

CHAPTER NO. 02 PROGRAMMING IN C

EXERCISE

Short Questions

Q. No.01: Define Computer program.

Ans: Set of instructions or statements written in a programming language to perform certain task or particular problem is called computer program.

Q. No.02: Differentiate between syntax and semantic.

Ans: Syntax:- Rule and regulations of any programming language that must be followed while writing computer program i.e in C program `int a=10;` here statement end with semi colon. If programmer will not put semi colon at the end of statement then there will be syntax error and program will not execute.

Semantic:- Semantic in computer program describe the sequence of operations to be performed by the computer when executing the statements.

i.e `val=a+b;` // here first value of a and b will be added then assigned to variable val.

Q. No.03: Write three differences between Assembly language and HLLs.

Ans: High Level language:-

English like words are used in HLL.

Easy to modify or debug.

Require large storage.

Assembly language:-

Symbols are phrases are used in Assembly language.

Difficult to modify or debug.

Require less storage.

Q. No.04: Write four characteristics of HLLs.

Ans: Following are the four characteristics of High Level Language:

Easy to learn.

Easy to debug and modify.

Machine independent.

Availability of different built-in functions.

Short programs.

Well defined syntax.

Q. No.05: Define Integrated Development Environment (IDE).

Ans: Integrated Development Environment:- Integrated Development Environment is a environment or platform that is used in modern programming languages to create or write , compile, debug and run computer programs. All features are grouped in single place for a programmer to design/build applications.

Q. No.06: Differentiate between constant and variable.

Ans: Constant:- Constant is a quantity whose value does not change during program execution i.e 7, 16.2, "ABC" , "PK123" etc.

Variable:- Variable is a quantity whose value can by changed during program execution i.e `sum=0; sum=sum+1;` // Now the value of variable sum is changed from 0 to 1.

Q. No.07: Which of the following are valid C variables? Give reason if not a valid variable i.e Area, 5x, Sum, net pay, float, _age, else, case, size22, my_weight

Ans: Following are the valid variable names:
Area, sum, size22, my_weight, _age.

Following are the invalid variable names with reasons:

5x : Invalid name because name cannot start with number

net pay: Invalid name because spaces are not allowed.

float: Invalid name because reserve words are not used.

else: Invalid name because reserve words are not used.

case: Invalid variable name because reserve words are not used.

Q. No.08: What are reserve words? Why they should not be used as variable names?

Ans: Reserve/keywords are part of any programming language and have predefined/special purpose in programs. Reserve words are mostly written in lower case and cannot be used as variable name. i.e case, float, else, if etc.

Q. No.09: Why comments are used in programs?

Ans: Comments are used in computer programs to bring attention to necessary facts/logics to other programmers or readers. It also explains the nature and structure of a program.

// single line comments.

/**/ multiline comments.

Q. No.10: What is the use of typecasting in C programs?

Extensive Questions

Q. No.01: Describe the following HLLs.

a. C/C++ b. Visual Basic c. C# d. Java

Ans: C/C++:- C language is a high level language developed by Dennis Ritchie at Bell laboratories in 1972. It is easy to learn and understand, in past it was mainly used to write system programs such as operating system, compilers etc..

Visual Basic:- Visual Basic is a high level language which evolve from the earlier version of BASIC. It is used to write powerful programs in graphical development environment.

C#:- C sharp is a high level language developed by Microsoft. It is a general purpose programming language. It is similar to C and C++ programming language. It also has some features of Java programming language.

Java:- Java is a high level language. It is most powerful language to write computer programs for different devices, computers, network and web applications etc. Syntax of Java language is similar to C/C++, C#.

Q. No.02: Differentiate between Compiler and Interpreter.**Ans: Compiler:-**

It converts a program into machine code as a whole.

It creates object code file.

Program execution is fast.

Display the syntax errors after compiling program.

Interpreter:-

It converts a program into machine code statement by statement or line by line.

It does not create object file.

Program execution is slow.

Display errors if occurs after each statement.

Q. No.03: Describe the function of linker and loader programs.**Ans: Linker:-** Linker is a software that is used to translate object program into a single executable program, during this process , it also check the definition of a function, if it is not found then it would assume that is defined in C library.**Loader:-** Loader is a software that is used to load the program into memory and then execute it.**Q. No.04: What are the rules specifying a variable name in C language?****Ans:** Following are the rules for specifying variable names in C language:

Name must start with letter or underscore.

Maximum 31 characters are used as a variable name.

Both upper and lower case are used as a variable name.

Special characters are not used as a variable name @, #, ? etc.

Reserve words are not allowed.

Spaces are not allowed but underscore is used for readability point of view.

Q. No.06: What is a preprocessor? Give examples.**Ans: Preprocessor:-** Preprocessor programs provide preprocessor directives which tell the compiler to preprocess the source code before compiling. All these preprocess directives begins with # sign e.g #include and #define.

Example:-

```
#include<math.h>
#include<conio.h>
#define AGE 40
main()
{
int k; k=AGE;
printf(" k=%d", k);
getch();
}
```

Q. No.05: What is the difference between implicit typecasting and explicit typecasting? Give examples.