Hall Ticket Number :										

R-17

Code: 7G152

III B.Tech. I Semester Supplementary Examinations March/April 2023

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	BL
		UNIT–I			
1.	a)	Consider the following Recursive grammar: S → Sa | Sb | a |b. Obtain an equivalent grammar with no left recursion?	10M	CO1	L3
	b)	What is interpreter? Write Advantages and Disadvantages of Interpreter	4M	CO1	L1
		OR			
2.	a)	Explain the different phases of the Compiler, showing the output of each phase using an example for the statement z = (a*20) + b – c?	10M	CO1	L2
	b)	What is the difference between a pass and phase of a compiler?	4M	CO1	L3
		UNIT–II			
3.	a)	Design CLR parser for the following grammar. E → E+T, E →T,T →T*F, T →F, F → (E) , F →id	14M	CO3	L6
		OR			
4.	a)	Explain about Dangling Else ambiguity by considering the following grammar. S1 → S S → iSeS | iS | a	7M	CO3	L2
	b)	Explain about Error recovery in parsing by considering the below grammar E →E + E | E * E | (E) | id	7M	C03	L2
		UNIT–III			
5.	a)	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.	7M	CO3	L6
	b)	Write about type inference for polymorphic functions	7M	CO3	L5
		OR			
6.	a)	What is syntax directed translation? How it is used for translation of expressions?	7M	CO3	L3
	b)	Distinguish static and dynamic type checking?	7M	CO3	L5
		UNIT–IV			
7.	a)	What are various attributes of symbol table?	5M	C04	L1
	b)	Explain about the static storage allocation strategy with example and discuss its limitations?	9M	C04	L2
		OR			
8.	a)	Discuss about the data structures used for the Symbol table?	7M	C04	L2
	b)	Illustrate the functions of Heap management?	7M	C04	L4
		UNIT–V			
9.	a)	Describe Natural loops and Inner loops of a flow graph with an example?	7M	CO5	L1
	b)	Discuss how Induction Variables can be detected and how transformation can be applied?	7M	CO5	L2
		OR			
10.	a)	List and explain about object code forms?	7M	CO5	L1
	b)	What are the applications of DAG? Explain how the given expression can be converted into a DAG. (a+b)*(a+b)+(c+d)	7M	CO5	L2

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Code: 7G153

III B.Tech. I Semester Supplementary Examinations March/April 2023

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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			Marks	CO	BL
		UNIT–I			
1.		Distinguish between guided and unguided media. Explain various guided media being in use today	14M	1	L2
		OR			
2.		Explain the characteristics of WAN? Why a WAN is required and what objectives are achieved by having a WAN	14M	1	L2
		UNIT–II			
3.	a)	What are services provided by the data link layer to its upper layer in the OSI protocol stack?	6M	2	L2
	b)	Hamming code is used for 16 bit message transmission. How many check bits are needed to ensure that the receiver can detect and correct single bit errors? Show the bit pattern transmitted in the message 1101001100110101.	8M	2	L3
		OR			
4.	a)	Describe the principles of Go-Back-n ARQ protocol.	8M	2	L3
	b)	What is 'collision'? Explain the method of avoiding collisions	6M	2	L2
		UNIT–III			
5.	a)	Define fragmentation and explain why the IP4 and IP6 protocols need to fragment some packets.	7M	3	L2
	b)	What is need of Congestion Control Algorithms in data communication?	7M	3	L2
		OR			
6.	a)	State the Design Issues of Network layer	7M	3	L2
	b)	Give Outline of an IP address? Discuss the class field in IP address.	7M	3	L2
		UNIT–IV			
7.		Explain the steps to establish and release TCP connection management using finite state transition diagram	14M	4	L2
		OR			
8.	a)	Why is UDP faster than TCP? Differentiate between UDP and TCP	7M	4	L3
	b)	Justify the performance issues in transport layer protocols.	7M	4	L3
		UNIT–V			
9.	a)	Summarize the resource record types specified in DNS.	7M	5	L2
	b)	Explain how the actual computer systems are identified using DNS.	7M	5	L2
		OR			
10.	a)	Summarize how SMTP transfers message from one host to another host with suitable illustration.	7M	5	L5
	b)	Compare and contrast between the POP3 and IMAP protocols.	7M	5	L3

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Code: 7G356

III B.Tech. I Semester Supplementary Examinations March/April 2023

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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			Marks	CO	BL
		UNIT–I			
1.		Draw the architecture of 8086 microprocessor and explain the function of each unit in detail.	14M	CO1	2
		OR			
2.	a)	The physical branch address is 5A230 H when CS = 5200 H. Calculate the physical address if CS is changed to 7800 H.	7M	CO1	3
	b)	Explain the ASSEMBLY directives with examples.	7M	CO1	2
		UNIT–II			
3.		With necessary diagrams explain the A/D converter in detail.	14M	CO2	2
		OR			
4.		Interface a stepper motor to 8086 microprocessor and write an assembly language program (ALP) to rotate 100 teeth, 4-phase stepper motor five rotations clockwise and five rotations anticlockwise.	14M	CO2	5
		UNIT–III			
5.		Develop the structure of cascading interrupt connection using 8259.	14M	CO3	6
		OR			
6.		Sketch and explain how to Interface 8257 with 8086	14M	CO3	2
		UNIT–IV			
7.	a)	Describe asynchronous data transfer schemes with suitable examples.	7M	CO2	1
	b)	Give the structure how to connect the devices using RS232	7M	CO2	3
		OR			
8.	a)	Explain RS-232C Serial Data Standard and 20ma Current loop	7M	CO2	2
	b)	Draw and Explain TTL to RS232 & RS232 to TTL conversion circuits	7M	CO2	2
		UNIT–V			
9.		Explain segmentation in 80386	14M	CO4	2
		OR			
10.		Explain Real and Virtual mode in 80286? Also explain the mapping of virtual memory with physical memory and also tell the phenomenon of using page table in microprocessor? Draw and discuss the register organization of 80386?	14M	CO4	2

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Code: 7G155

III B.Tech. I Semester Supplementary Examinations March/April 2023

Software Engineering

(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) Define Software Engineering? Explain about the importance of Software Engineering? 7M
   b) Discuss about the nature of Software? 7M

OR

2. a) Explain about the Waterfall model? 7M
   b) What are the elements of a software Process? 7M

UNIT–II

3. a) Write short notes on Negotiating requirements? 7M
   b) Discuss about the Class-Based Modeling? 7M

OR

4. What information is produced as a consequence of requirements gathering? 14M

UNIT–III

5. a) What is meant by software Architecture? Why it is important? 7M
   b) Write short notes on Cohesion? 7M

OR

6. a) Explain about the Architectural genres for Software-based Systems? 7M
   b) How do systems interoperate with one another? 7M

UNIT–IV

7. a) Explain about the Interface Analysis and Design models 7M
   b) Write Short notes on Alpha Testing? 7M

OR

8. Draw the Swim lane diagram for prescription refill function? 14M

UNIT–V

9. a) What is meant by Risk? How we can manage it? 7M
   b) Write short notes on Reverse Engineering? 7M

OR

10. a) What are the Responsibilities of a software project manager? 7M
    b) Explain about the various project estimation techniques? 7M

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Code: 7G151

III B.Tech. I Semester Supplementary Examinations March/April 2023

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	CO	BL
		UNIT–I			
1.	a)	Explain JavaFx application skeleton with an example program.	14M	1	2
		OR			
2.	a)	Describe Button class and its event handling in JavaFX programming with suitable example program.	10M	1	3
	b)	Differentiate among Stage, Scene and Node objects.	4M	1	4
		UNIT–II			
3.	a)	Explain constructors and methods of Image and ImageView.	7M	2	2
	b)	How can you add imges to Label? Explain with an example program?	7M	2	2
		OR			
4.	a)	Write a JavaFX program to demonstrate RadioButton control.	7M	2	3
	b)	Write a JavaFX program to demonstrate ListView control.	7M	2	3
		UNIT–III			
5.	a)	Write a JDBC application to insert rows into a database table.	7M	3	3
	b)	Write a JDBC application to update rows into database table.	7M	3	3
		OR			
6.		Discuss the following i) Statement interface ii) PreparedStatement interface iii) Connection interface	14M	3	2
		UNIT–IV			
7.	a)	What is servlet? Explain interfaces from javax.servlet and javax.servlet.http packages.	7M	4	1
	b)	Explain GenericServlet in detail.	7M	4	1
		OR			
8.	a)	Explain servlet life cycle.	7M	4	2
	b)	Explain cookies session tracking.	7M	4	2
		UNIT–V			
9.	a)	What is JSP? How JSP application works?	7M	5	1
	b)	Explain JSP scripting elements with syntax.	7M	5	2
		OR			
10.		What is java bean? Develop a java bean and explain how it is called from a jsp page. Demonstrate with an example program.	14M	5	2

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