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PGDCA

Paper : 1.2

(Introduction to Programming)

Full Marks : 100

Time : 3 hours

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

1. Choose the correct option among the following : 1×10=10

(a) Algorithms are documented in

- (i) pseudocode
- (ii) flowchart
- (iii) programming language
- (iv) All of the above

(b) A combination of programming language construct and natural language used to express a computer program design is called

- (i) pseudocode
- (ii) flowchart
- (iii) programming language
- (iv) None of the above

- (c) Statement in C is terminated by
- (i) .
 - (ii) ,
 - (iii) "
 - (iv) ;
- (d) The extension of a C executable file is
- (i) exe
 - (ii) obj
 - (iii) c
 - (iv) Depends on operating system
- (e) ASCII stands for
- (i) American Special Code for Information Interchange
 - (ii) American Standard Coded Information Interchange
 - (iii) American Special Code for Information Input
 - (iv) All of the above
- (f) Relational operators are used in conjunction with
- (i) program logic
 - (ii) branching construct
 - (iii) program syntax
 - (iv) output logic

- (g) "strlen()" function returns
- (i) the length of a string without blank spaces in-between
 - (ii) the length of a string with blank spaces in-between
 - (iii) None of the above
 - (iv) All of the above
- (h) "gets()" function is used to
- (i) read a string with blank spaces in-between
 - (ii) read a string without blank spaces in-between
 - (iii) read an integer
 - (iv) None of the above
- (i) "break" statement is used to
- (i) exit from a loop
 - (ii) exit from a function
 - (iii) Both (i) and (ii)
 - (iv) None of the above
- (j) `int a = 100;`
`printf("%d", a++);`
Output of the above statements is
- (i) an error message
 - (ii) 100
 - (iii) 101
 - (iv) None of the above

2. Fill in the blanks :

1×10=10

- (a) The size of float data type is — bytes.
- (b) In pre-increment, — increment is carried out after the execution of the statement.
- (c) — is used to create a user defined data type.
- (d) #define is a —.
- (e) A character pointer variable can store the — of a character —.
- (f) — function is used to end a program.
- (g) — is used to continue a loop.
- (h) — header file contains the "strlen()" function.
- (i) A runtime error is an error occurs at —.
- (j) "main()" function is the — point of the execution of a C program.

3. Match the Column—A with Column—B :

1×10=10

Column—A	Column—B
(a) Simple sequence	(i) Data type
(b) #define	(ii) Clears the screen
(c) \t	(iii) String library function
(d) clrscr()	(iv) Standard I/O
(e) Short	(v) File
(f) Malloc	(vi) Basic control structure
(g) Automatic	(vii) Symbolic constant
(h) Float	(viii) No return value
(i) stdio.h	(ix) Escape sequence
(j) Void	(x) Storage class
	(xi) Dynamic memory allocation
	(xii) Modifier

4. State whether *True* or *False* :

1×10=10

- (a) Structured programming does not reduce the time involved in developing programs.
- (b) COBOL is a high-level programming language.

- (c) Escape sequences are very useful in formatting I/O.
- (d) In a 'while' loop, the condition expression is checked after every iteration of the loop.
- (e) Return is not a function.
- (f) Linear search is slower than binary search.
- (g) Linear search can be used only in case of ordered list.
- (h) The first character of a variable is either a letter or an underscore.
- (i) Bubble sort is a searching technique.
- (j) # include is used to define a macro.
5. (a) Describe the features of a good computer program. 5
- (b) What is token? Explain. 5
- (c) Write a brief description on the three loop control statements in C. 6
6. Write down the outputs of the following C statements : 3×3=9

(a) `int a = 1, b = 100;`
`printf("%d", (a++) + (b++));`

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(b) char data[20] = "Brahmaputra";  
    data[0] = '\0';  
    printf("%s", data);
```

```
(c) int a = 5;  
    while (a < 5) {a++;  
    Printf{"Brahmaputra"};}
```

7. Give answers to any five of the following questions : 7×5=35

(a) Write a function in C to implement the selection sort technique.

(b) What is modular programming? Explain briefly.

(c) What is string? Write down the syntax of two string library functions.

(d) Explain the binary search technique.

(e) What is pointer? Explain with an example.

(f) What is a variable? Write down the rules for naming a variable.

(g) Differentiate between "switch" and "if-else if-else" statements with the help of an example.

(h) Create a structure called "student" which contains the members

(i) std_roll

(ii) std_name

(iii) std_address

(iv) std_course

and also write a C program which will read the information of 5 students and then display them.

(i) Write a program to display all the even and odd numbers separately between an input range.

(j) Write a program to count the numbers of vowels in an input string.
