

PRN No.	
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PAPER CODE	UB14-295-A (ESE)
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(AY:2024-25) December 2024 (ENDSEM) EXAM

TY (SEMESTER - I)

COURSE NAME: System Programming

COURSE CODE:

ETUA31205A

Branch: Electronics and Telecommunication

T.Y PATTERN 2020

Time: [1Hr 30 Min]

[Max. Marks: 40]

(*) Instructions to candidates:

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

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Explain Lexical Analysis Phase with example in the front end of a Toy Compiler.	[4]	CO1	Understand
	b) Write down the Intermediate Code in Variant I for the given Assembly Code START 400 READ A MOVER ARGEG, A SUB AREG, ='5' MOVER BREG, ='4' ADD AREG, BREG STOP A DS 1 LTOrg	[4]	CO1	Apply
	c) List all the Data Structure produced in after Pass I of Assembler and explain them in detail.	[4]	CO1	Understand
Q2	a) Differentiate between a macro and a function in programming languages.	[4]	CO2	Analyze
	b) Describe the steps involved in the macro expansion process.	[4]	CO2	Understand
	c) List type of parameters is defined in a Macro. Explain two within an example.	[4]	CO2	Understand
Q3	a) Explain the concept of relocation in the context of a linker. OR	[2]	CO3	Understand
	b) Define Translated Origin and Linked Origin	[2]	CO3	Understand
	c) Define the overlay structure in the context of program execution	[4]	CO3	Understand
Q4	a) Define Patterns and Lexeme OR	[2]	CO4	Understand
	b) List Compiler Phases	[2]	CO4	Understand
	c) Explain Uniform Symbol Table with example	[4]	CO4	Understand

Q.5	<p>a) Find First for S and B given grammar LL1 parser.</p> <p>S \rightarrow Bb Cd B \rightarrow aB ϵ C \rightarrow cC ϵ</p> <p style="text-align: center;">OR</p> <p>b) List down the rules for LL1 parser c) Explain the shift reduce Parser with an example</p>	[2]	CO5	Analyze
Q.6	<p>a) What is Register Allocation in Code Optimization? OR</p> <p>b) What is a Flow graph? c) Explain the concepts of Dead Code Elimination in the context of code optimization.</p>	[2] [2] [4]	CO6 CO6 CO6	Understand Understand Apply