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**5 SEM TDC STSH (CBCS) C 12 (N/O)**

**2024**

( November )

**STATISTICS**

( Core )

Paper : C-12

**( Statistical Computing Using C Programming )**

*The figures in the margin indicate full marks  
for the questions*

( New Course )

Full Marks : 55

Pass Marks : 22

Time : 3 hours

1. Choose the correct answer from the following alternatives : 1×6=6

(a) Who is the father of C language?

(i) Bjarne Stroustrup

(ii) James Gosling

(iii) Dennis Ritchie

(iv) W. A. Shewhart

- (b) How many keywords are there in C?
- (i) 0
  - (ii) 32
  - (iii) 48
  - (iv) 255
- (c) Which of the following will not return a value?
- (i) void
  - (ii) int
  - (iii) null
  - (iv) char
- (d) Nesting is allowed for which of the following statements?
- (i) if
  - (ii) if else
  - (iii) switch
  - (iv) All of the above
- (e) Where should the default values of parameter be specified?
- (i) Function call
  - (ii) Function definition
  - (iii) Function prototype
  - (iv) None of the above

(f) Which of the following operations is allowed to be performed on a pointer variable?

(i) ptr + 1

(ii) ptr - 1

(iii) ptr + + and ptr - -

(iv) All of the above

2. Answer the following questions in brief :

2×6=12

(a) What is the difference between pre-increment and post-increment operations?

(b) What are the disadvantages of do-while statement?

(c) Explain the purpose of recursion function.

(d) What is static memory allocation?

(e) Differentiate between for loop and while loop.

(f) What is pointer variable?

3. Answer any *two* of the following questions :

8×2=16

(a) Write a short history of C programming. What are the advantages and disadvantages of C programming?

4+4=8

- (b) What do you mean by identifiers? State the rules for naming identifiers. Give some examples of valid and invalid identifiers.  $2+3+3=8$
- (c) Explain the basic data types supported by C language and discuss their features.  $4+4=8$
4. (a) What is a loop? Compare the three loop control structures used in C with examples.  $2+6=8$
- Or
- (b) What is an array? Explain different types of array with syntax.  $2+6=8$
5. (a) What is function prototype? Write a recursion function algorithm to find a factorial of a number.  $2+5=7$
- Or
- (b) Distinguish between library function and user-defined function. Explain in detail the storage classes available in C language with examples.  $2+5=7$
6. (a) Distinguish between pointers and arrays. How to declare and initialize a pointer? Explain with examples.  $3+3=6$
- Or
- (b) What is dynamic memory allocation? Explain malloc() and calloc() functions.  $3+3=6$

( 5 )

( Old Course )

Full Marks : 50

Pass Marks : 20

Time : 2 hours

1. Choose the correct answer from the following alternatives : 1×5=5

(a) Who is the father of C language?

(i) Bjarne Stroustrup

(ii) James Gosling

(iii) Dennis Ritchie

(iv) W. A. Shewhart

(b) How many keywords are there in C?

(i) 0

(ii) 32

(iii) 48

(iv) 255

(c) Which of the following will not return a value?

(i) void

(ii) int

(iii) null

(iv) char

- (d) Nesting is allowed for which of the following statements?
- (i) if
  - (ii) if else
  - (iii) switch
  - (iv) All of the above
- (e) Which of the following operations is allowed to be performed on a pointer variable?
- (i)  $\text{ptr} + 1$
  - (ii)  $\text{ptr} - 1$
  - (iii)  $\text{ptr} ++$  and  $\text{ptr} --$
  - (iv) All of the above

2. Answer the following questions in brief :

2×5=10

- (a) What is the difference between pre-increment and post-increment operations?
- (b) What are the disadvantages of do-while statement?
- (c) Explain the purpose of recursion function.
- (d) What is static memory allocation?
- (e) What is pointer variable?

3. Answer any *two* of the following questions : 7×2=14

(a) Write a short history of C programming. What are the advantages and disadvantages of C programming? 3+4=7

(b) What do you mean by identifiers? State the rules for naming identifiers. Give some examples of valid and invalid identifiers. 1+3+3=7

(c) Explain the basic data types supported by C language and discuss their features. 3+4=7

4. (a) What is a loop? Compare the three loop control structures used in C with examples. 2+6=8

Or

(b) What is an array? Explain different types of array with syntax. 2+6=8

5. (a) What is function prototype? Write a recursion function algorithm to find a factorial of a number. 2+5=7

Or

(b) Distinguish between library function and user-defined function. Explain in detail the storage classes available in C language with examples. 2+5=7

6. (a) Distinguish between pointers and arrays. How to declare and initialize a pointer? Explain with examples. 3+3=6

Or

- (b) What is dynamic memory allocation? Explain malloc( ) and calloc( ) functions. 3+3=6

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