Chapter: 9   # Elements of C

⭐ Multiple Choice Questions ⭐

Q 1: _____ is the name given to a variable, constant, function, or label in the program:

Ⓐ Keyword   **Ⓑ Identifier**   Ⓒ Reserved word   Ⓓ Operator

Q 2: An identifier in C language may consist of _____ character:

Ⓐ 30   **Ⓑ 31**   Ⓒ 32   Ⓓ 33

Q 3: How many types of identifiers are in C language?

Ⓐ 2   Ⓑ 3   Ⓒ 4   Ⓓ 5

Q 4: A type of an identifier which has a special meaning in C:

Ⓐ User-defined identifier   **Ⓑ Standard identifier**
Ⓒ Both A & B   Ⓓ None of these

Q 5: Printf and scanf are example of:

Ⓐ User-defined identifier   **Ⓑ Standard identifier**
Ⓒ Both A & B   Ⓓ None of these

Q 6: A type of an identifier which is defined by a programmer to access memory location (s):

Ⓐ User-defined identifier   Ⓑ Standard identifier
Ⓒ Both A & B   Ⓓ None of these

Q 7: Rollno , student Name and marks are examples of:

Ⓐ User-defined identifier   Ⓑ Standard identifier
Ⓒ Both A & B   Ⓓ None of these

Q 8: Which of the following is NOT a valid identifier?

Ⓐ Rerutn   Ⓑ MyInt   Ⓒ MyInteger   Ⓓ Total3

Q 9: Total number of keywords in C is:

Ⓐ 30   **Ⓑ 32**   Ⓒ 34   Ⓓ 36

Q10: Variables are created in:

Ⓐ RAM   Ⓑ ROM   Ⓒ Hard Disk   Ⓓ USB

Q11: Variables are created in:

Ⓐ RAM   Ⓑ ROM   Ⓒ Hard Disk   Ⓓ Cache

Q12: Variable and constant name cannot contains a (n):

Ⓐ Letter   Ⓑ Underscore   **Ⓒ Period**   Ⓓ Number

Q13: In C , the maximum length of text name is:

Ⓐ 25 Characters   **Ⓑ 255 Characters**   Ⓒ 155 Characters   Ⓓ 55 Characters

Q14: What is the name for a word that has a specific meaning in C language?

Ⓐ Keywords   Ⓑ Commands   Ⓒ Operands   Ⓓ Operators

Q15: Which of the following is a keyword?

Ⓐ int   Ⓑ main   Ⓒ printf   Ⓓ include

Q16: A process of assigning initial value to a variable at the time of declaration is called:

Ⓐ Assigning   **Ⓑ** Initializing   Ⓒ Naming   Ⓓ Executing

Q17: A memory location with some data that can be changed is called:

Ⓐ Constant   Ⓑ Named constant   Ⓒ Address   **Ⓓ** Variable

Q18: Which is a valid character constant?

Ⓐ A   Ⓑ " Hello "   **Ⓒ** ' 6 '   Ⓓ =

Q19: Which of the following are valid examples of character constant?

Ⓐ ' A '   Ⓑ ' 9 '   Ⓒ ' $ '   **Ⓓ** All of these

Q20: Which of the following is a valid character constant:

Ⓐ a   **Ⓑ** @   Ⓒ c   Ⓓ =

Q21: Which term describes the kind of values that a variable can store?

Ⓐ Data type   Ⓑ Variable name   Ⓒ Variable type   Ⓓ Variable size

Q22: The number of bytes used by int data type in C is:

Ⓐ 8   Ⓑ 6   Ⓒ 4   **Ⓓ** 2

Q23: Which of the following data type offers the highest precision?

Ⓐ Float   Ⓑ Long int   **Ⓒ** Long double   Ⓓ Unsigned long int

Q24: When the result of the computation of two very small numbers is too small to be represented, this phenomenon is called:

Ⓐ Arithmetic overflows   Ⓑ Truncation
Ⓒ Arithmetic underflow   Ⓓ Round off

Q25: The only binary operator in the following is:

Ⓐ ?   Ⓑ ++   Ⓒ --   **Ⓓ** +

Q26: Which operators are used to join two or more conditions?

Ⓐ Relational   **Ⓑ** Logical   Ⓒ Assignment   Ⓓ Comparison

Q27: Relational operators allow you to _____ value:

Ⓐ Compare   Ⓑ Add   Ⓒ Multiply   Ⓓ Divide

Q28: Which is a numeric data type?

Ⓐ Floating point   Ⓑ Integer   **Ⓒ** Both A & B   Ⓓ String

Q29: How many types of real data are in C language?

Ⓐ 1   Ⓑ 2   **Ⓒ 3**   Ⓓ 4

Q30: The number of bytes used by " float " data type in C is:

Ⓐ 2   **Ⓑ 4**   Ⓒ 6   Ⓓ 8

Q31: Which of the following data type is used to store " String " ?

Ⓐ Char   Ⓑ Float   Ⓒ String   Ⓓ Double

Q32: What happens when the result of a calculation exceeds the capacity of the data type?

Ⓐ System error   Ⓑ Logic error   Ⓒ Syntax error   **Ⓓ Overflow**

Q33: When a relational expression is false , it has the value:

Ⓐ Zero   Ⓑ One   Ⓒ Less than zero   Ⓓ Two

Q34: All of the following are logical operators expect:

Ⓐ &&   Ⓑ || Ⓒ !   **Ⓓ >=**

Q35: a + = b is equivalent to:

Ⓐ b + = a   Ⓑ a = + b   **Ⓒ a = a + b**   Ⓓ b = b + a

Q36: The value of C expression 5/9*2 are:

Ⓐ 0.27   Ⓑ 1.11   Ⓒ 2   Ⓓ 4

Q37: For A = 4 and B = 4 which expression evaluates as true?

Ⓐ A > = B   Ⓑ A ! = B   Ⓒ A ! = B   Ⓓ A > B

Q38: The expression p - = q is equivalent to:

Ⓐ p = q - p   Ⓑ p = q - 1   **Ⓒ p = p - q**   Ⓓ q = p - q

Q39: An expression that uses a relational operator is known as:

Ⓐ Operational   Ⓑ Sequential   Ⓒ Serial   **Ⓓ Relational**

Q40: The symbols that perform operations on data are called:

Ⓐ Operators   Ⓑ Syntax   Ⓒ Operation code   Ⓓ Operands

Q41: The expression 11% 3 has a value equal to:

Ⓐ 1   **Ⓑ 2**   Ⓒ 3   Ⓓ 4

Q42: Any relational expression produces following results:

Ⓐ True   Ⓑ False   **Ⓒ Either A or B**   Ⓓ Any value

Q43: Logical operators are:

Ⓐ NOT   Ⓑ AND   Ⓒ OR   **Ⓓ All of these**

Q44: An expression consists of:

Ⓐ Operators	Ⓑ Operands	**Ⓒ Both A & B**	Ⓓ None of these

Q45: The text written between /* and */ is called:

Ⓐ Command	Ⓑ Line	Ⓒ Sentence	**Ⓓ Comment**

Q46: Variable are created in:

Ⓐ RAM	Ⓑ ROM	Ⓒ Hard Disk	Ⓓ Cache

Q47: Which of the following is a valid character constant?

Ⓐ a	Ⓑ "6"	**Ⓒ '6'**	Ⓓ =

Q48: Which of the following data type offers the highest precision?

Ⓐ Float	Ⓑ Long int	**Ⓒ Long double**	Ⓓ Unsigned long int

Q49: When the result of the computation of two very small numbers is too small to be represented, this phenomenon is called:

Ⓐ Arithmetic overflows	Ⓑ Truncation	**Ⓒ Arithmetic underflow**	Ⓓ Round off

Q50: The symbol '=' represents:

Ⓐ Comparison operator	Ⓑ Equal to operator
Ⓒ Assignment operator	Ⓓ None of these

Q51: Which of the following operators has lowest precedence?

Ⓐ !	Ⓑ +	**Ⓒ =**	Ⓓ ==

Q52: Relational operators are used to:

Ⓐ Establish a relationship among variables	**Ⓑ Compare two values**
Ⓒ Constant compound condition	Ⓓ Perform arithmetic operations

Q53: C is a strongly typed language, this means that:

- Ⓐ Every program must be compiled before execution
- **Ⓑ Every variable must be declared before it is being used**
- Ⓒ The variable declaration also defines the variable
- Ⓓ Sufficient data types are available to manipulate each type of data

Q54: The logic not operator, denoted by ! , is a:

Ⓐ Ternary operator	Ⓑ Binary operator	**Ⓒ Unitary operator**	Ⓓ Bitwise operator

Q55: a + = b is equivalent to:

Ⓐ b + = a	Ⓑ a = a - b	**Ⓒ a = a + b**	Ⓓ b = b + a

Q56: An expression that uses a relational operator is known as:

Ⓐ Operational	Ⓑ Serial	Ⓒ Sequential	**Ⓓ Relational**

Q57: An expression consists of:

Ⓐ Operators	Ⓑ Operands	**Ⓒ Both A & B**	Ⓓ None of these

Q58: The expression 0 % 4 has a value equal to:

Ⓐ 4	Ⓑ 1	Ⓒ 2	**Ⓓ 0**

Short Questions

Q1: What is an identifier?

Ans: In a program, the names that are used to represent variables, constants, types, functions and labels are called identifiers. We can use any number of characters as identifiers but the first 31 are significant to C compiler.

Q2: What is user defined identifier?

Ans: User defined identifiers are the names assigned by the programmer to functions, data types, variables etc in a program. For example age, r_no can be user defined identifier in a program.

Q3: What is standard identifier?

Ans: The identifier that have a special meaning in C language are called standard identifiers. These identifiers can be redefined. But this is not recommended. If we redefine a standard identifier in a program C compiler cannot use it for its original purpose. For example printf and scanf are standard identifiers.

Q4: What is a keyword?

Ans: The words that have predefined meanings and purpose in C language are called keywords of C language. These are also called reserved words. The purpose of keywords is predefined.

They cannot be used for any other purpose in C language programs. All keywords are written in lower case. Keywords cannot be used as identifiers. In C language 32 WORDS are defined as keywords.

Q5: What is a variable?

Ans: Computer programs are developed to solve different problems. In these problems, different types of data are used as input. Programs process data and generate output.

The data given as input is stored in the main memory for processing. After processing the results are also stored in main memory. Main memory is a collection of bytes.

These bytes are also called memory locations. So "The named memory locations used to store input data and result, during the execution of the program is called variable".

Q6: What is a constant?

Ans: The quantity whose value cannot be changed during the execution of the program is called constant. Constants can be declared like variable. To declare a constant 'const' keyword is used. For example

❖ const int x = 10;

Q7: What is meant by variable declaration?

Ans: Specifying variable name and the type of data it can contain is called variable declaration. C is a strongly typed language. In C language a variable must be declared before it is used to store data. If we use a variable without declaration compiler will generate an error at compile time.

Q8: What is variable initialization?

Ans: Storing a value in variable at declaration time, is called initialization. When we declare a variable some memory is allocated to it, according to its type. This memory already

contains some data. This meaningless is called garbage. If we use variable without assigning a value the result will not be correct. We should initialize a variable before using it.

Q9: What is meant by typed language?

Ans: Specifying variable name and the type of data it can contain is called variable declaration. C is a strongly typed language. In C language a variable must be declared before it is used to store data. If we use a variable without declaration compiler will generate an error at compile time.

Q10: What are the different types of constants?

Ans: The quantity whose value cannot be changed during the execution of program is called a constant. Constant can be declared like variable. To declare a constant 'const' keyword is used. There are two types of constants in C language:

➢ Numeric constants
➢ Character constants

Q11: What is meant by data type?

Ans: Computer programs are used to solve different types of problems with computer. Computer program take data as input process it and produce results in the form of output. Computer program can process different types of data. Data type is defined as the set of values and a set of operations allowed on those values. It also tells us about the memory required to store that data.

Q12: What is meant by standard data type?

Ans: Data types that are defined as the part of the language are called standard data types. For example int, char, etc are standard data type in C language.

Q13: What is meant by user defined data type?

Ans: In addition to standard data types user can define its own data type. These data types are known as user defined data types. Standard data types can be used in all C language program but user defined data type can only be used in a program in which it is defined.

Q14: Which data types can be used to store integer data?

Ans: Data types for Integers:

➢ int
➢ short int
➢ long int
➢ unsigned int
➢ unsigned long int

Q15: Which data types can be used to store floating-point data?

Ans: Data types for Real Numbers:

➢ float
➢ double
➢ long double

Q16: **What is a cancellation error?**

Ans: Cancellation error occurs when an arithmetic operation is performed between very large and a very small floating point number. Due to this error computer produces unexpected results.

If a large number and a small number are added the large number may cancel out the small number. For example if we add 1872.0 and 0.0000000005747 the result may be 1872.00000.

Q17: **What is meant by underflow?**

Ans: When a value is stored in a variable that is less than its minimum range, that value cannot be stored in it properly. An error occurs. This error is called an underflow error. For example if we store a number less than -32768 in an int type variable an underflow error will occur.

Q18: **What is meant by overflow?**

Ans: When a value is stored in a variable that is greater than its maximum range, that value cannot be stored in it properly. An error occurs. This error is called overflow error. For example if we store a number greater than 32767 in an int type variable an underflow error will occur.

Q19: **What is character data type?**

Ans: To store a character data type chat is used. char type variable use one byte in memory. Character values are enclosed in single quotes in C language for example '?', 'a'.
When we store a character in char type variable, ASCII value of that character is stored in it. ASCII stands for American Standard Code for Information Interchange.
In this code each character is assigned a unique numeric value that value is called ASCII code for that character.

Q20: **How are characters stored?**

Ans: When we store a character in char type variable, ASCII value of that character is stored in it. ASCII stands for American Standard Code for Information Interchange

In this code each character is assigned a unique numeric value that value is called ASCII code for that character. For example ASCII code of 'A' is 65 and 'B' is 66. As char-type variables contain numeric ASCII code, arithmetic operation can be performed on them.

Q21: **What is an operators?**

Ans: In computer programs we perform different types of operations on data. Operators are symbols that are used to perform different operation on data. There are different types of operators in C language. For example + symbol is used to add two numeric values written on both sides.

Q22: **What are different types of operators?**

Ans: Different types of operator available in C language are:

➤ Arithmetic operator
➤ Relational operator
➤ Logical operator
➤ Increment and Decrement operator Assignment operator

Q23:   What is an arithmetic operator?

Ans: The operators that are used to perform arithmetic operation on numeric data are called arithmetic operators. These operations can operate on numeric variable or constants.

Q24:   What is an assignment operator?

Ans: The symbol is called assignment operator. It is used to store a value of a result of an expression in a variable.

Q25:   What is an assignment statement?

Ans: A C language statement in which assignment operator is used is called assignment statement. The general form of an assignment statement is

Variable = expression.

It is used to assign a value or result of an expression to a variable. The name of variable is always written on the left side of assignment operator. The value or expression is always written on the right side of assignment operator.

Q26:   What is a compound assignment?

Ans: An assignment statement that is used to assign one value to more than one variable is called compound statement. The assignment operator = is used more than once in this statement. For example

➤ A =B = 10;

In the above statement, a value 10 is assigned to both variables A and B.

Q27:   What is compound assignment operator?

Ans: A combination of assignment operator with arithmetic operator is called compound assignment operator. These are also used to perform arithmetic operations.

For example +===,=,=, % are compound assignment operator.

Q28:   What is increment operator?

Ans: A double plus (++) sign is called increment operator. It is a unary operator. It is used to add 1 to the current value of a variable. It cannot be used with a constant or an expression. It can be used before or after the variable. For example x++ and ++x are valid but 14++ is not valid.

Q29:   What is decrement operator?

Ans: A double minus (--) sign is called decrement operator. It is a unary operator. It is used to subtract one from the current value of a variable. It cannot be used with a constant or an expression. It can be used before or after the variable name. For example x-- and --x are valid but 14-- is not valid.

Q30:   What is relational expression?

Ans: A combination of relational operators and operands is called relational expression. The operands may be constants or variables. Operands should be of same type. After evaluation a relational expression generates True or False.

Q31:   What are logical operators?

Ans: The symbols used in compound expression are called logical operators. AND, OR and NOT are logical operators available in C language.

Q32: <u>**What is logical expression?**</u>

Ans: A combination of relational expression and logical operators is called a logical expression. It is used for calculation. Its evaluation gives a single numeric value.

Q33: <u>**What is an AND operator?**</u>

Ans: If the relational expression on both sides of AND generates true the final result is true. It is represented by && symbol.

Q34: <u>**What is OR operator?**</u>

Ans: If any of the relational expression on both sides of OR generates true the result is true. It is represented by || symbol.

Q35: <u>**What is NOT operator?**</u>

Ans: It is used to convert true to false and false to true. It is represented by ! symbol.

Q36: <u>**What is meant by operator precedence?**</u>

Ans: The order in which different types of operators in an expression are evaluated is called order of precedence of operator. It is also called hierarchy of operators different types of operators have different precedence level. The operators having high precedence are evaluated first.

Q37: <u>**What is an expression?**</u>

Ans: A combination of operators and operands is called an expression. Expression is used to calculate the values of formulas. The evaluation of an expression gives a single value. The operands of an expression may be constants or variable. For example a + b, a +5, and 5 + 6 are all expressions.

Q38: <u>**What are comments?**</u>

Ans: In C language program the lines written between /* and */ are considered as comments. The compiler ignores these lines. These are used to add remarks in the program.

Comments are also used to explain the logic of the program. Comments are used to increase the readability of the program. Comments can be added anywhere in the program.

Q39: <u>**What is a single line comment?**</u>

Ans: In C language program the lines written between /* and */ are considered as comments. The compiler ignores these lines. These are non-executable statements. These are used to add remarks in the program. If a comment consists of one line it is called single line comment. Single line comment can be made by the use of // it has no ending it consists of only one line.

Q40: <u>**What is multi line comment?**</u>

Ans: In C language program the lines written between /* and */ are considered as comments. The compiler ignores these lines. These are non- executable statements.

These are used to add remarks in the program. If a comment consists of more than one line then it is called multi line comment.

Q41: <u>**What is prefix increment?**</u>

Ans: If increment operator is written before the variable name then it is called prefix increment operator. For example ++x. In this case of prefix increment the value of variable is incremented by one and then it is used.

Q42: <u>**What is postfix increment?**</u>

Ans: If increment operator is written after the variable name then it is called postfix increment operator. For example x++. In this case of postfix increment first the value of variable is used then incremented by 1.

Q43: <u>**What is prefix decrement?**</u>

Ans: If decrement operator is written before the variable name then it is called prefix decrement operator. For example --x. In this case of prefix decrement first the value of variable is decremented by one and then it is used.

Q44: <u>**What is postfix decrement?**</u>

Ans: If decrement operator is written after the variable name then it is called postfix decrement operator. For example x--. In this case of postfix decrement first the value of variable is used then decremented by 1.