**Assignment-01 (Programming Fundamentals)**

**BS/SE (Computing)**

**Deadline for submission (25-03-2020)**

***Write down the answers of following questions in your words and understanding:***

Q#01: Differentiate the following:

a) Compiler vs Interpreter

b) High-level vs low-level languages

c) Source code file vs Object file

d) Procedural Language vs Object-oriented Language

e) Logical vs Syntax errors

|  |  |
| --- | --- |
| COMPILER | INTERPRETER |
| Compiler converts the entire code into machine language before running | Interpreter does not compile the code instead runs the code directly |

|  |  |
| --- | --- |
| HIGH-LEVEL | LOW-LEVEL |
| Languages which are more close to human understanding are known as high level languages.  It is slow because it has to be converted into low-level language to be understood by the computer. | Languages which are close to machine understanding are known as low level languages.  It is fast because it does not require conversion. |

|  |  |
| --- | --- |
| SOURCE CODE FILE | OBJECT FILE |
| It is the storage file in for the compiler and the file which contains the high level language code | It is the executable file and the file which contains the low-level language code |

|  |  |
| --- | --- |
| PROCEDURAL LANGUAGE | OBJECT-ORIENTED LANGUAGE |
| A language which is structured and relies heavily on the following of proper syntax. Contains libraries and functions which can be used by calling them when the source code is being written. | In this computer programs are designed using the concept of objects that interact with the real world. So objects are used which contain some sort of data in different forms like code or attributes. |

|  |  |
| --- | --- |
| LOGICAL ERROR | SYNTAX ERROR |
| In a logical error program executes correctly but desired result is not obtained e.g. trying to store a decimal in an int rather than a float or double when dividing. | An error that is caused when the syntax of a language is not followed i.e. missing terminator ; or >>, due to which the program doesn't run. |

Q#02: Write down the whole process of source code program execution in your own words.

In order for a program to become fully usable or executable it goes through a series of steps, some performed by the programmer and some by the machine. First and foremost the programmer has to write the source code. Secondly they have to perform edits to make sure that everything is in order before compiling and running the program. After that the source code file is sent to the compiler but not before it goes through some preprocessing program which processes the code and then forwards it to the compiler which converts the high level source code file into low level object file. The object file is then stored on disc and a linker connects the code in the object file to the libraries used in the code and basically creates an executable file then stores it on the disc. After which it is sent to the loader which loads an image of the file to the RAM which is then ultimately sent to the CPU for execution.

Q#03: Just highlight the correct and valid variables identifier from the following given list:

int, Marium, 12\_abc, foxpro, taq3, x-y, double, Taq Ahd, as\_bd, 3abc

Q#04: Select the suitable choice from the following:

C programs are converted into machine language with the help of

(1) An Editor

(2) A compiler

(3) An operating system

(4) None of the above

A character variable can at a time store

(1) 1 character

(2) 8 characters

(3) 254 characters

(4) None of the above

A C variable cannot start with

(1) An alphabet

(2) A number

(3) A special symbol other than underscore

(4) Both (2) & (3) above

Which of the following statements is false

(1) Each new C instruction has to be written on a separate line

(2) Usually all C statements are entered in small case letters

(3) Blank spaces may be inserted between two words in a C statement

(4) Blank spaces cannot be inserted within a variable name

C as a ------------------ language.

1) Procedural

2) Structural

3) Object oriented

4) None of the above

The extension of source program file is: **(in c++?)**

1) Obj

2) Cpp

3) Exe

4) Bak

The -------------- file contains the definition of built-in functions

1) Object file

2) Header file

3) Preprocessor directives

4) Executable file

The ----------object is used for an input stream

1) Cout

2) Cin

3) Print

4) None of these

-------------- is/are most common kind of preprocessor directives

1) Define

2) Include

3) Both of the above

4) None of these

**CLASSWORK**



