Hall Ticket Number :										

R-19

Code: 19A561T

III B.Tech. II Semester Regular Examinations July 2022

Compiler Design

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.		Consider the following fragment of code: i=i*70+j+2. Write the output of the compiler for the above C code and elaborate about the phases of compiler.	14M	CO1	L2
		OR			
2.	a)	Write a short notes on input buffering scheme with example.	10M	CO1	L2
	b)	Draw the schematic diagram for Language processing system with functions performed in each software.	4M	CO1	L2
		UNIT–II			
3.		S1→S1 FW S2|S2 S2→S2 PW S3|S3 S3→**CAT |DOG** FW→**Fought with** PW→**Played with** From the above scenario, construct the Grammar and write down the productions. Check whether the Grammar is LL(1) or not and parse the input string " CAT Fought With DOG" to check whether the string is accepted or not. Where S1, S2, S3, FW and PW are the variables and CAT, DOG, Foughtwith and Playedwith are the terminals.	14M	CO2	L4
		OR			
4.	a)	Compute FIRST and FOLLOW for the following Grammar S→ABCD , A→a/ε, B→CD/b , C→C/ ε, D→Aa/d/ ε	6M	CO2	L4
	b)	Consider the Grammar S→0B/1A, A→0/0S/1AA B→1/1S/0BB Find LMD and RMD for the input string from the Grammar w=0110	8M	CO2	L4

UNIT–III

5. Construct SLR Parsing table for the following grammar and hence check whether the string **(id + id)** is accepted or not.
   E -> E + T | T
   T -> T * F | F
   F -> (E) | id — 14M CO3 L4

OR

6. Construct SLR parsing table for the context free grammar G whose production rules are S→aSb , S→ab
   and check for the input String " aaabbb" — 14M CO3 L4

UNIT–IV

7. a) Describe in detail about the storage allocation strategies. — 10M CO4 L5
   b) Illustrate annotated parse tree with synchronized and inherited attribute for expression 3*5 for the given grammar.
   E → TR, T → FS, F → n, S → *T|ε , R → ε — 4M CO4 L5

OR

8. Write quadruples, triples and indirect triples for the expression: -(a*b)+(c+d)-(a+b+c+d) and explain the sequences of code generation algorithm. — 14M CO4 L2

UNIT–V

9. a) Explain about loop optimization with suitable example. — 7M CO5 L2
   b) Explain peephole optimization in details. — 7M CO5 L2

OR

10. Consider the following classification metrics:
    x1=x2=-1;
    y1=y2=1;
    x3=3;
    y3=-1
    m12 = (y2 – y1)/(x2 – x1);
    m23 = (y3 – y2)/(x3 – x2);
    Interpret the instruction and generate three Address code and DAG for the above given expressions. — 14M CO5 L5

END

Hall Ticket Number :										

R-19

Code: 19A562T

III B.Tech. II Semester Regular Examinations July 2022

Object Oriented Analysis and Design

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	Illustrate the conceptual model of UML in detail.	10M	CO1	L3
	b)	List the principles of modelling in UML.	4M	CO1	L1
		OR			
2.	a)	What is relationship? List and explain different types of relationships?	7M	CO1	L1
	b)	Explain in detail about software development life cycle.	7M	CO1	L2
		UNIT–II			
3.	a)	Draw and explain the class diagram for online shopping.	8M	CO2	L4
	b)	What is class diagram? Enumerate steps to model simple collaborations of class diagram?	6M	CO2	L1
		OR			
4.	a)	What are the various kinds of classifiers? Explain.	7M	CO2	L1
	b)	What is an object diagram? Give the steps to model an object diagram.	7M	CO2	L1
		UNIT–III			
5.	a)	Draw the swimlane flowchart for ATM system.	7M	CO3	L4
	b)	Summarize the purpose of usecase, actor and flow events.	7M	CO3	L2
		OR			
6.	a)	State and explain forking and joining in activity diagram with suitable example.	7M	CO3	L2
	b)	Briefly explain the terms activity state, action state, transition and branching in the activity diagram.	7M	CO3	L2
		UNIT–IV			
7.	a)	What are the states that are associated with borrowing a book from library system? Draw the state diagram that explains various states of issuing a book.	7M	CO4	L4

	b)	What is an event? What are the different types of events?	7M	CO4	L1

OR

8.	a)	What is meant by state machine? Illustrate about sequential substates and history states with an example.	8M	CO4	L3
	b)	Explain about time and space.	6M	CO4	L2

UNIT–V

9.	a)	Compare the following: i) Components and classes ii) Nodes and components	7M	CO5	L4
	b)	Describe the modeling techniques for component diagram.	7M	CO5	L2

OR

10.	a)	State and explain deployment diagram. Illustrate steps for modeling a client/server system.	7M	CO5	L1
	b)	Explain the steps to model the embedded system and distributed application.	7M	CO5	L2

END

Hall Ticket Number :										

R-19

Code: 19A56GT

III B.Tech. II Semester Regular Examinations July 2022

Software Testing Methodologies

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.		Define a bug? State and Explain Taxonomy of bugs.	14M	CO1	L1
		OR			
2.		Explain the model for testing with a neat sketch.	14M	CO1	L2
		UNIT–II			
3.	a)	What is meant by path testing? Explain the path testing criteria.	7M	CO2	L2
	b)	Discuss about path instrumentation.	7M	CO2	L2
		OR			
4.		Illustrate predicates, path predicates and achievable paths.	14M	CO2	L4
		UNIT–III			
5.		What is a transaction and transaction flow? Discuss in detail about transaction flow testing.	14M	CO3	L2
		OR			
6.	a)	What are domain bugs? Discuss with suitable examples how to test for domain bugs.	7M	CO3	L2
	b)	Write short notes on domains and interfaces testing.	7M	CO3	L2
		UNIT–IV			
7.	a)	Discuss about path expression with a suitable example.	10M	CO4	L2
	b)	List out the applications of Decision Tables.	4M	CO4	L1
		OR			
8.		Illustrate a path reduction procedure with a suitable example.	14M	CO4	L3
		UNIT–V			
9.	a)	Discuss about matrix powers and products with suitable examples.	7M	CO5	L2
	b)	Demonstrate the node reduction algorithm.	7M	CO5	L3
		OR			
10.	a)	What are state graphs? Discuss about good and bad state graphs.	7M	CO5	L2
	b)	Illustrate state testing.	7M	CO5	L4

END

Hall Ticket Number :										

R-19

Code: 19A16HT

III B.Tech. II Semester Regular Examinations July 2022

Water Resources and Conservation

(Common to ME & CSE)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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Marks

UNIT–I

1. Explain in detail global water resources. Write an essay on history of irrigation developments in India. 14M

OR

2. Define hydrologic cycle. Sketch the cycle and tabulate the various processes and storages involved in the system. 14M

UNIT–II

3. List of least ten engineering activities where hydrological studies are essential. 14M

OR

4. Explain causes of pollution & control measures of pollution for any three pollution 14M

UNIT–III

5. Outline the steps required to prepare a plan for water resources development 14M

OR

6. Discuss the rainwater harvesting and its importance in urban arrears. 14M

UNIT–IV

7. Explain efforts on water conservation measures in developed & developing countries. 14M

OR

8. Discuss environmental discourse consideration in dam construction. 14M

UNIT–V

9. Write a short notes on use of modern irrigation methods. 14M

OR

10. Define Runoff and discuss the various remedial measures to reduce surface runoff. 14M

END

Hall Ticket Number :										

R-19

Code: 19A56AT

III B.Tech. II Semester Regular Examinations July 2022

.Net Technologies

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	Discuss about the .Net framework's goals and salient features.	10M	CO1	L2
	b)	Illustrate with example enumerations in C#.	4M	CO1	L3
		OR			
2.	a)	Develop a C# program to write student database in a flat file and read from the same file and print the 'marklist' of students.	10M	CO1	L6
	b)	Compare array with structure.	4M	CO1	L5
		UNIT–II			
3.	a)	Write short notes in the followings. i) Class members ii) Polymorphism	6M	CO2	L1
	b)	Discuss briefly about interfaces with example.	8M	CO2	L2
		OR			
4.	a)	Define inheritance. Write a C# program to demonstrate multilevel and multiple inheritance.	8M	CO2	L1
	b)	Illustrate with an example how the events are generated.	6M	CO2	L3
		UNIT–III			
5.		Apply the methods available for window based applications and build an application to accept the reservation details of a train ticket and to store the details in a database table. Use **list box** to choose the **train number and name.** Accept source and destinations in **text boxes.** Allow the user to enter the date of journey one month in advance. Assume that in each train, there are thirty tickets and every booking should have a unique number.	14M	CO3	L3
		OR			
6.	a)	Describe in short the following controls. Develop an application with each control. i) Checkbox ii) Radio Button	7M	CO3	L6
	b)	Write a C# program to display window form and explain.	7M	CO3	L1
		UNIT–IV			
7.	a)	Design an application with SDI and MDI and state the scenario in which these applications are used.	7M	CO4	L6
	b)	Develop a menu-driven application using file menu option. Demonstrate the execution model using an example.	7M	CO4	L6 L3
		OR			
8.	a)	How can be the menus and tool bar can be developed in windows forms.	8M	CO4	L2
	b)	What are MDI and SDI in C#? What are the features of MDI?	6M	CO4	L1
		UNIT–V			
9.	a)	Describe details about the ASP .Net Server Controls?	8M	CO5	L2
	b)	Discuss the difference between ADO and ADO .Net.	6M	CO5	L5
		OR			
10.	a)	What is the use of Master Pages in ASP.NET? How a Content page can be added to a Master Page.	7M	CO5	L1
	b)	Write a short note on ADO.Net Providers? Explain details about the Accessing Data bases using ADO.Net with an example?	7M	CO5	L2

END