

37 (Sem-1) IT/MCA 1.2

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IT/MCA

Paper : 1.2

(Introduction to Programming)

(Only for IT Candidates)

Full Marks : 70

Time : 3 hours

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

1. Choose the correct option among the following : 1×7=7
- (a) 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
- (b) Statement in C is terminated by
- (i) .
 - (ii) ,
 - (iii) "
 - (iv) ;

- (c) The extension of a C executable file is
 - (i) exe
 - (ii) obj
 - (iii) c
 - (iv) Depends on operating system
- (d) ASCII stands for
 - (i) American Special Code for Information Interchange
 - (ii) American Standard Code for Information Interchange
 - (iii) American Special Code for Information Input
 - (iv) All of the above
- (e) "**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
- (f) "**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

- (g) `int a = 100; a = a++;`
 `printf("%d", a++);`

Output of the above statements is

- (i) 101
(ii) 102
(iii) 103
(iv) None of the above

2. Fill in the blanks :

1×7=7

- (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) — is used to continue a loop.
- (g) A runtime error is an error that occurs at —.

3. Match Column—A with Column—B : $1 \times 7 = 7$

Column—A	Column—B
(a) Simple Sequence	(i) Data Type
(b) #define	(ii) String Library Function
(c) \t	(iii) Standard I/O
(d) short	(iv) File
(e) automatic	(v) Basic Control Structure
(f) float	(vi) Symbolic Constant
(g) .stdio.h	(vii) Escape Sequence
	(viii) Storage Class
	(ix) Modifier

4. State whether True or False : $1 \times 7 = 7$

- Structured programming does not reduce the time involved in developing programs.
- Escape sequences are very useful in formatting I/O.
- In a 'while' loop, the condition expression is checked after every iteration of the loop.
- Return is not a function.
- Linear search is slower than Binary search.
- Linear search can be used only in case of ordered list.
- The first character of a variable is either a letter or an under-score.

5. (a) Describe the features of a good computer program. 4
- (b) Write a brief description on the three-loop control statements in C. 3
6. Give answers to any *five* of the following questions : $7 \times 5 = 35$
- (a) What is Modular Programming? Explain briefly.
- (b) Explain the Binary search technique with the help of an example.
- (c) What is a 'variable'? Write down the rules for naming a variable.
- (d) Differentiate between "switch" and "if-else if-else" statements with the help of an example.
- (e) 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 "**n**" students and then displays them.
- (f) Write a program to display the summation of the even and odd nos. separately between an input range.
- (g) Write a program in C to read characters and store only the vowels into file named "data.txt".

(Only for MCA Candidates)

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) 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

(b) Statement in C is terminated by

- (i) .
- (ii) ,
- (iii) "
- (iv) ;

(c) The extension of a C executable file is

- (i) exe
- (ii) obj
- (iii) c
- (iv) Depends on operating system

(d) ASCII stands for

- (i) American Special Code for Information Interchange
- (ii) American Standard Code for Information Interchange
- (iii) American Special Code for Information Input
- (iv) All of the above

(e) "**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

(f) "**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

- (g) `int a = 100; a = a++;`
 `printf("%d", a++);`

Output of the above statements is

- (i) 101
 - (ii) 102
 - (iii) 103
 - (iv) None of the above
- (h) `int *a, b = 500; a = &b;`
 `printf("%d", (*a)++);`

Output of the above statements is

- (i) 500
 - (ii) 503
 - (iii) 501
 - (iv) None of the above
- (i) **NULL** pointer is a type of pointer of any data type and generally takes a value as
- (i) declared variable
 - (ii) called variable
 - (iii) zero
 - (iv) one
- (j) To write numbers, characters, etc., to a file, we can use
- (i) `fscanf()`
 - (ii) `printf()`
 - (iii) `scanf()`
 - (iv) `fprintf()`

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) — is used to continue a loop.
- (g) A runtime error is an error that occurs at —.
- (h) The maximum value of a — is 255 when all bits are 1.
- (i) Autovariables, declared within a function, are — to the function.
- (j) A pointer is denoted by —.

3. Match Column—A with Column—B : $1 \times 10 = 10$

Column—A	Column—B
(a) Simple Sequence	(i) Data type
(b) #define	(ii) String Library Function
(c) \t	(iii) Standard I/O
(d) short	(iv) File
(e) automatic	(v) Basic Control Structure
(f) float	(vi) Symbolic Constant
(g) stdio.h	(vii) Escape Sequence
(h) fprintf()	(viii) Storage Class
(i) free()	(ix) Modifier
(j) for	(x) Structure
	(xi) Dynamic Memory Allocation
	(xii) Loop

4. State whether True or False : $1 \times 10 = 10$

- Structured programming does not reduce the time involved in developing programs.
- Escape sequences are very useful in formatting I/O.
- In a 'while' loop, the condition expression is checked after every iteration of the loop.
- Return is not a function.
- Linear search is slower than Binary search.

- (f) Linear search can be used only in case of ordered list.
- (g) The first character of a variable is either a letter or an under-score.
- (h) **fclose()** function is used to close an opened file.
- (i) **sizeof()** function is used to calculate the maximum value of a variable.
- (j) Functions **malloc** and **calloc** allot memory dynamically.
5. (a) Describe the features of a good computer program. 5
- (b) Write a brief description on the three-loop control statements in C. 5
- (c) Explain the differences between pre-increment and post-increment with the help of an example. 5
- (d) Explain the bubble-sort technique. 5
6. Give answers to any *five* of the following questions : 8×5=40
- (a) What is Modular Programming? Explain briefly.
- (b) Explain the Binary Search Technique with the help of an example.

- (c) What is a 'variable'? Write down the rules for naming a variable and syntax for declaring a variable.
- (d) Differentiate between "switch" and "if-else if-else" statements with the help of an example.
- (e) 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 "**n**" students and then displays them.
- (f) Write a program to display the summation of the even and odd nos. separately between an input range.
- (g) Write a program in C to read characters and store only the vowels into file named "data.txt".

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