E468

Candidate's Seat No :_____

M.Sc. (Sem.-II) Examination

410

Statistics (Computer Programming)

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

1 (a) Explain the following terms :

(i) Computer Hardware (ii) System software (iii) Source Program (iv) Machine Language (v) Algorithms and Flowcharts.

OR

1 (a) Explain classification of computer system. Discuss applications of Computer in various fields.

(b) Draw a flowchart to obtain first four central Moments for the following n observations :

$x_1, x_2, x_3 \ldots\ldots x_n$

OR

(b) Economic order quantity (EOQ) is calculated from the equation $Q = \sqrt{\frac{2RS}{I}}$, when R is yearly requirement, S is the setup cost and I is cuerying cost per item. The values of R, S and I for ten items in a factory are given. Draw a flowchart to compute Economic order Quantity for each of these items.

2 (a) Explain the following terms with suitable examples.

(i) Constants and variables (ii) Type Declaration Instruction (iii) Input-output Statements.

OR

(a) Discuss various Branching statements using suitable exanples.

(b) Write a C++ program to obtain values of the two-person-zero-sum game with out saddle point whose pay off matrix in favour of player A is given by

		Player B	
		B_1	B_2
Player A	A_1	a_{11}	a_{12}
	A_2	a_{21}	a_{22}

OR

(b) Write a C++ program for obtaing value of following function :

$$f(x) = \begin{cases} 0 \text{ if } x \le 0 \\ x(x-5)(x-7) \text{ if } 0 < x \le 5 \\ (x-5)(x-7)(x-10) \text{ if } 5 < x \le 7 \\ 0 \quad \text{otherwise} \end{cases}$$

3 (a) Discuss various Looping statements.

OR

(a) Explain the terms given below :

(i) Nesting of Loops (ii) Break Statement (iii) Continue Statement

(b) Write a C++ program to obtain sum of the series :

$$1+\frac{1}{2}+\frac{1}{3}+.....+\frac{1}{100}$$

OR

(b) Write a C++ program to obtain sum

$$\sum_{n=1}^{50}\left(\frac{1}{n^2+n+2}\right)$$

4 (a) Discuss functions and painters.

OR

(a) Define Arrays and structures. Discuss their uses.

(b) Consider a quadratic polynomial $y = 2x^2 - 3x + 5$.
Write a C++ program which finds y for which x assumes values from -4 to +4 in steps of 0-5

OR

(b) A factory gives following rates of commission for weekly sales of the product.

Sales (in Rs.)	Commission
Below 10,000/-	no Commission
10,000 and Above but less than 15,000	5.7% Commission
15,000 and Above but less than 20,000	7.8% Commission
Above 20,000	11.0% Commission

Write a C++ program to read the sales and print the commission.

5 Complete the following statements by filling gaps (any fourteen)

(a) Conversion of binary number $(1011.11)_2$ in to corresponding octal number is .....

(b) Conversion of binary number $(1001\text{-}1110)_2$ in to corresponding hexadecimal number is .....

(c) Decimal equivalent of binarry numbers $(1011)_2$ is .....

(d) Conversion of decimal number $(45\text{-}50)_{10}$ in to corresponding binary number is .....

(e) Conversion of Hexadecimal number $(BAF)_{16}$ in to corrsponding binary number is .....

(f) Conversion of octal number $(425)_8$ in to Hexadecimal number is .....

(g) Conversion of Hexadecimal number $(ECD)_{16}$ in to octal number is .....

(h) Conversion of octal number $(25\text{-}25)_8$ in to Decimal number is .....

(i) Evaluation of the expression
j = (8/7 +21 / 5 * 3) if j is integer is .....

(j) Evaluation of the expression
x = 14.0/17 * 5 + 25.8/(2*3) if x is float is .....

(k) Conversion of the equation

$$y=\frac{1}{x_1}+\frac{2}{x_2}+\frac{3}{x_3}/(x_4+x_5+2x_6)/8$$ in to C++ statement is.....

(l) The conversion of Hexadecimal number $(BDC)_{16}$ in to corresponding octal number is .....

(m) $(1011)_2 + (1111)_2$ = ...

(n) If I = J*2/3+K/4+6-J*3/8 then for J = 2, K = 2, I integer, value of I = ...

(o) Corresponding to decimal number $(27\text{-}25)_{10}$, the Hexadecimal number is .....