Hall Ticket Number :										

R-17

Code: 7G152

III B.Tech. I Semester Supplementary Examinations June 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

UNIT–I

1. a) What do you mean by ambiguity in Context Free Grammars? Give an example for ambiguous grammar. Show that the grammar in your example is ambiguous? 10M

   b) What are the problems in Top-down Parsing? 4M

OR

2. Construct the Predictive parsing table for the following grammar:

   S→L=R/R ; L→*R/id R→L 14M

UNIT–II

3. a) Draw and explain model of LR parser. 4M

   b) Consider the grammar

   E →E + T | E - T | T, T →T * F |T / F | F, F → (E) | id

   Show the sequence of moves made by shift reduce parser for the input string id1+id2*id3 is accepted or not. 10M

OR

4. a) Differentiate between LR(1), Canonical-LR and LALR parsing methods 6M

   b) Show that the following grammar:

   S→ Aa | bAc | Bc, A→ d, B → d is LR(1) but not LALR(l). 8M

UNIT–III

5. a) What is syntax directed translation? How it is used for translation of expressions? 7M

   b) Distinguish static and dynamic type checking? 7M

OR

6. Below grammar generates binary numbers with a "decimal" point:

   S→ L. L | L, L→ LB | B, B → 0 | 1

   Design an L-attributed SDD to compute S.val, the decimal-number value of an input string. 14M

UNIT–IV

7. a) What are various attributes of symbol table? 5M

   b) Explain about the static storage allocation strategy with example and discuss its limitations? 9M

OR

8. Explain Symbol table organization using Hash tables? With an example show the Symbol table organization for block structured language? 14M

UNIT–V

9. a) Distinguish local and global optimization? 5M

   b) Explain the Code generation algorithm to generate code for the following expression? x=(a-b) + (a+c) 9M

OR

10. a) Explain about Register allocation by Graph colouring in register allocation and assignment 7M

    b) Discuss about various program transformations of peephole optimization 7M

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Hall Ticket Number :										

R-17

Code: 7G153

III B.Tech. I Semester Supplementary Examinations June 2022

Computer Networks

(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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UNIT–I

1. Discuss the purpose of protocol hierarchies in design of network software.

OR

2. What is meant by Wireless Transmission media? What are the various ways of transmission in this media? Explain Microwave Transmission

UNIT–II

3. a) Demonstrate working of sliding window protocols.
   b) Describe CSMA/CD in detail.

OR

4. a) What is framing? Explain bit stuffing and byte stuffing in framing
   b) Explain one-bit sliding window protocol for normal and abnormal cases

UNIT–III

5. a) What is flooding? Describe Bellman-Ford routing algorithm with suitable network scenario example and routing table.
   b) Give comparison between IP4 and IP6 packet headers.

OR

6. a) What is datagram network? Compare and contrast of virtual circuit and datagram networks
   b) Explain briefly about the shortest path routing algorithm

UNIT–IV

7. a) Discuss application of Transport layer in data communication
   b) What are the functions of transport layer? Draw the segment structure of TCP.

OR

8. a) Why do you think that there exist two protocols in transport layer whereas there exists only one in Internet layer in TCP/IP reference model?
   b) Describe the relevance of “two-army problem” to releasing connections between transport layers in peer computers.

UNIT–V

9. a) How does the user get the emails from the ISP’s message transfer agent?
   b) List out the Basic functions of E-mail System. Explain?

OR

10. What elements would you use to demonstrate the MIME type? Explain in detail.

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Hall Ticket Number :										

R-17

Code: 7G356

III B.Tech. I Semester Supplementary Examinations June 2022

Microprocessors and Interfacing

(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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UNIT–I

1. a) Define addressing mode? Explain the addressing modes of 8086 with suitable examples.
   b) Explain at least 7 assembler directives of 8086 with suitable example.

OR

2. Illustrate the pin configuration of 8086.

UNIT–II

3. Explain the architecture of 8255 and also different modes of operation.

OR

4. a) Construct an interface of two 4K X 8 EPROMS and two 4K X 8 RAM chips with 8086. Select suitable memory map.
   b) Design an interface between 8086 CPU and two chips of 16K X 8 EPROM and two chips of 32K X 8 RAM. Select the starting of EPROM suitable. The RAM address must start at 00000H.

UNIT–III

5. Sketch and explain how to Interface 8257 with 8086

OR

6. a) List the differences between Programmed I/O and Interrupt driven I/O.
   b) Discuss the Interrupt structure of 8086 microprocessor.

UNIT–IV

7. Summarize each pin function of RS232

OR

8. Explain different modes of operation of 8253/54.

UNIT–V

9. What do you mean by paging? What are its advantage and disadvantage?

OR

10. Explain real and protected mode of 80386

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Hall Ticket Number :										

R-17

Code: 7G154

III B.Tech. I Semester Supplementary Examinations June 2022

Python Programming

(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

UNIT–I

1. a) List out arithmetic operators in python and Explain 7M
   b) Describe about input and output statements in python 7M

OR

2. a) Differentiate java and python 7M
   b) Demonstrate the ways of executing a python program 7M

UNIT–II

3. a) Discuss about the strings type in python. 7M
   b) Show the possibility of splitting and joining of strings in python. 7M

OR

4. List the functions to process tuples in python and illustrate them with the suitable example. 14M

UNIT–III

5. a) Define constructor and explain 5M
   b) Compare method overloading and method overriding in python 9M

OR

6. Derive method resolution order (MRO) in python. 14M

UNIT–IV

7. a) How to knowing whether a file exists or not 7M
   b) Write a python program to create a regular expression to replace a string with a new string. 7M

OR

8. Explain in detail about working with directories in python. 14M

UNIT–V

9. Write about the different ways of creating Threads in python 14M

OR

10. How to create communication between Threads? Illustrate with the suitable example. 14M

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Hall Ticket Number :										

R-17

Code: 7G151

III B.Tech. I Semester Supplementary Examinations June 2022

Advanced Java Programming

(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

UNIT–I

1. a) What is JavaFX. Explain JavaFX life cycle mehods 7M
   b) List out key components of JavaFX application development. Explain. 7M

OR

2. a) List out and explain constructors and methods from Label class. 7M
   b) Define Layout. Breifly explain different types of layouts used in JavaFX 7M

UNIT–II

3. a) Explain constructors and methods of Image and Image View. 7M
   b) How can you add imges to Label? Explain with an example program? 7M

OR

4. a) How can you add images to Label control and Button control? Explain constructors and methods involved. Demonstrate with an example program. 14M

UNIT–III

5. a) What is JDBC? Explain the steps involved in JDBC connectivity. 7M
   b) Explain 4 different types of JDBC drivers. 7M

OR

6. a) How can you access records from database table into java application? Explain with example program. 8M
   b) Differentiate Statement, Prepared Statement. 6M

UNIT–IV

7. a) Listout and explain methods from ServletRequest and ServletResponse interafaces. 7M
   b) Discuss HttpServlet in detail. 7M

OR

8. a) Define cookie.How can you add cookies and access cookies. Explain cookies session tracking with an example program. 14M
   b)

UNIT–V

9. a) List out JSP scripting elements. Explain with example programs. 14M
   b)

OR

10. a) What is scriptlet and expression tags in JSP? How can you use them in JSP application development? Explain with an example program 10M
    b) Differentiate between servlet and JSP 4M

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