

PRN No.	
---------	--

PAPER CODE	V313-295-A-B
---------------	--------------

December 2023 (ENDSEM) EXAM**TYB.TECH (SEMESTER - I)**

COURSE NAME: System Programming Branch: E&TC COURSE CODE: ETUA31205A
(PATTERN 2020)

Time: [1Hr. 30 Min]**[Max. Marks: 40]**

(*) Instructions to candidates:

- 1) Figures to the right indicate full marks.
- 2) Use of scientific calculator is allowed
- 3) Use suitable data wherever required
- 4) All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4, 5 and 6 respectively.

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) What are tokens?	[2]	CO1	Understand
Q2	a) Explain the process of macro definition and macro call.	[2]	CO2	Understand
Q3.	a) Explain the concept of a Compile and Go loader and its advantages.	[6]	CO3	Understand
	b) Discuss how overlay structure helps in managing program size.	[6]	CO3	Apply
Q.4	a) Define the structure of a compiler. Explain the purpose of the front-end and back-end components.	[5]	CO4	Understand
	b) Explain the significance of the specification of tokens in the lexical analysis phase.	[5]	CO4	Apply
	c) Explain the term "bootstrap compiler." What role does it play in the development of a compiler?	[5]	CO4	Apply
Q.5	a) Construct LL(1) Parsing Table for the given grammar S->AB eDa A->ab c B->dC C->eC e D->fD e	[5]	CO5	Analyze
	b) Explain the shift-reduce parsing technique. How is it applied in bottom-up parsing?	[5]	CO5	Understand
	c) Outline the key components of a YACC specification file.	[5]	CO5	Understand
Q.6)	a) Explain the concept of basic blocks and flow graphs in the context of code generation.	[5]	CO6	Understand
	b) Explain the concepts of induction variables and reduction in strengths in the context of code optimization.	[5]	CO6	Understand
	c) Discuss the application of dynamic programming in code generation for optimization.	[5]	CO6	Understand

