

Programme(D)/3rd/DCSE302

2024

System Programming

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1.	a)	Define various functions of the operating system and state the difference between application software.	10
	b)	What is a linker, and what is its main purpose? Explain with an example.	10
2	a)	What is a loader, and what role does it play in program execution?	10
	b)	What are different tables used by assemblers, explain with an example?	10
3	a)	What are the steps involved in translation of a C program and steps in linking an executable file?	10
	b)	Define Macro and write a Macro to increment a memory value.	10
4	a)	What is an assembler, and what is its primary function?	10
	b)	Write an assembly language program for the expression $X = A * B + C / D$	10
5	a)	Describe the difference between a one-pass assembler and a two-pass assembler.	10
	b)	Explain the difference between absolute loader and compile and go loader.	10
6	a)	How does an assembler convert assembly code into machine code? Explain with an example.	10
	b)	Write the variant-I intermediate code of the assembly programming of Question 4 b).	10
7	a)	Describe various phases of the compiler with an example.	10
	b)	What is the process? Draw and explain the process state transition diagram.	10