Hall Ticket Number :										

R-15

Code: 5G152

III B.Tech. I Semester Supplementary Examinations May 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) Explain about the OSI Reference Model and its importance over the TCP/IP Reference Model. 9M

   b) Ten signals, each requiring 4000 Hz, are multiplexed onto a single channels using FDM. What is the minimum bandwidth required for the multiplexed channel? Assume that the guard bands are 400 Hz wide. 5M

OR

2. a) Make a list of activities that you do every day in which computer networks are used. How would your life be altered if these networks were suddenly switched off? 7M

   b) Draw and explain the structure of the telephone system. 7M

UNIT–II

3. a) What is the maximum overhead in byte stuffing algorithm? Explain 7M

   b) A 100 byte IP packet is transmitted over a local loop using ADSL protocol stack. How many ATM cells will be transmitted? Briefly describe their contents. 7M

OR

4. a) Data link protocols almost always put the CRC in trailer rather than in a header. Why? 9M

   b) Sketch the Manchester encoding on a classic Ethernet for the bit stream 0001110101. 5M

UNIT–III

5. a) Explain the building and distribution of link state packets in link state routing algorithm. 7M

   b) Are there any circumstances when connection oriented service will deliver packets out of order? Explain 7M

OR

6. a) How Congestion control is different from Flow Control? Explain 7M

   b) Explain about Distance vector routing algorithms. 7M

UNIT–IV

7. Draw the format of UDP header. The following is a dump of a UDP header in hexadecimal format. 14M

CB84000D001C001C

a) What is the source port number?

b) What is the destination port number?

c) What is the total length of the user datagram?

d) What is the length of the data?

e) Is the packet directed from a client to a server or vice versa?

OR

8. a) Why does UDP exist? Would it now have been enough to just let user processes send raw IP packets? 7M

b) Explain the differences in using the sliding window protocol at the link layer and at the transport layer in terms of protocol timeouts. 7M

UNIT–V

9. a) Draw and explain the figure that shows the purpose of DNS. 7M

b) When are external viewers needed? How does a browser know which one to use? Explain 7M

OR

10. a) Can a machine with a single DNS name have multiple IP address? How could this occur? Explain 7M

b) Write an XML page for university registrar listing multiple students, each having a name, an address and a GPA. 7M

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Hall Ticket Number :										

R-15

Code: 5G356

III B.Tech. I Semester Supplementary Examinations May 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)	List different flags and give the importance of each.	7M
	b)	How the memory is organized and accessed different segments in 8086	7M

OR

2.	a)	What is addressing mode list 5 different addressing modes in 8086	7M
	b)	Compare two different string of length 100 bytes are same or not using string instruction	7M

UNIT–II

3.	a)	Differentiate I/O mapped and Memory mapped I/O	4M
	b)	Display digits 0 to 8 by Interfacing seven segment display to 8086	10M

OR

4.	a)	Interface stepper motor and rotate in clockwise continuously.	7M
	b)	Give the importance of BSR mode	7M

UNIT–III

5.	a)	What is the importance of interrupt	4M
	b)	Discuss the interrupt structure of 8086	10M

OR

6.		Draw the architecture of 8257 and give the function of each block	14M

UNIT–IV

7.	a)	Distinguish synchronous and asynchronous data transfer	4M
	b)	Determine different configuration registers in 8251	10M

OR

8.	a)	Why RS232 to TTL conversion is required	4M
	b)	Explain architecture of 8253	10M

UNIT–V

9.	a)	Compare real and protected mode	7M
	b)	Elaborate the architectural features of 80286	7M

OR

10.	a)	List the salient feature of Pentium pro processor	7M
	b)	Summarize the architectural features of Pentium.	7M

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Hall Ticket Number :										

R-15

Code: 5G153

III B.Tech. I Semester Supplementary Examinations May 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) What are the major activities of an Operating System related to memory management? 7M

   b) Define producer-consumer problem. Explain the solution of producer-consumer problem using shared memory. 7M

OR

2. a) What are the advantages and disadvantages of using layered approach to system design? 7M

   b) Describe the methods for passing parameters to the Operating System. 7M

UNIT–II

3. a) Explain Multi-threaded models. 7M

   b) Let the five given processes whose arrival time is zero as per the given order and length of the CPU burst time in milliseconds.

Process	Burst Time
P_1	15
P_2	8
P_3	10
P_4	5
P_5	12

   Calculate the average waiting time of RR scheduling algorithm by taking the quantum value is 8 milliseconds. 7M

OR

4. a) Describe the criteria's used to compare CPU scheduling algorithms. 7M

   b) Explain Readers-Writers problem. 7M

UNIT–III

5. a) Consider the following snapshot of the system.

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P_0	2	1	1	2	2	1	1	2	2	5	2	1
P_1	1	0	0	0	1	7	5	0				
P_2	2	4	5	4	3	4	5	6				
P_3	1	6	4	2	1	6	6	2				
P_4	1	1	1	4	1	7	5	5				

   Answers the following questions using the Bankers algorithm.

   i) Is the system in a safe state? If it is find the sequence that satisfies safety requirement.

   ii) If a request from a process P_1 arrives (0 2 1 0) can the request be granted immediately? Give detail explanation. 8M

   b) Explain recovery from deadlock. 6M

OR

6.	a)	Explain paging model of logical and physical memory.	7M
	b)	Explain Segmentation with an example.	7M

UNIT–IV

7.	a)	Explain file system mounting.	7M
	b)	Explain RAID structure.	7M

OR

8.	a)	Explain free space management.	6M
	b)	Explain any two disk scheduling algorithms	8M

UNIT–V

9.	a)	Explain goals and principles of protection.	8M
	b)	Explain Revocation of access rights.	6M

OR

10.	a)	Explain firewall design principles.	6M
	b)	Explain the Cryptographic model with a neat diagram.	8M

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Hall Ticket Number :										

R-15

Code: 5G154

III B.Tech. I Semester Supplementary Examinations May 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) Write and explain about categories of Computer Software with examples?
   b) Why Software Myths? Write and explain about Management Myths, Customer Myths and Practioners Myths.

OR

2. What are the different types of prescriptive process models? Explain.

UNIT–II

3. a) Examine the Requirement elicitation and Requirement elaboration tasks in brief.
   b) Classify Verification and Validation with examples?

OR

4. a) Discuss Data Modeling Concepts with examples.
   b) How to make stakeholders to understand the requirements model?

UNIT–III

5. a) What are the characteristics of a Good Design?
   b) Write and explain about Quality Attributes?

OR

6. a) Explain any four Web app Design principles
   b) With examples explain Data Design elements and Architectural Design elements?

UNIT–IV

7. a) List and explain about the golden rules of User Interface Design?
   b) Explain about Debugging process. Why is Debugging so difficult?

OR

8. a) Differentiate between Black- box and White- box Testing strategies?
   b) How Regression and Stress Tests are performed?

UNIT–V

9. Explain in detail about Project Estimation Techniques.

OR

10. a) Write a note on the ISO 9000 Quality Standards?
    b) Compare and contrast ‘known risks’ and ‘predictable risks’

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Hall Ticket Number :										

R-15

Code: 5G155

III B.Tech. I Semester Supplementary Examinations May 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 ordered list and unordered list tags. 7M
   b) List out Java Script Objects. Explain any three Objects. 7M

OR

2. Write HTML page(s) to implement forms and frames. 14M

UNIT–II

3. a) Write a java script program to find factorial of a given number. 7M
   b) Describe External Document Type Definition with example. 7M

OR

4. a) Discuss in detail about DOM. 8M
   b) What are XML schemas? 6M

UNIT–III

5. What is driver manager? Explain how driver establishes a connection and create & execute SQL statements. 14M

OR

6. a) Discuss java.servlet Package with suitable example. 7M
   b) How to set the environment to connect servlet with database? 7M

UNIT–IV

7. a) Distinguish between doGet () and doPost () methods in Servlets. 7M
   b) Illustrate the connection establishment of Database into servlets with suitable example. 7M

OR

8. a) Explain how HTTP request & responses can be handled. 7M
   b) Discuss database access using servlets. 7M

UNIT–V

9. a) Discuss about sharing session and application data in JSP. 7M
   b) Explain database access with JSP. 7M

OR

10. How we can display values using an Expression to set an attribute? Explain. 14M

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Hall Ticket Number :										

R-15

Code: 5G151

III B.Tech. I Semester Supplementary Examinations May 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) What is a compiler? State various phases of a compiler and explain them in detail with suitable example. 10M

   b) Give the reasons for separating Lexical analysis and Syntax analysis into two Phases. 4M

OR

2. a) Explain the input buffer scheme for scanning the source program. How the use of sentinels can improve its performance? 8M

   b) Briefly discuss about LEX Tool and explain how LEX program performs lexical analysis for the following patterns in 'C': identifier, comments, arithmetic operators. 6M

UNIT–II

3. a) Write procedure for constructing predictive parsing table with suitable example. 10M

   b) Explain error recovery strategy in predictive parsing. 4M

OR

4. a) Check whether the following grammar is LL(1) or not.

   S→A#
   A →Bb **/** Cd
   B→aB
   C→cC **/** ε 10M

   b) Distinguish RDP and Predictive Parser. 4M

UNIT–III

5. a) Construct SLR parsing table for the grammar

   E→E+T / T
   T→T*F / F
   F→(E) / id

   Verify whether the input string id+id*id is accepted by the grammar or not. Show details of shift and reduce operations. 10M

   b) Write the various steps involved in generating parser using YACC. 4M

OR

6. a) List LR(0) items for given grammar

   S→id(P)
   P→id
   E→id(E) **/** id 6M

   b) What is the difference between LR(0) items and LR(1) items? Explain when we use these items. 2M

   c) Explain about syntax directed translation. Write SDT for evaluation of expression using L-attributed grammar. 6M

UNIT–IV

7. a) Generate the three address code for
```
while(i<10)
{x:=0;
 i:=i+1;
}
```
6M

b) Explain Heap storage allocation strategy in detail. 8M

OR

8. a) Why do we need intermediate code? What are the types of intermediate code? 6M

b) Explain activation tree and draw activation tree for any sorting method. 8M

UNIT–V

9. a) List the data flow equations for reaching definitions for Structured program. 4M

b) Discuss about redundant sub expression elimination, frequency reduction and constant folding. 3M

c) Explain Code generation algorithm with the function GETREG. 7M

OR

10. a) Construct a DAG and write the sequences of instructions for the expression a+ a*(b-c) + (b-c) *d. 5M

b) Explain loop optimization techniques with suitable examples? 5M

c) Show various steps in the Code generation algorithm of the expression (a+b) / (c+d) assuming two machine registers to be available. 4M

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