Que. Write the execution of Sample.c to a.out executable binary file of C program.

Ans-
The process of creating an executable binary file from a C file includes following steps:

1) Preprocessing:
In this step, the preprocessor takes the source code file and processes it to create a modified source code file. The preprocessor expands macros i.e. The preprocessor replaces defined macro names with their corresponding values throughout the source code. Macros are defined using the #define directive., includes header files, and removes comments.

2) Compilation:
The compiler then takes the preprocessed source code file and translates it into assembly language code or machine code that can be executed on a computer. During this step, the compiler checks for syntax and semantic errors.

3) Assembly:
The assembler then takes the assembly language code generated by the compiler and converts it into machine code.

4) Linking:
If the program requires additional libraries or external functions, the linker will link the object code generated by the compiler with the required libraries to create an executable binary file. The linker resolves external symbol references and generates relocation information for the binary file.

5) Execution:
The executable binary file is loaded into memory by the operating system and executed by the processor.