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This question paper contains 8+2 printed pages]

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S. No. of Question Paper : 7507

Unique Paper Code : 32371502 J

Name of the Paper : Statistical Computing Using C/C++
Programming

Name of the Course : B.Sc. (H) Statistics

Semester : V

Duration : 3 Hours Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

All questions are compulsory.

1. Attempt any ten parts : $10 \times 3 = 30$

(i) State whether the following statements are true or false :

- (a) The expression *p++ increments p.
- (b) Pointer stores only an integer value.
- (c) The left operand in an assignment expression must be a single variable.
- (d) Any expression that evaluates to an integral value may be used as an index.

P.T.O.

- (e) Dynamically allocated memory can only be referred to through pointers.
- (f) Adding one to pointer increases the address stored in it by one byte.
- (ii) Fill in the blanks :
- (a) If a function calls itself it is called _____ function.
- (b) Call by reference may be achieved by passing parameter as _____.
- (c) A function cannot return more than _____ value.
- (d) A program starts execution from _____ function.
- (e) Pointer variable is a variable that contains the _____ of another variable.
- (f) Elements of an array are stored in _____ memory location.

- (iii) What is a structure ? How is a structure declared and how its members are accessed ?
- (iv) In C “ * ” may be treated as both unary and binary operator. Justify your answer with example.
- (v) Define the range of the random numbers generated by the following expressions :

(a) $\text{rand}() \% 10 + 1$

(b) $\text{rand}() \% 2 + 10$

(c) $\text{rand}() \% 50 - 10$

(vi) `int p=40, q=25, r, s;`

`r = (p++) + (q++);`

`s= (++p) + (++q);`

`printf("%d %d",r,s)`

What will be the output of the above code ?

- (vii) How do we declare variables and symbolic names in a program ? What is the difference between the two ?

- (viii) (a) What functions may be used for input and output of a single character ?
- (b) What is the type of return value of function sizeof() ?
- (ix) What is the difference between while loop and do-while loop ?
- (x) What is the difference between call by value and call by reference ?
- (xi) Write the assignment statements in C for the following :

(a) $u = y^3 + \log_{10} \left(\frac{y}{i} \right)$

(b) $v = \frac{1}{2} e^{-\frac{x^2}{2}}$

- (xii) Evaluate the following for int m=2, n=5;

(a) $++n*n-- + 3*++m$

(b) $m\%(n*6\%4)$

(c) $m+++*m*n++$