

TDC-Part-I(Voc.) Exam.-2019

Time : 3 hours

Full Marks : 75

Candidates are required to give their answer in their own words as far as practicable.

The figures in the margin indicate full marks.

Q.No.1 is compulsory. Answer any five questions from group-A and group-B selecting at least two from a group.

1. Choose the correct answer from given options:- 1×15
- (i) The symbol of 10 in hexadecimal number system is.....
- (a) A
 - (b) B
 - (c) C
 - (d) D
- (ii) The octal equivalent of a binary number 1010111 is.....
- (a) 121
 - (b) 57
 - (c) 127
 - (d) 87

- (iii)..... is a pictorial representation of a program
- (a) Algorithm
 - (b) Decision Table
 - (c) Flowchart
 - (d) All of these
- (iv) Electronic circuits that operate on one or more input signals to produce standard output is called.....
- (a) Series circuits
 - (b) Parallel Circuits
 - (c) Logic Signals
 - (d) Logic Gates
- (v) Actual instructions(Processes) in flowcharting are represented in _____
- (a) Circles
 - (b) Boxes
 - (c) Arrows
 - (d) Lines
- (vi) The NAND function is the complement of.....
- (a) AND
 - (b) OR
 - (c) XOR
 - (d) NOR

(vii) The gate which is called an inverter is called _____

- (a) NOR
- (b) NAND
- (c) XOR
- (d) NOT

(viii) Which is valid C declaration?

- (a) `int my_num = 100,000;`
- (b) `int my_num = 100000;`
- (c) `int my num = 1000;`
- (d) `int $my_num = 10000;`

(ix) Which of the following cannot be a variable name in C?

- (a) `break`
- (b) `true`
- (c) `print`
- (d) `scan`

(x) The format identifier '%i' is also used for ___ data type.

- (a) `char`
- (b) `int`
- (c) `float`
- (d) `double`

(xi) Which of the data types has the variable size?

- (a) `int`
- (b) `struct`

- (c) `float`
- (d) `double`

(xii) _____ is a unary operators in C?

- (a) `&&`
- (b) `!`
- (c) `^`
- (d) `&`

(xiii) Which of the following data type will throw an error on modulus operation (%) ?

- (a) `char`
- (b) `short`
- (c) `int`
- (d) `float`

(xiv) Which of the following is not an arithmetic operation?

- (a) `a* = 10;`
- (b) `a / = 10;`
- (c) `a ! = 10;`
- (d) `a % = 10;`

(xv) What is the precedence of arithmetic operators (from highest to lowest)?

- (a) `%, *, /, +, -`
- (b) `%, +, /, *, -`

(c) +, -, %, *, /

(d) %, +, -, *, /

Group-A

2. (a) State and prove D'Morgans theorem. 6
(b) NAND and NOR gates are universal gates. Explain and justify. 6
3. (a) What are differences between Flowchart and algorithm. Explain. 6
(b) Explain the following logic families: 6
(i) DTL
(ii) TTL
(iii) RTL
4. (a) What is number system? Explain positional, non-positional, binary, octal, decimal and hexadecimal number system with example. 6
(b) Convert the following numbers into binary number system. 6
(i) $(231)_{10}$
(ii) $(156)_8$
(iii) $(2E8A)_{16}$
5. (a) What do you mean by documentation? What are the characteristics of good documentation? 6

XH-B.C.A.-II

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(b) What are the different generations of computer language? Explain each with examples. 6

6. Write short notes on any three of the following: 3×4=12
(a) Structured Programming
(b) Modularization
(c) Algorithm
(d) Data flow diagram
(e) Interpreter

Group-B

7. (a) What is user defined data type in C? Explain typedef and enum keywords with example. 6
(b) Differentiate the role of post and pre increment(++) operators with the help of suitable example. 6
8. (a) What is struct data type in C? Create a structure template of your choice for an example. Also state the differences between structure and array. 6
(b) Write a program to check that a number is power of 2 or not using bitwise operators. 6
9. (a) Write a program to print the prime numbers between 1 to 200. 6
(b) Write a program to enter three numbers and find the smallest of them using conditional operator. 6

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10. (a) Write a program to generate Fibonacci series up to 'n' terms. The value of 'n' will be entered by the user at run time. 6

(b) Write a program to interchange the values of two variables with the help of a user defined function. 6

11. Write short notes on any four of the following:- $4 \times 3 = 12$

(b) Symbolic Constant

(b) malloc() function

(c) pointer

(d) recursion

(e) break

(f) identifier

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