R-15

Code: 5G356

III B.Tech. I Semester Supplementary Examinations November 2019

Microprocessors and Interfacing

(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours

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

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UNIT–I

1. a) Explain the concept of segmented memory. What are the advantages?   7M
    b) Write an 8086 ALP to find sum of numbers in the array of 10 elements?   7M

OR

2. a) Draw and explain the read and write cycle timing diagrams of 8086 in maximum mode.   7M
    b) Explain at least 7 assembler directives of 8086 with suitable example.   7M

UNIT–II

3. a) Describe the interfacing of D/A convertor with a neat sketch.   7M
    b) Demonstrate the mode-2 operation used in 8255 PPI in detail   7M

OR

4. a) Describe architecture of 8255 PPI with neat diagram   7M
    b) Differentiate I/O interfacing methods in 8086 microprocessor.   7M

UNIT–III

5. a) Explain hardware and software interrupts in 8086. Demonstrate the interrupt vector table of 8086.   7M
    b) What is the need of DMA? Draw the internal structure of 8257 DMA and explain its operation.   7M

OR

6. a) With neat sketches explain the architecture of 8259A PIC   7M
    b) Explain the various data transfer schemes. Specify the relative merits and demerits of each schemes.   7M

UNIT–IV

7. a) Describe mode instruction control word format in asynchronous and synchronous mode transmission and reception using 8251A   7M
    b) Explain various operating modes of 8253 PIT with suitable diagram.   7M

OR

8. a) Draw the architecture and list out the signal description of 8251A   7M
    b) List out the synchronous and asynchronous data transfer schemes.   7M

UNIT–V

9. a) Discuss the register organisation of 80286   7M
    b) What is paging? Draw the block diagrammatic representation of complete 80386 paging mechanism.   7M

OR

10.   Illustrate the salient features of Pentium and Pentium pro processor.   14M

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III B.Tech. I Semester Supplementary Examinations November 2019
Operating Systems
(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)

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UNIT–I

1. a) Distinguish the following CPU scheduling algorithms
       i) FCFS   ii) SJF   iii) Round Robin   iv) Priority   7M

   b) Elaborate thread issues in detail.   7M

OR

2. a) Describe in detail about operating systems structures   8M

   b) What is process? Draw and explain process states.   6M

UNIT–II

3. a) Define critical section. Explain the Critical Section Problem   7M

   b) Illustrate the Critical Section Problem   7M

OR

4. a) Explain about the reads-writers problem   7M

   b) Discuss about Deadlock detection algorithm   7M

UNIT–III

5. a) What is swapping? Explain about paging.   7M

   b) Explain about contiguous memory allocation   7M

OR

6. Write about the importance of demand paging.   14M

UNIT–IV

7. Draw and explain the following disk scheduling if head starts at 53 for the following values 98, 183, 37, 122, 14, 124, 65, 67
       i) SSTF   ii) SCAN   iii) C-SCAN   14M

OR

8. Write about the RAID levels in detail   14M

UNIT–V

9. a) How language based protection helps?   7M

   b) Discuss about Denial of Service.   7M

OR

10. a) Compare symmetric Encryption and Asymmetric Encryption   7M

    b) List user authentications and explain   7M

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III B.Tech. I Semester Supplementary Examinations November 2019
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)
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UNIT–I

1. a) Define: 8M
    i. Software   ii. Software Engineering
    iii. Software Processes   iv. Software Process Model

    b) List and describe the characteristics of a good software   6M

OR

2. a) Explain incremental process model. Justify that it is appropriate for business
        software but less appropriate for real time systems.   7M

    b) Explain all phases of the Software Development Life Cycle.   7M

UNIT–II

3. a) Explain the requirement management phase of the requirement engineering.   7M

    b) What are different activities involved in requirement engineering. What does
        "win-win" mean in the context of negotiation during the requirement engineering
        activity? Explain with an example.   7M

OR

4. a) Draw an activity diagram for an online shopping platform where online customer
        can browse, or search items, view specific item, add it to shopping cart, view and
        update shopping cart, do checkout. User can view shopping cart at any time.   7M

    b) What are the activities concerned with analysis modelling? Is it possible to
        develop an effective analysis model without developing all four elements of
        analysis model? Explain.   7M

UNIT–III

5. a) Draw and explain about design model in brief   7M

    b) Explain the different categories of architecture styles along with the examples. 7M

OR

6. a) How are the concepts of coupling and software portability related? Provide
        examples to support your discussion   7M

    b) Explain "An Architecture Trade-Off Analysis Method".   7M

UNIT–IV

7. a) Perform a detailed task analysis for a banking system. Use either an
        elaborative or object-oriented approach.   7M

    b) Discus about interface design steps.   7M

OR

8. a) Perform a detailed task analysis for an internet-based polling booth system.
        Use either an elaborative or object-oriented approach.   7M

    b) Discuss about various design principles.   7M

UNIT–V

9. a) What is project planning? What are the key elements to consider for effective
        project planning?   7M

    b) Define the meaning of quality assurance. Explain the role of testing in Quality
        assurance.   7M

OR

10. a) What are the different activities involved in software maintenance.   7M

    b) Define the meaning of software quality and detail the factors which affects the
        quality not productivity of a software product?   7M

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R-15

Code: 5G155

III B.Tech. I Semester Supplementary Examinations November 2019
Web Technologies
(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)
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UNIT–I

1.	a)	Describe different methods for implementing cascading style sheets?	6M
	b)	Design a web page for displaying the grocery items in a table for a grocery shop	5M
	c)	What types of lists can be created in HTML?	3M

OR

2.	a)	Explain any three objects in Java Script and outline *for* loop structure in Java Script with an example	7M
	b)	How to handle events in Java Script? If a=10 and b=20 write a Java Script to swapping of these two numbers.	7M

UNIT–II

3.		Explain the various types of XML schema data types and their applications	14M

OR

4.	a)	Develop a JDBC program to retrieve data from the Data Base using the steps involve in the JDBC Program	7M
	b)	What is Document Object Model (DOM)? Explain the DOM levels.	7M

UNIT–III

5.	a)	Difference between Statement and Prepared Statement?	7M
	b)	Explain about database drivers.	7M

OR

6.	a)	Explain about javax.sql package.	9M
	b)	Discuss about database Metadata with suitable example	5M

UNIT–IV

7.	a)	Describe the problems associated with Servlets and how to overcome the problems.	7M
	b)	Explain in detail about handling HTTPRequest and HTTPResponse with examples	7M

OR

8.	a)	Generate a session tracker that tracks the number of accesses and last access data of a particular web page.	7M
	b)	Briefly explain about Tomcat Server	7M

UNIT–V

9.	a)	How do you generate data dynamically using JSP? Explain	9M
	b)	Describe JSP processing.	5M

OR

10.	a)	How to access a database from a JSP page? Explain with a program.	9M
	b)	Describe how data is shared between JSP pages	5M

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III B.Tech. I Semester Supplementary Examinations November 2019

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)

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UNIT–I

1. a) Explain the role of lexical analyzer and their issues   7M

   b) Explain the general format of LEX Program with an example.   7M

OR

2. a) Explain the procedure for eliminating ambiguity and eliminating left recursion from a grammar. Give an example.   7M

   b) For the grammar E $\rightarrow$ E + E / E * E / id

   Obtain left most and right most derivation for the string id + id * id   7M

UNIT–II

3. a) Consider the grammar

   E $\rightarrow$ E + T | E - T | T,

   T $\rightarrow$ T * F |T / F | F,

   F $\rightarrow$ (E) | id

   Show the sequence of moves made by shift reduce parser for the input string id1+id2*id3 is accepted or not.   9M

   b) Explain ways to determine precedence relations between pair of terminals   5M

OR

4. a) Write a short note on error recovery with LR parsers. How it is different from LL parsers?   7M

   b) Present the algorithm for LALR parsing table construction   7M

UNIT–III

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

   S $\rightarrow$ L . L | L,

   L $\rightarrow$ LB | B,

   B $\rightarrow$ 0 | 1

   Design an L-attributed SDD to compute S.val, the decimal-number value of an input string.   7M

   b) Explain the procedure for translation scheme to convert infix to postfix   7M

OR

6. a) Write about type inference for polymorphic functions   7M

   b) Explain the details about the specification of a simple type checker   7M

UNIT–IV

7. a) Construct a Quadruple, Triple and Indirect Triple for the statement

   a+a*(b-c) +(b-c)*d   7M

   b) What are the different storage allocation strategies? Explain   7M

OR

8. a) What are the principles associated with designing calling sequences and the layout of activation records?   7M

   b) Explain the process of accessing non local variables information from symbol table in case of nested procedures   7M

UNIT–V

9. a) Discuss the design issues of Code Generator.   7M

   b) Explain in detail about global common sub expression elimination technique.   7M

OR

10. a) With suitable examples, explain about live-variable analysis.   7M

    b) Discuss about copy propagation and dead code elimination.   7M

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III B.Tech. I Semester Supplementary Examinations November 2019
Computer Networks
(Common to CSE & IT)

Max. Marks: 70   Time: 3 Hours

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

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UNIT–I

1. a) Discuss wireless transmission with its advantages and disadvantages.   7M

  b) Compare FDM and TDM.   7M

OR

2. a) Explain in detail about Network Hardware. How network hardware support the 10M communication of two systems.   7M

  b) Describe the Transmission Media. What are the types of Transmission Media?   7M

UNIT–II

3. a) Explain the following error detection techniques

   i) Checksum   ii) Hamming Code   7M

  b) If transmission delay and propagation delay in a sliding window protocol are 1 msec and 49.5 msec respectively, then-

   i. What should be the sender window size to get the maximum efficiency?

   ii. What is the minimum number of bits required in the sequence number field?

   iii. If only 6 bits are reserved for sequence numbers, then what will be the efficiency?   7M

OR

4. a) Discuss Framing Techniques in brief.   7M

  b) List and explain different multiple access protocols in brief.   7M

UNIT–III

5. a) Explain the function of Link state routing protocol with an example.   6M

  b) What are the three main functions of network layer? What is routing? Explain shortest path routing in brief.   8M

OR

6. a) Elaborate on multicast routing protocol.   6M

  b) What is Congestion Control? What are the causes of congestion control? Explain token bucket algorithm in brief.   8M

UNIT–IV

7. a) Explain how TCP manages a byte stream.   7M

  b) Define UDP and discuss the different fields format of a used datagram. List out the uses of UDP protocol.   7M

OR

8. a) What are the elements of Transport layer? Discuss each in brief.   7M

  b) Explain congestion avoidance mechanism using random early detection in transport layer with an example.   7M

UNIT–V

9. a) In DNS, can a single host have (i) multiple host names and (ii) Multiple addresses? How the records are organized in such cases?   7M

  b) What is email privacy? Discuss the email security package PGP with its operation.   7M

OR

10. a) Explain the major DNS resource record types and their meaning.   7M

  b) Explain authoritative and non-authoritative DNS.   7M

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