

Hall Ticket Number :

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R-19

Code: 19A56GT

III B.Tech. II Semester Supplementary Examinations December 2022

Software Testing Methodologies

(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)

Marks CO Blooms Level

UNIT-I

- | | | | | |
|-----------|--|-----|-----|----|
| 1. | Explain the Dichotomies of Testing. | 14M | CO1 | L2 |
| OR | | | | |
| 2. | a) Compare and contrast functional testing and structural testing. | 7M | CO1 | L2 |
| | b) List the consequences of Bugs. | 7M | CO1 | L1 |

UNIT-II

- | | | | | |
|-----------|---|-----|-----|----|
| 3. | a) Define Path sensitization and Describe Heuristic the procedure used in path sensitization. | 10M | CO2 | L1 |
| | b) List out the applications of path testing. | 4M | CO2 | L1 |
| OR | | | | |
| 4. | What is the need for path instrumentation? Explain the methods for path instrumentation. | 14M | CO2 | L2 |

UNIT-III

- | | | | | |
|-----------|---|-----|-----|----|
| 5. | Demonstrate various Data flow testing strategies in detail. | 14M | CO3 | L3 |
| OR | | | | |
| 6. | a) What is meant by domain testing? Discuss the procedure for domain testing. | 7M | CO3 | L2 |
| | b) Explain Nice and Ugly domains in detail. | 7M | CO3 | L2 |

UNIT-IV

- | | | | | |
|-----------|--|-----|-----|----|
| 7. | a) Illustrate flow anomaly detection. | 7M | CO4 | L3 |
| | b) Explain regular expressions in detail. | 7M | CO4 | L2 |
| OR | | | | |
| 8. | Explain about KV charts and decision tables with suitable examples. List out their applications. | 14M | CO4 | L2 |

UNIT-V

- | | | | | |
|-----------|--|-----|-----|----|
| 9. | Discuss about building tools in detail. | 14M | CO5 | L2 |
| OR | | | | |
| 10. | a) Illustrate good state graphs and bad state graphs with suitable examples. | 7M | CO5 | L4 |
| | b) Discuss about state testing. | 7M | CO5 | L2 |

END

Hall Ticket Number :

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R-19

Code: 19A16HT

III B.Tech. II Semester Supplementary Examinations December 2022

Water Resources and Conservation

(Common to ME & CSE)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

Marks

UNIT-I

1. Write a note on India's water resources, scenario of water use

14M

OR

2. Explain in detail the purposes of water resources development & to write the classification of water resources development projects.

14M

UNIT-II

3. How does evaporation takes place? What are the factors that effects the evaporation process? How are you going to reduce evaporation from a nearby tank?

14M

OR

4. What do you understand by routing of a flood? Write the basic equations in hydrologic reservoir routings. How is hydrologic routing different from hydraulic routing?

14M

UNIT-III

5. What are common problems in project planning?

14M

OR

6. What are the objectives of integrated water resources management? Explain in detailed water conservation methods in urban areas.

14M

UNIT-IV

7. What do you understand thick globally, act locally on water resources with practical example.

14M

OR

8. Explain the need of world water organizations. Explain in brief WWC.

14M

UNIT-V

9. Discuss in brief various methods of surface irrigation. Write a note on sprinkler method of irrigation

14M

OR

10. What do you understand by crop rotation? What are its advantages? Discuss various methods of assessment of irrigation water.

14M

END

Hall Ticket Number :

R-19

Code: 19A461T

III B.Tech. II Semester Supplementary Examinations December 2022

Microprocessor & 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)

	Marks	CO	Blooms Level
UNIT-I			
1. a) Evaluate the register organization of 8086 microprocessor?	8M	1	BT 4
b) Examine the Arithmetic instructions of 8086.	6M	1	BT 4
OR			
2. a) Explain about unconditional branch instructions in 8086?	8M	1	BT 2
b) Write an assembly language program to perform addition of series of numbers.	6M	1	BT 3
UNIT-II			
3. a) Explain about the operation of maximum mode 8086 system with block diagram?	10M	1	BT 2
b) Write a short note on I/O Mapped I/O.	4M	1	BT 2
OR			
4. Design an interface between 8086 CPU and two chips of 16Kx8 EPROM and two chips of 32Kx8 RAM. Select the starting address of EPROM suitably. The RAM address must start at 00000H?	14M	2	BT 6
UNIT-III			
5. Interface an 8255 with 8086 to work as I/O port. Initialize port A as output port, port B as input port and port C as output port. Port A address should be 0740H. Write an ALP to sense the switch positions SW0-SW7 connected at port B. The sensed pattern is to be displayed on port A, to which 8 LEDs are connected, while the port C lower displays number of ON switches out of 8 switches.	14M	2	BT 6
OR			
6. a) Explain about interrupt structure of 8086 microprocessor?	6M	3	BT 3
b) Draw and explain pin diagram of 8259 PIC?	8M	3	BT 1
UNIT-IV			
7. a) Describe the architecture of 8253 programmable interval timer/counter.	10M	2	BT 2
b) Elucidate synchronous and asynchronous data transfer.	4M	2	BT 1
OR			
8. a) Examine the need of TTL to RS232C and RS232C to TTL conversion in serial communication.	7M	2	BT 4
b) What are the modes of operation of 8253, describe in detail.	7M	2	BT 1
UNIT-V			
9. a) List the salient features of microprocessor 80286.	7M	4	BT 1
b) What is Paging? Illustrate it with consideration of 80286.	7M	4	BT 2
OR			
10. a) Describe the salient features of Pentium and Pentium pro processors.	7M	4	BT 1
b) Write about register organization of 80386.	7M	4	BT 2

END

Hall Ticket Number :

R-19

Code: 19A561T

III B.Tech. II Semester Supplementary Examinations December 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)

	Marks	CO	Blooms Level
UNIT-I			
1. (i) Give the error recovery actions in lexical Analyzer?	4M	CO1	L2
(ii) Discuss about the input buffering scheme in Lexical Analyzer.	6M	CO1	L2
(iii) Explain in detail about compiler construction tools.	4M	CO1	L2
OR			
2. Explain in detail the process of compilation. Illustrate the output of each phase of compilation for the input $a = (b+c) * (b+c) * 2$	14M	CO1	L2
UNIT-II			
3. Construct a CFG for the following for Variable identifier declaration with the following restriction a) Only for int data type b) No need to consider white space c) The identifier can start with a letter (only small letters) or underscore(_) followed by any number of either digit or letter” d) Restrict the small letter alphabets to set of {a,b} and restrict the digit number to set of {1,2,3} for convenience. For the created grammar Construct Non-Recursive predictive parser table Parse the string “int_a1”	14M	CO2	L4
OR			
4. Construct the LL(1) Table and Draw the Optimized Transition Diagram for the following CFG $S \rightarrow A \quad A \rightarrow aB/Ad \quad B \rightarrow bBC/f \quad C \rightarrow g$	14M	CO2	L4
UNIT-III			
5. Compute the operator precedence matrix, precedence relation and precedence function for the following grammar and generate the stack implementation for the expression water+water*water. Where GIRAFFE, ELEPHANT, TIGER, FOX are Non-Terminals and food, water are terminals GIRAFFE ELEPHANT ELEPHANT ELEPHANT + TIGER ELEPHANT – TIGER TIGER TIGER TIGER * FOX TIGER / FOX FOX FOX food water (ELEPHANT)	14M	CO3	L4
OR			
6. Show that the Grammar is LR(1) but not LALR. $S \rightarrow Aa/bAc/Bc/bBa, \quad A \rightarrow d, \quad B \rightarrow d$	14M	CO3	L4

UNIT-IV

7. (i) What is syntax directed translation? How it is different from translation schemes? Explain with an example. 8M CO4 L4
- (ii) Translate the given expression into triples and indirect triples $(a+b)*(c+d)+(a*b/c)*b+60$. 6M CO4 L4

OR

8. (i) Explain the sequence of stack allocation process for a function call. 8M CO4 L5
- (ii) What is an Activation Record? Explain how it is relevant to the intermediate code generation phase with respect to procedure declarations 6M CO4 L1

UNIT-V

9. (i) Consider the following code, find out the minimum number of registers required to compile the given code
- a) with optimizations and
b) without optimization
- ```

c = a + b;
d = c + a;
e = c + a;
x = c * c;
if (x < a)
 y = a + a ;
else
 d = d + d;
 e = e + e;

```
- 8M CO5 L5
- (ii) List the possible transformations that are available in the below code
- ```

for( i= 0 ; i < n ; i++)
{
    for( j = 0 ; j < n ; j ++ )
    {
        if( i % 2 )
        {
            x += ( 4 * j + 5 * i);
            j += ( 7 + 4 * j);
        }
    }
}

```
- 6M CO5 L5

OR

10. (i) Develop a DAG and optimal target code for the expression.
 $x = ((p + q) / (q-r)) - (p + q) * (q-r) + s$ 6M CO5 L2
- (ii) Write the code sequence for the $d := (a-b) + (a-c) + (a-c)$. Apply code generation algorithm to generate a code sequence for the three address statement. 8M CO5 L5

END

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R-19

Code: 19A562T

III B.Tech. II Semester Supplementary Examinations December 2022

Object Oriented Analysis and 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)

	Marks	CO	Blooms Level
UNIT-I			
1. a) Write about structural things of UML vocabulary. Give UML notations.	7M	CO1	L1
b) Explain the software development life cycle with a neat diagram.	7M	CO1	L2
OR			
2. a) Describe about stereotypes, tagged values and constraints with suitable examples.	8M	CO1	L2
b) Illustrate how classes can be used for modeling the non-software things and modeling primitive types.	6M	CO1	L3
UNIT-II			
3. a) What is class diagram? Enumerate steps to model a logical database schema using class diagram?	8M	CO2	L1
b) Draw and explain the class diagram for online railway reservation system.	6M	CO2	L4
OR			
4. a) Define an object. Mention common uses of object.	6M	CO2	L1
b) Explain interfaces, types and roles with examples.	8M	CO2	L2
UNIT-III			
5. a) Compare and contrast sequence and collaboration diagrams.	7M	CO3	L4
b) Describe with an example how to model flow of control by time and flow of control by organization.	7M	CO3	L2
OR			
6. Draw the usecase diagram and the activity diagram for ATM system. Summarize the purpose of each usecase, actor and its importance. Briefly explain the terms activity state and action state in the activity diagram.	14M	CO3	L2

UNIT-IV

7. Explain the following with an example:
 i) Events and Signal ii) Time and Space
 iii) Process and threads
- 14M CO4 L2

OR

8. a) What is meant by state machine? Discuss about sequential substates and history states with an example. 8M CO4 L1
 b) Draw the state chart diagram for University library system. 6M CO4 L4

UNIT-V

9. a) State and explain deployment diagram. Illustrate steps for modeling a client/server system. 7M CO5 L2
 b) Explain the steps to model the embedded system and distributed application. 7M CO5 L2
- OR**
10. a) Illustrate various modeling techniques for component diagram. 7M CO5 L3
 b) Compare the following:
 i) Components and classes
 ii) Nodes and components 7M CO5 L4

END