

Hall Ticket Number :									
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R-17

Code: 7G152

III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Compiler Design

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

		Marks	CO	Blooms Level
UNIT-I				
1.	a) What is the use of Lex? Explain about the structure of Lex programs.	7M	CO1	L1
	b) Define context-free grammar. Discuss about Ambiguity with an example.	7M	CO1	L1
OR				
2.	Construct the predictive parsing table for the following grammar. E → E + T T T → T * F F F → (E) id Also write the moves made by predictive parser on input id+id*id.	14M	CO2	L5
UNIT-II				
3.	a) Explain about Error recovery in parsing by considering the below Expression grammar. E → E + E E * E (E) id	7M	CO2	L2
	b) Explain about Dangling Else ambiguity by considering the following grammar. S' → S S → iSeS iS a	7M	CO3	L2
OR				
4.	Using Shift reduce parsing, find whether the string id ₁ * id ₂ is accepted or not with respect to the following grammar. E → E + T T T → T * F F F → (E) id	14M	CO3	L4
UNIT-III				
5.	a) Discuss in detail about the Syntax Directed Definitions.	7M	CO3	L1
	b) Construct an annotate parse tree for 2*3+5n	7M	CO3	L5
OR				
6.	a) Explain about widening and narrowing type conversions between primitive conversions in java.	7M	CO4	L2
	b) Discuss about overloading of functions and operators.	7M	CO4	L4
UNIT-IV				
7.	a) Define symbol table. What are the contents of symbol table explain about their use.	7M	CO4	L2
	b) Discuss about the data structures used for the symbol table.	7M	CO4	L2
OR				
8.	Explain about Static, Stack and heap allocation strategies.	14M	CO4	L1
UNIT-V				
9.	a) Explain about Live variable Analysis.	7M	CO5	L2
	b) Explain code generation algorithm with an example	7M	CO5	L2
OR				
10.	a) What is basic block? How can you transform a basic block into a DAG?	7M	CO5	L3
	b) Discuss about various program transformations of peephole optimization.	7M	CO5	L4

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Code: 7G153

III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Computer Networks

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

		Marks	CO	Blooms Level
UNIT-I				
1.	a) In the TCP/IP protocol suite, what are the identical objects at the sender and the receiver sites when we think about the logical connection at the application layer? Explain.	7M	CO1	L3
	b) Compare and Contrast the FDM and TDM.	7M	CO1	L5
OR				
2.	a) List out the advantages and disadvantages of the OSI Reference model compare with the TCP/IP model.	7M	CO1	L3
	b) With neat sketch explain twisted pair cables, connectors of twisted pair cables With neat graph explain the performance of twisted-pair cables.	7M	CO1	L4
UNIT-II				
3.	a) List and explain the data link layer design issues.	7M	CO2	L3
	b) Datalink protocols almost always put the CRC in a trailer rather than in a header. Why? Explain	7M	CO2	L5
OR				
4.	a) Suppose that the case for checksum errors was removed from the switch statement of protocol 6. How would this change affect the operation of the protocol?	7M	CO2	L6
	b) Compare Go-Back-N and Selective Repeat sliding window protocols in terms of Storage and Bandwidth requirements to deal with the transmission errors.	7M	CO2	L5
UNIT-III				
5.	a) List and explain the Network layer Design Issues.	7M	CO3	L2
	b) Draw and explain the routing within a virtual circuit network.	7M	CO3	L3
OR				
6.	a) Explain the Application and Requirements of Quality of Service.	7M	CO3	L3
	b) Discuss the Network layer on the Internet.	7M	CO3	L4
UNIT-IV				
7.	a) Give a brief note on the TCP segment header	7M	CO4	L1
	b) Compare and contrast the two TCP/IP transport protocols: TCP and UDP, in terms of demultiplexing, reliability, and flow control.	7M	CO4	L2
OR				
8.	a) What are the services provided by the transport layer? Explain various methods to improve QoS.	7M	CO4	L2
	b) List and explain the Transport Services.	7M	CO4	L5
UNIT-V				
9.	a) DNS uses UDP instead of TCP. If a DNS packet is lost, there is no automatic recovery. Does this cause a problem, and if so, how is it solved?	7M	CO5	L3
	b) With the help of a common scenario explain the architecture of e-mail.	7M	CO5	L2
OR				
10.	a) Explain the Part of the DNS namespace divided into zones.	7M	CO5	L4
	b) Distinguish between a fully qualified domain name and a partially qualified domain name. Give relevant examples	7M	CO5	L5

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III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Microprocessors & Interfacing

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

Marks	CO	Blooms Level
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UNIT-I

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|---|----|----|
| 1. a) With the help of timing diagrams ANALYZE the minimum mode of 8086 microprocessor. | 8M | K4 |
| b) Find out Physical address for the following : | | |
| i) CS = 4000H, IP= ABC4H | | |
| ii) DS = 5000H, SI = 2000H | | |
| iii) SS = 90000H, SP=9000H | 6M | K3 |

OR

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|---|----|----|
| 2. a) Draw the internal block diagram of 8086 microprocessor and ANALYZE the both units | 6M | K4 |
| b) i) Explain the ASSEMBLY directives ORG, DB with examples | | |
| ii) Explain the INSTRUCTIONS DAA, ADD with examples | 8M | K3 |

UNIT-II

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|--|----|----|
| 3. a) Differentiate I/O interfacing methods of 8086 microprocessor. | 6M | K2 |
| b) Explain stepper Motor function and Write a program for stepper motor forward and backward rotation. | 8M | K2 |

OR

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|--|-----|----|
| 4. Explain the Operational Modes of 8255 along with Block Diagram. | 14M | K2 |
|--|-----|----|

UNIT-III

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|--|----|----|
| 5. a) Distinguish between programmed I/O and Interrupt driven I/O. | 6M | K2 |
| b) With neat sketch explain the architecture of 8259 PIC | 8M | K2 |

OR

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|--|-----|----|
| 6. Explain in detail about the Architecture of 8257 with neat diagram. | 14M | K2 |
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UNIT-IV

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| 7. Analyze 8251 USART architecture and interfacing with 8086. | 14M | K3 |
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OR

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| 8. Analyze 8253 mode of operations and it's interfacing with 8086. | 14M | K3 |
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UNIT-V

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|---|-----|----|
| 9. List the salient features of Pentium and Pentium pro processors. | 14M | K2 |
|---|-----|----|

OR

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| 10. Explain Paging operation in 80386. | 14M | K2 |
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III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Python Programming

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

UNIT-I

- | | Marks | CO | Blooms Level |
|--|-------|-----|--------------|
| 1. a) Demonstrate Associative Arrays in Python with an example | 7M | CO1 | L4 |
| b) Write a python script for addition of two matrix. | 7M | CO1 | L3 |

OR

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|---|----|-----|----|
| 2. a) Illustrate all the decision making statements in Python with suitable examples. | 7M | CO1 | L4 |
| b) Develop a Python script to find whether given number is prime or not. | 7M | CO1 | L6 |

UNIT-II

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|---|----|-----|----|
| 3. a) Illustrate various List Accessing Methods in Python. | 6M | CO2 | L4 |
| b) Summarize various built-in functions in Python. How to create a user defined function in Python? | 8M | CO2 | L5 |

OR

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|--|----|-----|----|
| 4. a) Distinguish various function prototypes in python? Explain with suitable examples. | 7M | CO2 | L3 |
| b) Construct a recursive Python function to generate Fibonacci series. | 7M | CO2 | L5 |

UNIT-III

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|--|----|-----|----|
| 5. a) Demonstrate method overriding in python with an example. | 7M | CO3 | L4 |
| b) Implement operator overloading concept using strings in python. | 7M | CO3 | L6 |

OR

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|---|----|-----|----|
| 6. a) How to handle exceptions in python? | 6M | CO3 | L2 |
| b) What is the difference between else block and finally block in exception handling? Illustrate with python program. | 8M | CO3 | L1 |

UNIT-IV

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|--|----|-----|----|
| 7. a) How to create a text file and write content in to the text file? Explain with a python script. | 7M | CO4 | L2 |
| b) Demonstrate seek() and tell() methods with syntax and examples. | 7M | CO4 | L4 |

OR

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|---|----|-----|----|
| 8. a) Write a Python script to concatenate the contents of given two files. | 7M | CO4 | L1 |
| b) Write a python script using regular expressions on files. | 7M | CO4 | L3 |

UNIT-V

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|---|----|-----|----|
| 9. a) List out the Thread class methods in detail. | 6M | CO5 | L2 |
| b) Define a Deadlock. Develop a Python script to avoid deadlock of threads. | 8M | CO5 | L1 |

OR

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|--|-----|-----|----|
| 10. Demonstrate Thread Synchronization in python with suitable examples. | 14M | CO5 | L4 |
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Code: 7G155

III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Software Engineering

(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

		Marks	CO	Blooms Level
UNIT-I				
1.	a) Define software engineering. What are the challenges of software engineering	10M	CO1	L1
	b) What are the software development lifecycle phases	4M	CO1	L2
OR				
2.	a) Explain Software development process models.	10M	CO1	L2
	b) Explain agility in the context of software engineering.	4M	CO1	L2
UNIT-II				
3.	Explain the ways and means for collecting the software requirements and how are they organized and represented	14M	CO2	L2
OR				
4.	a) Explain briefly about requirements validation.	10M	CO2	L2
	b) Write short note on requirement management process.	4M	CO2	L1
UNIT-III				
5.	a) Write short note on structured design methodologies	10M	CO3	L1
	b) Write short note on modular design.	4M	CO3	L1
OR				
6.	a) Explain about conducting component level design.	10M	CO3	L2
	b) Discuss about Architectural Styles.	4M	CO3	L1
UNIT-IV				
7.	What are the various testing strategies to software testing? Discuss them briefly	14M	CO4	L2
OR				
8.	a) Explain about usability testing	10M	CO4	L2
	b) Discuss about testing fundamentals.	4M	CO4	L1
UNIT-V				
9.	a) Discuss the concept of software maintenance process.	10M	CO5	L1
	b) What are the types of reengineering activities	4M	CO5	L2
OR				
10.	a) What is meant by SQA? Discuss in detail SQA activities.	10M	CO5	L2
	b) What are the types of software maintenance	4M	CO5	L2

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Code: 7G151

III B.Tech. I Semester Regular & Supplementary Examinations February 2021

Advanced Java Programming
(Computer Science and Engineering)

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)

Marks

UNIT-I

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|---|----|
| 1. a) Draw and Explain the structure of JavaFX application. | 7M |
| b) Explain Life cycle methods of JavaFX Application. | 7M |

OR

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|--|----|
| 2. a) Write JavaFX program to add TreeView to Scene Graph. | 7M |
| b) What are the Features of JavaFX? Explain the steps how to compile and execute a JavaFX Program? | 7M |

UNIT-II

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|---|-----|
| 3. Discuss about different JavaFX controls
i) CheckBox ii) RadioButton iii) ScrollPane | 14M |
|---|-----|

OR

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|---|----|
| 4. a) Briefly discuss how to create the following JavaFX Controls
i) Menu ii) MenuItem iii) Mnemonics iv) Accelerator | 6M |
| b) Write a JavaFX application for student entry form using appropriate controls: Sid, Sname. Branch and Gender, | 8M |

UNIT-III

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|---|----|
| 5. a) What are the types of JDBC Drivers and describe each | 6M |
| b) How do you connect a database using JDBC driver? Discuss how to perform COMMIT and ROLLBACK a transaction. | 8M |

OR

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|--|-----|
| 6. a) Write short notes on the following:
i) Statement ii) PreparedStatement iii) ResultSet | 10M |
| b) How do you Map JDBC Types to JAVA type. Elaborate with an example. | 4M |

UNIT-IV

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|--|----|
| 7. a) What is a Servlet? Describe life cycle of a Servlet | 6M |
| b) How do you build and deploy a servlet in tomcat server. | 8M |

OR

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|---|----|
| 8. a) Describe the following terms:
i) Cookies ii) Session tracking iii) HTTP GET Request iv) HTTP POST Request | 8M |
| b) How do you access Databases with JDBC using Servlet? | 6M |

UNIT-V

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|--|----|
| 9. a) Draw and Explain life cycle model of JSP and a Servlet write down difference between them. | 7M |
| b) Explain in detail about Scripting Elements and Standard Action Element in JSP? | 7M |

OR

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|---|----|
| 10. a) What is Java Bean? How can you invoke bean properties in JSP | 8M |
| b) Explain in detail about JSP Custom Tag API? | 6M |
