

Hall Ticket Number :										
----------------------	--	--	--	--	--	--	--	--	--	--

R-15

Code: 5G152

III B.Tech. I Semester Supplementary Examinations October 2020

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)

UNIT-I

- | | |
|--|-----|
| 1. a) Illustrate the functionality of various layers present in OSI model with a neat sketch. | 10M |
| b) List any two reasons for layered protocols and what is one possible disadvantage for Layered protocols? | 4M |

OR

- | | |
|--|----|
| 2. a) Briefly explain the following
i). Twisted pair cable. ii). Co-Axial cable iii). Fiber optic cable | 8M |
| b) Explain the Structure of Telephone networks. | 6M |

UNIT-II

- | | |
|--|----|
| 3. a) Write short notes on different Framing methods in Data Link Layer. | 8M |
| b) Explain about Stop and Wait protocol. | 6M |

OR

- | | |
|---|----|
| 4. a) Discuss about the Wireless LAN MAC protocols. | 8M |
| b) Draw and Explain IEEE 802.11 data frame format. | 6M |

UNIT-III

- | | |
|---|----|
| 5. a) Describe the major differences between the ECN method and the RED method of congestive avoidance. | 5M |
| b) Explain in detail about the Link State Routing Algorithm with an example | 9M |

OR

- | | |
|--|----|
| 6. a) What is a Routing protocol? List and explain the principles of routing | 9M |
| b) Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation. | 5M |

UNIT-IV

- | | |
|---|-----|
| 7. Explain the following transport layer protocols.
a) Simple protocol b) Stop and wait protocol
c) Go-Back-N protocol d) Selective Repeat Protocol | 14M |
|---|-----|

OR

- | | |
|---|----|
| 8. a) Draw TCP header format. Write the significance of the components in TCP header format | 9M |
| b) Discuss the advantages and disadvantages of Delay Tolerant Networks | 5M |

UNIT-V

- | | |
|---|-----|
| 9. Explain about Domain Name System and its advantages. | 14M |
|---|-----|

OR

- | | |
|---|----|
| 10. a) Write short notes on Real time conferencing. | 7M |
| b) Write short notes on Content Delivery Networks. | 7M |

Hall Ticket Number :

--	--	--	--	--	--	--	--	--	--

R-15

Code: 5G356

III B.Tech. I Semester Supplementary Examinations October 2020

Micro Processors 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)

UNIT-I

1. a) Discuss the functions of BIU & EU in 8086. 9M
- b) List out features of 8086 microprocessor. 5M

OR

2. a) Describe the flag register of 8086. 7M
- b) Discuss how physical address is generated in 8086? 7M

UNIT-II

3. a) Draw the basic structure of SRAM and DRAM cells 5M
- b) Construct an interface of two 4K X 8 EPROMS & two 4K X 8 RAM chips with 8086. Select suitable memory map. 9M

OR

4. a) Explain the interfacing diagram of ADC with 8255. 7M
- b) Explain how a stepper motor is interfaced to 8086. 7M

UNIT-III

5. a) Draw the architecture of 8257. Explain about it. 7M
- b) What are the differences between Programmed I/O and Interrupt driven I/O. 7M

OR

6. a) Explain the interrupt response of 8259. 7M
- b) Draw the interrupt vector table. 7M

UNIT-IV

7. a) Name serial communication standards and draw TTL to RS232 and RS232 to TTL conversion. 7M
- b) Explain 8251 USART architecture. 7M

OR

8. a) Explain different modes of operation of 8253/54. 7M
- b) Differentiate between Asynchronous and Synchronous data transfer schemes. 7M

UNIT-V

9. a) What are the difference between logical address, linear address and physical address? 8M
 - b) Explain the salient features of 80386. 6M
- OR**
10. a) Explain descriptor tables of 80286 and 80386 processor 7M
 - b) What do you mean by paging? What are its advantage and disadvantage? 7M

Code: 5G153

III B.Tech. I Semester Supplementary Examinations October 2020

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)

UNIT-I

1. a) Define Operating System? Explain the basic functions of Operating System. 7M
- b) With a neat diagram explain the states of a Process. 7M

OR

2. a) What is a System Calls? Mention the different types of System Calls? 7M
- b) Discuss the need of CPU Scheduling Algorithm and explain any one of the CPU Scheduling Algorithm with an example. 7M

UNIT-II

3. a) Explain the Benefits of Multithreaded Programming. 4M
- b) Why Process Synchronization is required in Operating System? Explain the requirements for critical section problem. 10M

OR

4. a) Write Short notes on
 - i) Processor Affinity
 - ii) Load Balancing 7M
- b) How Semaphores is going to solve the problem of synchronization. 7M

UNIT-III

5. a) What is safe state? Describe how a safe state ensures deadlock avoidance. 7M
- b) Explain paging memory management technique with example. Mention merits and demerits. 7M

OR

6. a) Explore the mechanism of demand paging? 7M
- b) Explain page replacement algorithms with an example. 7M

UNIT-IV

7. a) Identify the different types of File Access Methods. 7M
- b) Elaborate and discuss about the RAID Structure. 7M

OR

8. Classify the different types of Allocation Methods. 14M

UNIT-V

9. Explain how I/O requests are transformed to hardware operations 14M

OR

10. a) What are the goals and principles of protection, 7M
- b) Briefly write about program threats and system threats. 7M

Hall Ticket Number :										
----------------------	--	--	--	--	--	--	--	--	--	--

R-15

Code: 5G154

III B.Tech. I Semester Supplementary Examinations October 2020

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)

UNIT-I

- | | | |
|----|---|-----|
| 1. | a) Define Software Engineering. Describe software engineering layered technology. | 7M |
| | b) Discuss in detail about Software Myths. | 7M |
| | OR | |
| 2. | What are the different types of prescriptive process models? Explain. | 14M |

UNIT-II

- | | | |
|----|--|----|
| 3. | a) Explain the Negotiation requirement and Validation requirements in brief. | 7M |
| | b) Discuss Class-Based Modeling and Data Modeling in brief. | 7M |
| | OR | |
| 4. | a) How to make stakeholders to understand the requirements model? | 7M |
| | b) What are the elements of requirements model? | 7M |

UNIT-III

- | | | |
|----|---|-----|
| 5. | Explain the Major element of the Design Model | 14M |
| | OR | |
| 6. | a) Explain any four Webapp design principles. | 7M |
| | b) Discuss Component-Level Design in brief. | 7M |

UNIT-IV

- | | | |
|----|--|-----|
| 7. | Differentiate between
a. Black box & White box testing
b. Integration testing & System testing | 14M |
| | OR | |
| 8. | What is basis path testing? What is cyclomatic complexity? How is it determined for a flow graph? Illustrate with an example | 14M |

UNIT-V

- | | | |
|-----|--|-----|
| 9. | Explain in detail about Project Estimation Techniques. | 14M |
| | OR | |
| 10. | a) What is Software Reliability? Discuss about process to measure the Reliability of Software. | 7M |
| | b) Explain software process model for Reverse Engineering. | 7M |

Hall Ticket Number :

--	--	--	--	--	--	--	--	--	--

R-15

Code: 5G155

III B.Tech. I Semester Supplementary Examinations October 2020

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)

UNIT-I

1. a) Explain frame Attributes with suitable example. 7M
- b) Explain image tag in HTML with properties. 7M

OR

2. a) Describe ordered list and unordered list tags 7M
- b) Explain Cascading style sheets with examples. 7M

UNIT-II

3. a) Explain XML Schema Architecture? 7M
- b) Describe External Document Type Definition with example? 7M

OR

4. a) Explain DOM and SAX Processors. 7M
- b) Discuss XML database creation and retrieval. 7M

UNIT-III

5. a) Develop a JDBC program to retrieve data from the Data Base using the steps involve in the JDBC Program 7M
- b) Difference between Statement and Prepared Statement? 7M

OR

6. a) Discuss javax.sql.* Package with suitable example? 7M
- b) Elaborate the Scrollable and Updatable Result Set 7M

UNIT-IV

7. a) Describe the lifecycle of servlet 7M
- b) Distinguish between doGet () and doPost () methods in Servlets? 7M

OR

8. a) Using cookies, discuss session tracking 7M
- b) Explain about handling HTTP request & response. 7M

UNIT-V

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

OR

10. List out the important elements used in Constructing JSP Page use at least one element with suitable program 14M

Hall Ticket Number :									
----------------------	--	--	--	--	--	--	--	--	--

R-15

Code: 5G151

III B.Tech. I Semester Supplementary Examinations October 2020

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)

UNIT-I

1. a) Write in brief about Chomsky hierarchy of languages and recognizers. 7M
b) Construct a DFA for the recognizing the language of all strings over the alphabet {0, 1} and contain the substring 10. Show the acceptance of the string 001011. 7M

OR

2. a) Design a DFA that accepts the language over the alphabet, $\Sigma = \{0, 1, 2\}$ where the decimal equivalent of the language is divisible by 3. 8M
b) Write a general format of the LEX program and give an example 6M

UNIT-II

3. a) Give the CFG generating the set of palindromes over an alphabet, $\Sigma = \{a, b\}$. 6M
b) 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 8M

OR

4. a) What are the problems in top down parsing? 4M
b) Construct the predictive parsing table for the following grammar

$S \rightarrow L = R / R ;$
 $L \rightarrow *R / id$
 $R \rightarrow L$

10M

UNIT-III

5. a) Compare Inherited attributes and synthesized attributes with an example? 4M
b) Find the collection of sets of LR(0) items from the given grammar

$S \rightarrow Aa/bAc/Bc/bBa$
 $A \rightarrow d ,$
 $B \rightarrow d$

10M

OR

6. Design CLR parser for the following grammar.

$E \rightarrow E + T,$
 $E \rightarrow T,$
 $T \rightarrow T * F,$
 $T \rightarrow F,$
 $F \rightarrow (E) ,$
 $F \rightarrow id$

14M

UNIT-IV

7. a) What is activation record? Explain the various fields of the activation record? 6M
b) Generate the three address code for the following 'C' Program fragment?

for(i=1;i<=20;i++)
if(a<b)
x=y+z;

8M

OR

8. a) Construct Quadruples, Triples for the of the expressions: $a[i] := b$ and $a := b[i]$ 6M
b) Discuss about the stack allocation strategy with an example? 8M

UNIT-V

9. a) List and explain about object code forms? 6M
b) Explain loop optimization techniques with suitable examples? 8M

OR

10. a) Discuss in brief about register allocation and assignment? 5M
b) Draw the DAG for the arithmetic expression $a + a * (b - c) + (b - c) * d$. Show the steps for constructing the DAG 9M
