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ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : CSE/ECE	**Semester**	**: I**
Date : 12.10.2018	**Time: 90 Minutes**	**Max Marks : 50**

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
    CO1: Develop algorithmic solutions to simple computational problems.
    CO2: Read, write, execute by hand simple Python programs.

PART –A (5 * 2 = 10)

1	Name the four types of scalar objects python has.	CO1	K1
2	What is a tuple? How literals of type tuple are written? Give Example.	CO1	K3
3	Define identifiers in python.	CO1	K2
4	Define module.	CO2	K2
5	What are the 2 modes in which Python operates?	CO2	K2

PART –B (40)

6	**a) i)** What is algorithm? Explain characteristics, quality and representation.(8) (ii Appraise the arithmetic operators in python with an example. (12)	CO1	K4
	(OR)		
	b) What are the types of operators supported by python language? List the operators and explain them.(16)	CO1	K2
7	**a) i)** Outline the operator precedence of arithmetic operators in python. (6) (ii) Explain the various function arguments in details.(10)	CO2	K3
	(OR)		
	b) i) Briefly explain about Python values and types (8) ii) Write a note on function definition and use & flow of execution.(8)	CO2	K2
8	**a) i)** Write python program to to test for leap year. (4) ii) Write Python program to Exchange the values of two variables(4)	CO1	K2
	(OR		
	b). Write a python program using function to find the sum of first 'n' even numbers and print the result(8)	CO1	K2

SUBJECT INCHARGE   **HOD**

REG. NO.													

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : CSE/ECE   Semester   : I

Date   : 08.10.2018   Time: 90 Minutes   Max Marks   : 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3: Structure simple Python programs for solving problems.

CO4: Decompose a Python program into functions.

PART –A (5 * 2 = 10)

1	What is list? How list differ from tuples.	CO3	K2
2	How to slice a list in a python..	CO3	K2
3	What is Cloning of List?	CO3	K2
4	List out the methods on dictionaries	CO4	K2
5	Define Tuples.	CO4	K1

PART –B (40)

6	**a)** What are dictionaries in python? Give an example and appraise the operation for dynamically manipulating dictionaries.(16)	CO3	K2
	(OR)		
	b) Discuss about the list loop, list mutability and List Comprehension with examples.(16)	CO3	K2
7	**a)**). Explain about tuples and also the concept of tuple assignment and tuples as return value with example.(16)	CO4	K3
	(OR)		
	b) Illustrate the program to write a selection sort and insertion sort. (16)	CO4	K3
8	**a)** Write a python program to store 'n' numbers in a list and sort the list using merge sort (8)	CO3	K3
	(OR		
	b). Illustrate the program to write and to print histogram(8)	CO3	K3

SUBJECT INCHARGE   **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : EEE/MECH **Semester** : I

Date : 08.10.2018 **Time:** 90 Minutes **Max Marks** : 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO4: Decompose a Python program into functions.

PART –A (5 * 2 = 10)

1	What is list? How list differ from tuples.	CO3	K2
2	How to slice a list in a python..	CO3	K2
3	What is Cloning of List?	CO4	K2
4	List out the methods on dictionaries	CO4	K2
5	Define Tuples.	CO4	K1

PART –B (40)

6	a) What are dictionaries in python? Give an example and appraise the operation for dynamically manipulating dictionaries.(16)	CO3	K2
	(OR)		
	b) Discuss about the list loop, list mutability and List Comprehension with examples.(16)	CO3	K2
7	a)). Explain about tuples and also the concept of tuple assignment and tuples as return value with example.(16)	CO4	K3
	(OR)		
	b) Illustrate the program to write a selection sort and insertion sort. (16)	CO4	K3
8	a) Write a python program to store 'n' numbers in a list and sort the list using merge sort (8)	CO3	K3
	(OR		
	b). Illustrate the program to write and to print histogram(8)	CO3	K3

SUBJECT INCHARGE **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : EEE   Semester : I

Date   : 04.12.2018   Time: 3 hours   Max Marks :   100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Develop algorithmic solutions to simple computational problems
CO2: Read, write, execute by hand simple Python programs.
CO3: Structure simple Python programs for solving problems.
CO4: Decompose a Python program into functions.
CO5: Represent compound data using Python lists, tuples, dictionaries.
CO6: Read and write data from/to files in Python programs

PART - A (10 * 2 = 20)

1	What are the rules for drawing a flowchart?	CO1	K 1
2	Write an algorithm to accept two numbers compute the sum and print the result.	CO1	K1
3	Define parameters and arguments	CO2	K2
4	What is a tuple? How literals of type tuple are written? Give Example.	CO2	K2
5	Write a python program to accept two numbers, multiply them and print the result.	CO3	K1
6	Differentiate for loop and while loop	CO3	K1
7	What is list? How list differ from tuples.	CO4	K1
8	List out the methods on dictionaries.	CO4	K2
9	Give the syntax and example of file open.	CO5	K1
10	Define pickling	CO5	K2

PART - B (5 *16 = 80)

11	**a)** i) Draw a flow chart to accept three distinct numbers find the greatest and print the result. (8) (ii) Draw flow chart to find the sum of series 1+2+3+4+5+………100 (5).	CO1	K4
	(OR) **b)** Explain in detail about building blocks of algorithms.	CO1	K4
12	**a)** What are the types of operators supported by python language? List the operators and explain them.	CO2	K2
	(OR) **b)** i) Briefly explain about Python values and types (8) ii) Write a note on function definition and use & flow of execution.(5)	CO2	K2

13	a) i)Explain the branching statements in python with relevant syntax and example.(10) ii) Write Python program to Exchange the values of two variables(3) (OR) b) i) Write a python program to find the factorial of a given number with and without recursion. (8) ii) Write a python program to generate first 'N' Fibonacci number.(5)	CO3 CO3	K3 K3
14	a) What are dictionaries in python? Give an example and appraise the operation for dynamically manipulating dictionaries (OR) b) Illustrate the program to write a selection sort and insertion sort.	CO4 CO4	K2 K3
15	a) i) Tabulate the different modes for opening a file and explain them the same.(7) ii) Explain with example modules and packages.(6) (OR) b) Explain about exception handling.	CO5 CO5	K2 K2

PART - C (1*15=15)

16	Write python program to list the first n prime numbers using function.	C05	K3

SUBJECT INCHARGE   **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : CSE &ECE   **Semester : I**

Date   : 06.12.2018   **Time: 3 hours**   **Max Marks : 100**

BLOOM'S   TAXONOMY   : K-Level   [K1-Remember,   K2-Understand,   K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
    CO1: Develop algorithmic solutions to simple computational problems
    CO2: Read, write, execute by hand simple Python programs.
    CO3: Structure simple Python programs for solving problems.
    CO4: Decompose a Python program into functions.
    CO5: Represent compound data using Python lists, tuples, dictionaries.
    CO6: Read and write data from/to files in Python programs

PART - A (10 * 2 = 20)

1	What are the rules for drawing a flowchart?	CO1	K 1
2	Write an algorithm to accept two numbers compute the sum and print the result.	CO1	K1
3	Define parameters and arguments	CO2	K2
4	What is a tuple? How literals of type tuple are written? Give Example.	CO2	K2
5	Write a python program to accept two numbers, multiply them and print the result.	CO3	K1
6	Differentiate for loop and while loop	CO3	K1
7	What is list? How list differ from tuples.	CO4	K1
8	List out the methods on dictionaries.	CO5	K2
9	Give the syntax and example of file open.	CO5	K1
10	Define pickling	CO6	K2

PART - B (5 *16 = 80)

11	a) i) Draw a flow chart to accept three distinct numbers find the greatest and print the result. (8) (ii) Draw flow chart to find the sum of series 1+2+3+4+5+………100 (5).	CO1	K4
	(OR) b) Explain in detail about building blocks of algorithms.(16)	CO1	K4
12	a) What are the types of operators supported by python language? List the operators and explain them.	CO2	K2
	(OR) b) i) Briefly explain about Python values and types (8) ii) Write a note on function definition and use & flow of execution.(5)	CO2	K2

13	**a)** i)Explain the branching statements in python with relevant syntax and example.(10) ii) Write Python program to Exchange the values of two variables(3) <center>(OR)</center>	CO3	K3
	b) i) Write a python program to find the factorial of a given number with and without recursion. (8) ii) Write a python program to generate first 'N' Fibonacci number.(5)	CO3	K3
14	**a)** What are dictionaries in python? Give an example and appraise the operation for dynamically manipulating dictionaries <center>(OR)</center>	CO4	K2
	b) Illustrate the program to write a selection sort and insertion sort.	CO4	K3
15	**a)** i) Tabulate the different modes for opening a file and explain them the same.(7) ii) Explain with example modules and packages.(6) <center>(OR)</center>	CO5	K2
	b) Explain about exception handling.	CO5	K2

PART - C (1*15=15)

16	Write python program to list the first n prime numbers using function.	C05	K3

SUBJECT INCHARGE   **HOD**

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ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
GE8151-PROBLEM SOLVING AND PYTHON PROGRAMMING

Department : MECH   **Semester : I**

Date   : 03.12.2018   **Time: 3 hours**   **Max Marks : 100**

**BLOOM'S   TAXONOMY   :   K-Level   [K1-Remember,   K2-Understand,   K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]**

COURSE OUTCOMES:
CO1: Develop algorithmic solutions to simple computational problems
CO2: Read, write, execute by hand simple Python programs.
CO3: Structure simple Python programs for solving problems.
CO4: Decompose a Python program into functions.
CO5: Represent compound data using Python lists, tuples, dictionaries.
CO6: Read and write data from/to files in Python programs

PART - A (10 * 2 = 20)

1	What are the rules for drawing a flowchart?	CO1	K 1
2	Write an algorithm to accept two numbers compute the sum and print the result.	CO1	K1
3	Define parameters and arguments	CO2	K2
4	What is a tuple? How literals of type tuple are written? Give Example.	CO2	K2
5	Write a python program to accept two numbers, multiply them and print the result.	CO3	K1
6	Differentiate for loop and while loop	CO3	K1
7	What is list? How list differ from tuples.	CO4	K1
8	List out the methods on dictionaries.	CO4	K2
9	Give the syntax and example of file open.	CO5	K1
10	Define pickling	CO5	K2

PART - B (5 *13 = 65)

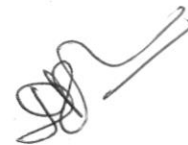| 11	a) i) Draw a flow chart to accept three distinct numbers find the greatest and print the result. (5) (ii) Draw flow chart to find the sum of series 1+2+3+4+5+.........100 (8).	CO1	K4
	(OR) b) Explain in detail about building blocks of algorithms.(16)	CO1	K4
12	a) What are the types of operators supported by python language? List the operators and explain them.	CO2	K2
	(OR) b) i) Briefly explain about Python values and types (7) ii) Write a note on function definition and use & flow of execution.(6)	CO2	K2

13	a) i)Explain the branching statements in python with relevant syntax and example.(10) ii) Write Python program to Exchange the values of two variables(3) (OR) b) i) Write a python program to find the factorial of a given number with and without recursion. (8) ii) Write a python program to generate first 'N' Fibonacci number.(5)	CO3 CO3	K3 K3
14	a) What are dictionaries in python? Give an example and appraise the operation for dynamically manipulating dictionaries (OR) b) Illustrate the program to write a selection sort and insertion sort.	CO4 CO4	K2 K3
15	a) i) Tabulate the different modes for opening a file and explain them the same.(8) ii) Explain with example modules and packages.(8) (OR) b) Explain about exception handling.(16)	CO5 CO5	K2 K2

PART - C (1*15=15)

16	Write python program to list the first n prime numbers using function	C05	K3

SUBJECT INCHARGE   **HOD**

REG. NO.												

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
CS8251-PROGRAMMING IN C

Department : CSE   **Semester**   : II

Date   : 01. 03. 2019   **Time:** 90 Minutes   **Max Marks** : 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
　　　　CO1: Develop simple applications in C using basic constructs
　　　　CO2: Design and implement applications using arrays and strings

PART –A (5 * 2 = 10)

1	Define Array.	CO2	K1
2	Declare a character array of size 5 and assign vowels to it.	CO2	K3
3	How strings are represented in C language?	CO2	K2
4	Write example code to declare two dimensional array.	CO2	K3
5	Name any two library functions used for string handling.	CO2	K3

PART –B (2 * 13=26)

6	a) Write a C program to subtract two matrices and display the resultant matrix.	CO2	K3
	(OR)		
	b) Write a C program to search an element in a given array	CO2	K3
7	a) Explain about the following searching methods. 　　　a.　Linear search 　　　b.　Binary search	CO2	K3
	(OR)		
	b) Briefly explain the various string handling functions in C	CO2	K2

PART-C(1*14=14)

8	a)) Write a C program to find mean and median for an array of elements.	CO2	K4
	(OR)		
	b) Write a C program to find out the length of the string without using builtin functions	CO2	K3

SUBJECT INCHARGE   **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
CS8251-PROGRAMMING IN C

Department : CSE   **Semester : II**

Date : 27.03.2019   **Time: 90 Minutes**   **Max Marks : 50**

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

     CO3: Develop and implement applications in C using functions and pointers.

     CO4: Develop applications in C using structures.

Answer ALL Questions
PART –A (5 * 2 = 10)

1	What do you mean by Structure?	CO3	K1
2	Write the purpose of using realloc() function	CO3	K2
3	Differences between Arrays and Structures	CO4	K2
4	What is dynamic memory allocation?	CO4	K1
5	Write down the operations that could be performed over singly linked list	CO4	K2

PART –B (2 * 13=26)

6	**a)** i) Write in detail about Structures (8). ii) What is Union? Discuss with example. (7)	CO3	K1
	(OR)	CO3	K2
	b) Write a C program to create mark sheet for students using structures.		
7	**a)**) i) Define and declare a structure to store date, which includes day, month and year.(8) ii) Discuss about Unions and structures with examples.(7)	CO4	K3
	(OR)		
	b) Write a C program to store the employees information using structure and search a particular employee using Employee Number.	CO4	K3

PART –C (1* 14=14)

8	**a)** Define a structure book with book name ,author name and price. Write a C program to read the details of book name, auhor name and price of 200 books in a library an display the total cost of the books and book details whose price is above Rs.500	CO3	K4
	(OR)		
	b) Write a C program to add distance using structure	CO3	K4

SUBJECT INCHARGE   **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
CS8251-PROGRAMMING IN C

Department : CSE   **Semester**   :   **II**

Date   :   **10.04.2019**   **Time: 3 Hours**   **Max Marks**   :   **100**

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
    CO1: Develop simple applications in C using basic constructs
    CO2: Design and implement applications using arrays and strings
    CO3: Develop and implement applications in C using functions and pointers.
    CO4: Develop applications in C using structures.
    CO5: Design applications using sequential and random access file processingDesign algorithms for various computing problems.

PART –A (10 * 2 = 20)

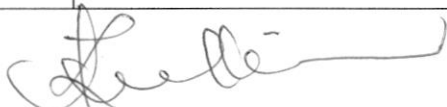| 1	Distinquish between do..while and while statement in C.	CO1	K 1
2	Define Array.	CO1	K1
3	Write for loop to print numbers from 10 to 1.	CO2	K2
4	How strings are represented in C language.	CO2	K2
5	What are the operators used in singly linked list.	CO3	K1
6	Define Recursion.	CO3	K1
7	What are differences between arrays and structures?	CO4	K2
8	List the advantages of using realloc() function	CO4	K1
9	What is file? Mention its type.	CO5	K2
10	Write the syntax to open a file .	CO5	K1

PART –B (5 X 13=65 Marks)

11	**a)** What are the various operators available in C. Explain with examples.	CO1	K4
	(OR)		
	b) Write in detail about Decision making, branching and looping statements in C.	CO1	K2
12	**a)** Write a C program to multiply 2 matrices	CO2	K4
	(OR)		
	b) Write a C program to insert a substring in a string.	CO2	K4
13	**a)** Write a C program to perform scientific calculations.	CO3	K3
	(OR)		
	b) Explain about pass by value and pass by reference in C..	CO3	K2

14	a) Write in detail about Structures and Unions with examples	CO4	K2
	(OR)		
	b) Write a C program to store employees information using structures	CO4	K2
15	a) Write a C program to find average of numbers stored in sequential file	CO5	K3
	(OR)		
	b) Explain about Random access file with examples.	CO5	K3

PART –C (1 X 15=15 Marks)

16	a) Write a C program to sort N names in alphabetical order.	CO5	K4
	(OR)		
	b) Write a C program to create mark sheet for students using structures.	CO5	K4

SUBJECT IN-CHARGE   **HOD**

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
CS8391 – DATA STRUCTURES

Department : CSE   **Semester : VII**

Date   :05.08.2019   **Time: 3 Hours**   **Max Marks : 100**

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Implement abstract data types for linear data structures.

CO2: Apply the different linear and non-linear data structures to problem solutions.

PART - A (10 * 2 = 20)

1	What is an abstract data type?	CO1	K 1
2	What is Linked List?	CO1	K1
3	What is circular linked list?	CO1	K2
4	. State the advantage of ADT	CO1	K2
5	What is static linked list? State any two applications of it	CO1	K1
6	What are the disadvantages of linked list over array? (. Define a graph.	CO2	K1
7	Distinguish between Array and Linked List.	CO2	K1
8	What do you mean by non linear data structures? Give Example	CO2	K2
9	What do you mean by linear data structures? Give Example.	CO2	K1
10	Describe the differences between singly and doubly linked lists.	CO2	K3

PART - B (5 *13 = 65)

11	a Explain in detail about array-based implementation. (13)	CO1	K4
	(OR)		
	b))What are the various operations on array? Write a procedure to insert an element in the middle of the array.(13)	CO1	K4
12	a) Explain about Linked list implementation.(13)	CO2	K4
	(OR)		
	b) List the following operations in a Singly linked list implementation		
	(a) Creation of a list.(5)		
	(b) Insertion of any element in the linked list.(8	CO2	K4
13	a) Analyze the Circular Linked list for the following operations using structure pointer.	CO3	K2
	i.Create & Insert. (6)		

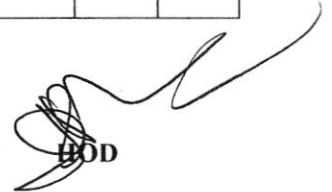|			
	ii. Delete & Display. (OR) **b)** Explain about Circular Linked list.	CO3	K2

14	**a)** Describe in detail about the following representations of a graph.
	    i. Adjacency Matrix (7)
	    ii. Adjacency List (6)
	
	(OR)
		CO4	K2

	b) Given the adjacency matrix of a graph, write an algorithm to calculate the in-degree and the out- degree of a node N in the graph. (13)	CO4	K3
15	**a)** What are expression trees. Write the procedure for constructing expression trees. Explain with example. (OR)	CO5	K2
	b) Describe the shortest path algorithm with suitable example.(13)	CO5	K2

PART - C (1 * 15 = 15)

16	i State the polynomial representation for 6x3+9x2+7x=1 using linked list .Write procedure to add and multiply 2 polynomial and explain with suitable example. iii] What is the shared secret key? (5)	CO1	K4

SUBJECT INCHARGE

HOD

| | REG. NO. | | | | | | | | | | | | | |

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II

CS8391 – DATA STRUCTURES

Department: CSE   **Semester** : VII

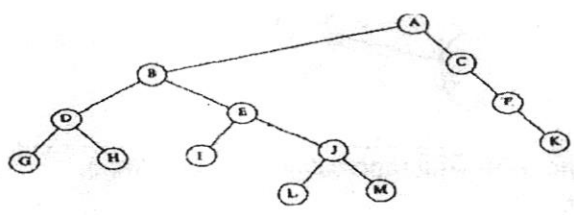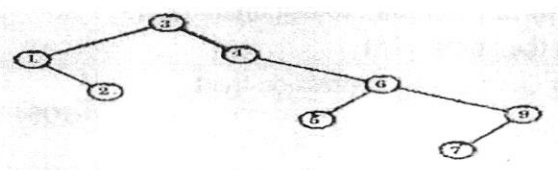**Date** : 18.09.2019   **Time: 3 Hours**   **Max Marks** : 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6 - Create]
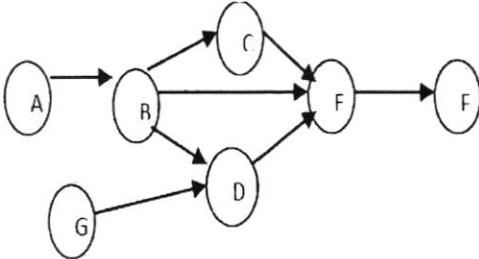
COURSE OUTCOMES:

CO2: Apply the different linear and non-linear data structures to problem solutions.
CO3: Critically analyze the various sorting algorithms.

PART - A (10 * 2 = 20)

1	For the tree in the Figure .1
	    a)List the siblings for the node E.
	    b)Compute the height.
	
		CO1	K 1

2	Show the result of in order traversal of the binary search tree given on the Figure2 Figure .2	CO1	K1
3	Construct an expression tree for the expression A+(B – C)*D*(E+F).	CO2	K2
4	Define Binary search tree	CO2	K2
5	. What is the use of threaded binary tree?	CO3	K1
6	Define a graph.	CO3	K1
7	Define complete graph.	CO4	K1
8	Differentiate Graph and tree.	CO4	K2

9	What are the representation of the graphs?	CO5	K1
10	What are the representation of the graphs?	CO5	K3

PART - B (5 *13 = 65)

11	a) Explain various tree traversal algorithms of a binary tree with implementation. (13)		
	(OR)	CO1	K4
	b) Write the following routines to implement the basic binary search tree operations.		
	i. Perform insert operation in binary serah tree. ii. Find_min and Find_max.	CO1	K4
12	a) i) Discuss how to insert an element in a AVL tree, Explain with example (7) ii. Explain how deletion can take place in AVL trees with suitable example (6) (OR)	CO2	K4
	b) What is a heap? Explain about insertion and deletion performed in a heap. (13)	CO2	K4
13	a)) Explain about Graph Traversal Methods with suitable examples. (13) (OR) b) Consider a directed acyclic graph G given in following figure. Sort the nodes of G by applying topological sort on G. (13)		
		CO3	K2
		CO3	K2

14	a) a) Describe in detail about the following representations of a graph.
	      i. Adjacency Matrix (7)
	      ii. Adjacency List (6)
		CO4	K2

	(OR) b) Given the adjacency matrix of a graph, write an algorithm to calculate the in-degree and the out- degree of a node N in the graph. (13)	CO4	K3
15	a) What are expression trees. Write the procedure for constructing expression trees. Explain with example.	CO5	K2
	(OR) b Describe the shortest path algorithm with suitable example.(13)	CO5	K3

PART - C (1 * 15 = 15)

16	Distinguish between B tree and B+ tree .Create a B tree of order 5 by inserting the following elements: 3,14,7,1,8,5,11,17,13,6,23,12,20,26,4,16,18,24,25,and19	CO5	K4

SUBJECT INCHARGE

HOD

REG. NO. | | | | | | | | | | | |

ST.ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III

CS8391 – DATA STRUCTURES

| Department : CSE | | Semester : III |
| Date : 11.10.2019 | Time: 3 Hours | Max Marks : 100 |

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Implement abstract data types for linear data structures.
CO2: Apply the different linear and non-linear data structures to problem solutions.
CO3: Critically analyze the various sorting algorithms.

PART - A (10 * 2 = 20)

1	What is Linked List.	CO1	K 1
2	Compare calloc() and realloc() function and mention its application in linked list.	CO1	K1
3	Define stack and queue.	CO2	K2
4	What are priority queues?What are the ways to implement priority queues?	CO2	K2
5	How is binary tree represented using an array? Give an example.	CO3	K1
6	What is AVL tree?	CO3	K1
7	What is topological sorting?	CO4	K1
8	Define directed and undirected graph?	CO4	K2
9	What is overflow in hashing?	CO5	K1
10	Compare linear search and binary search.	CO5	K3

PART - B (5 *13 = 65)

11	a) List an algorithm to perform the following operations in a doubly linked list. i.Insert a node at the end of the list.(7) ii.Delete the last node in the list. (6) **(OR)**	CO1	K4
	b) State the polynomial representation for 6x3+9x2+7x=1 using linked list .Write procedure to add and multiply 2 polynomial and explain with suitable example.(13)	CO1	K4
12	a) What is expression? Explain about infix to postfix conversions.(13) **(OR)**	CO2	K4
	b) (i)Explain array based implementation of stacks. (7) (ii) Explain linked list implementation of stacks. (6) .	CO2	K4
13	a) Explain in detail about B tree with suitable example. (13) **(OR)**	CO3	K2
	b) Explain in detail about binary search tree with suitable Examples (13)	CO3	K2

14	a) Distinguish between breadth first search and depth first search with example.(13) (OR) b) Explain in detail about topological sorting. (13)	CO4 CO4	K2 K3
15	a) Distinguish between linear search and binary search. State and explain thee algorithms for both the search with example(13) (OR) b) Sort the following list of numbers using bubble sort technique. (13) 52,1,27,85,66,23,13,57.	CO5 CO5	K2 K3

PART - C (1 * 15 = 15)

16	a) Sort the given integers and show the intermediate results using shell sort (13)
	35,12,14,9,15,45,32,95,40,5
	(OR)
	b) Given input {4371,1323,6173,4199,4344,9679,1989} and a hash function h(x) = x (mod 10) ,show the resulting
	    i. Open hash table
	    ii. Closed hash table using linear probing
	    iii. Closed hash table using quadratic probing
		CO5
		
		CO5
			K4
			
			K4

SUBJECT INCHARGE

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ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8491-COMPUTER ARCHITECTURE

Dept: CSE

Date: 07.02.2020   **Time:** 3 Hours   **Semester:** IV

Max Marks: 100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1:Understand the basics structure of computers, operations and instructions.

CO2: Design arithmetic and logic unit

PART - A (10 * 2 = 20)

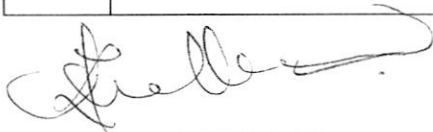| 1	Define IR and MAR	CO1	K1
2	Name the functional units of a computer	CO1	K1
3	How CPU execution time for a program is calculated?	CO1	K2
4	What is meant by addressing mode? Mention them.	CO1	K2
5	Differentiate between direct and indirect addressing mode	CO1	K1
6	Define little Endian and Big Endian arrangements	CO2	K1
7	Draw half adder circuit.	CO2	K2
8	Define IEEE floating point single and double precision standard.	CO2	K1
9	Write rules for addition in floating point operation	CO2	K2
10	Draw and explain a block diagram of parallel adder.	CO2	K1

PART - B (5 * 13 = 65)

11	a) Give detail description about Components of a computer system with neat diagram.	CO1	K4
	(OR)		
	b) Explain the basic operational concepts with example	CO1	K2
12	a) Explain the types of operations and operands with example? (13)	CO1	K4
	(OR)		
	b) Explain the various techniques to represent instructions in a computer system?(.	CO1	K4
13	a) i) Explain the logical operation with example? (7) ii) Explain the types of decision making with suitable example? (6)	CO1	K2
	(OR)		
	b) Explain the principles of carrylook ahead adder?	CO1	K2
14	a) Explain in detail about the multiplication algorithm with suitable examples and	CO2	K2

			CO2	K2
	diagram **(OR)** **b)** Discuss in detail about restoring division algorithm in detail with diagram and examples			
15	**a)** Explain about floating point addition with suitable example? **(OR)**		CO2	K2
	b) Explain in detail about floating point multiplication with suitable example		CO2	K2

PART - C (1 * 15 = 15)

16	**a)** .Elaborate different types of addressing modes with example. **(OR)**		CO2	K2
	b) Represent 1259.125 in single precision and double precision formats		CO2	K3

SUBJECT IN-CHARGE

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ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8491-COMPUTER ARCHITECTURE

Dept: CSE **Semester:** IV

Date: 04.03.2020 **Time:** 3 Hours **Max Marks:** 100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3: Understand pipelined execution and design control unit.

CO4: Understand parallel processing architectures.

PART - A (10 * 2 = 20)

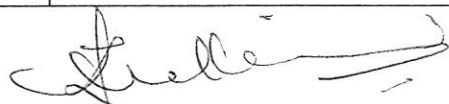| 1	Define Datapath.	CO1	K1
2	Draw datapath segment for branch-target address.	CO1	K1
3	List 4 steps in instruction pipeline	CO1	K2
4	What is meant by hazard in pipelining?	CO1	K2
5	What is instruction or control hazard?	CO1	K1
6	State Amdhal's Law	CO2	K1
7	What is Flynn's classification?	CO2	K2
8	What is multithreading.	CO2	K1
9	What do you know about shared address multiprocessor?	CO2	K2
10	What is Cluster?	CO2	K1

PART - B (5 * 13 = 65)

11	a) Give detail description about basic MIPS implementation with necessary multiplexers and control lines.	CO1	K4
	(OR)		
	b) Draw and explain the the datapath segment for computation for arithmetic logic circuit and load word/store word instruction.	CO1	K2
12	a) Explain the types of operations and operands with example? (13)	CO1	K4
	(OR)		
	b) Explain the various techniques to represent instructions in a computer system?(.	CO1	K4
13	a) i) Explain the logical operation with example? (7) ii) Explain the types of decision making with suitable example? (6)	CO1	K2
	(OR)		
	b) Explain the principles of carrylook ahead adder?		

			CO1	K2
14	a) Explain in detail about the multiplication algorithm with suitable examples and diagram		CO2	K2
	(OR)			
	b) Discuss in detail about restoring division algorithm in detail with diagram and examples		CO2	K2
15	a) Explain about floating point addition with suitable example?		CO2	K2
	(OR)			
	b) Explain in detail about floating point multiplication with suitable example		CO2	K2

PART - C (1 * 15 = 15)

16	a) .Elaborate different types of addressing modes with example.		CO2	K2
	(OR)			
	b) Represent 1259.125 in single precision and double precision formats		CO2	K3

SUBJECT IN-CHARGE

HOD

REG. NO. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8491-COMPUTER ARCHITECTURE

Dept: CSE   **Semester:** IV
Date: 24.03.2020   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
                                 K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
   CO1:Understand the basics structure of computers, operations and instructions.
   CO2: Design arithmetic and logic unit
   CO3: Understand pipelined execution and design control unit.
   CO4: Understand parallel processing architectures.
   CO5: Understand the various memory systems and I/O communication

PART - A (10 * 2 = 20)

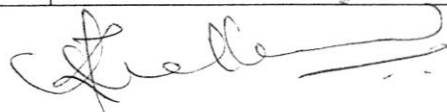| 1	Define IR and MAR.	CO1	K1
2	Name the functional units of a computer.	CO1	K1
3	Write rules for addition in floating point operation.	CO1	K2
4	Draw and explain a block diagram of parallel adder.	CO1	K2
5	List 4 steps in instruction pipeline .	CO1	K1
6	Draw datapath segment for branch-target address.	CO2	K1
7	State Amdhal's Law.	CO2	K2
8	What is Flynn's classification?	CO2	K1
9	Define locality of reference.	CO2	K2
10	What is virtual memory?	CO2	K1

PART - B (5 * 13 = 65)

11	a) Give detail description about Components of a computer system with neat diagram.	CO1	K4
	(OR)		
	b Explain the basic operational concepts with example	CO1	K2
12	a) Explain in detail about the multiplication algorithm with suitable examples and diagram	CO1	K4
	(OR)		
	b) Discuss in detail about restoring division algorithm in detail with diagram and examples	CO1	K4
13	a)Give detail description about basic MIPS implementation with necessary		

	multiplexers and control lines	CO1	K2
	(OR)		
	b) Draw and explain the the datapath segment for computation for arithmetic logic circuit and load word/store word instruction.	CO1	K2
14	**a)** Explain in detail about Flynn's classification.	CO2	K2
	(OR)		
	b) Discuss in detail about Hardware Multithreading.	CO2	K2
15	**a)** Explain about DMA controller with help of block diagram	CO2	K2
	(OR)		
	b) Explain in detail about different types of mapping functions that can be applied to cache memories.	CO2	K2

PART - C (1 * 15 = 15)

16	**a)** Elaborate about several approaches to deal with conditional branching.	CO2	K2
	(OR)		
	b) Represent 1259.125 in single precision and double precision formats	CO2	K3

SUBJECT IN-CHARGE

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REG. NO.											

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8592 - OBJECT ORIENTED ANALYSIS AND DESIGN

Dept: CSE
Date: 11.09.2020   **Time: 90 Minutes**

Semester: V
Max Marks: 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Express software design with UML diagrams
CO2: Design software applications using OO concepts.

PART - A (5*2=10)

1	Define OOAD	CO1	K 1
2	What is UML?	CO1	K1
3	What is unified process?	CO1	K2
4	What are the basic elements of deployment diagrams?	CO2	K2
5	Define a component	CO2	K1

PART - B (2*13 = 26)

6	a) Write briefly about usecase relationship a)include b)extend	CO1	K2
	(OR)		
	b) What does Use case Diagram represent? Give an example.	CO1	K2
7	a) Explain in detail about various actors.	CO2	K2
	(OR)		
	b) . Illustrate with an example, the relationship between UML Sequence diagrams and use cases?.	CO2	K3

PART - C (1*14=14)

8	Draw a sequence diagram to show how a GUI interface with other objects and also draw collaboration diagram	CO1	K3

SUBJECT IN-CHARGE

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ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8592 - OBJECT ORIENTED ANALYSIS AND DESIGN

Dept: CSE   **Semester: V**
Date: 28.09.2020   **Time: 90 Minutes**   **Max Marks: 50**

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO3: Identify various scenarios based on software requirements
CO4: Transform UML based software design into pattern based design using design patterns

PART - A (5*2=10)

1	Define aggregation and composition	CO3	K 1
2	What is multiplicity	CO3	K1
3	What are Use Cases?	CO3	K2
4	What are the basic elements of deployment diagrams?	CO4	K2
5	Define a component	CO4	K1

PART - B (2*13 = 26)

6	a) Write briefly about elaboration and discuss the difference between Elaboration and Inception with example	CO3	K2
	(OR)		
	b) i)Explain with an example aggregation, composition. (8) ii) How to write methods in class? Explain about visibility. (5)	CO3	K2
7	a) Explain in detail about System sequence diagram	CO4	K2
	(OR)		
	b) . Illustrate with an example, the relationship between UML Sequence diagrams and use cases?.	CO4	K3

PART - C (1*14=14)

8	Draw a sequence diagram to show how a GUI interface with other objects and also draw collaboration diagram	CO3	K3

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8592 - OBJECT ORIENTED ANALYSIS AND DESIGN

Dept: CSE
Date: 21.10.2020 **Time: 90 Minutes**

Semester: V
Max Marks: 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO4: Transform UML based software design into pattern based design using design patterns
CO5: Understand the various testing methodologies for OO software

PART - A (5*2=10)

1	What is system sequence diagram (SSD)?	CO4	K 1
2	Name the two types of UML interaction diagrams	CO4	K1
3	Define patterns	CO4	K2
4	Define low coupling?	CO5	K2
5	Explain the factory pattern.	CO5	K1

PART - B (2*13 = 26)

6	a) Explain about interaction diagram notation for inventory management system **(OR)** b) Illustrate with an example, the relationship between UML Sequence diagrams and use cases?	CO4 CO4	K2 K2
7	a) Determine the concepts of Creator, Low coupling, Controller and High cohesion, Information Expert **(OR)** b) Explain with a diagram Gang of Four (GoF) pattern summary and relationships	CO5 CO5	K2 K3

PART - C (1*14=14)

8	Draw the UML diagrams to represent the airline reservation system in detail.	CO4	K3

SUBJECT IN-CHARGE **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8501 –THEORY OF COMPUTATION

Dept: CSE
Date:22.11.2021

Time: 3 Hours

Semester: V
Max Marks:100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Understand the language hierarchy.
CO2: Construct automata for any given pattern and find its equivalent regular expressions
CO3: Design a context free grammar for any given language.
CO4: Understand Turing machines and their capability.
CO5: Understand undecidable problems and NP class problems.

Part – A (10*2=20)

1	Differentiate between DFA and NFA.	CO1	K2
2	Illustrate the induction principle.?	CO1	K2
3	Differentiate between regular expression and regular.	CO2	K2
4	What are the closure properties of regular languages?	CO2	K2
5	Define parse tree and derivation.	CO3	K2
6	What is Instantaneous Descriptions (ID).	CO3	K1
7	Define the pumping Lemma for CFLs.	CO4	K1
8	Differentiate TM and PDA.	CO4	K2
9	Define the classes of P and NP.	CO5	K1
10	Compare and contrast recursive and recursively enumerable languages.	CO5	K2

Part – B (5*13=65)

11	a) Construct DFA equivalent to the NFA given below: **(OR)** b)Tabulate the difference between the NFA and DFA .Convert the following ε-NFA to DFA	CO1	K3
		CO1	K5

states	ε	a	b	c
p	Φ	{p}	{q}	{r}

q	{p}	{q}	{r}	Φ
*r	{q}	{r}	φ	{p}

12	a) Describe NFA with epsilon for the RE=(a/b)*abband convert it into DFA and further find minimized DFA. **(OR)** b) i)Demonstrate how the set L= {ab^n/n>=1} is not a regular. ii) Construct Finite Automata equivalent to theregular expression(ab+a)*.	CO2 CO2	K3 K4
13	a) Construct a PDA accepting {a^{n}b^{m}a^n / m, n>=1} by empty stack. **(OR)** b) Examine Construct the grammar for the following PDAM. M=({q0, q1},{0,1},{X,z0},δ,q0,Z0,Φ) and where δis givenby δ(q0,0,z0)={(q0,XZ0)},δ(q0,0,X)={(q0,XX)},δ(q0,1,X)={(q1,ε)}, δ(q1,1,X)={(q1,ε)},δ(q1,ε,X)={(q1, ε)}, δ(q1, ε, Z0)={(q1,ε)}.	CO3 CO3	K5 K5
14	a)Expressthe following grammar G into Greibach Normal Form(GNF) S→XA|BB B→b|SB X→b A→a **(OR)** b)i) Construct a TM to reverse the given string {abb}. ii)Explain Multi tape and Multi head Turing machine with suitable example.	CO4 CO4	K4 K4
15	a)Discuss post correspondence problem .Let ∑={0,1}.Let A and B be the lists of three strings each as 		List A	List B	 	i	wi	xi	 	1	1	111	 	2	10111	10	 	3	10	0	 **(OR)** b)i)State and describe RICEtheorem. ii) Describe in detail notes on universal Turing machines with example.	CO5 CO5	K5 K5

List A sub-table		
i	wi	xi
1	1	111
2	10111	10
3	10	0

Part – C (1*15=15)

16	a)Identify and explain the algorithm for minimization of DFA. **(OR)** b) Explain about the Turing machine construction techniques.	CO5 CO5	K5 K2

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8501- THEORY OF COMPUTATION

Dept: CSE

Date: 28.10.2021

Semester: V

Max Marks: 50

Time: 1.5 Hours

Answer ALL Questions

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3: Design a context free grammar for any given language.

CO4: Understand Turing machines and their capability.

Part – A (5*2=10)

1	Define the term ambiguity in grammar.	CO3	K 1
2	Define parse tree with an example.	CO3	K1
3	Define Push Down Automata.	CO3	K1
4	Mention the closure properties of context free language.	CO4	K2
5	Define Turing machine.	CO4	K1

Part – B (2*13=26)

6	a)i) Let G be the grammar S→aB|bA, A→a|aS|bAA, B→b|b|S|aBB. For the string aaabbabbba
	
	    find a leftmost derivation and rightmost derivation.
	
	  ii)Design PDA for $\{L=a^n b^n \mid n>=1\}$.
		CO3	K4

	(OR)
	b)Construct CFG for the following PDA where δ is given by,
	$P=(\{q0,q1\},\{0,1\},\{X,Z0\},\delta,q,z0,\Phi)$
	    (a) $\delta(q0,0,z0) = \{ (q0,Xz0)\}$
	    (b) $\delta(q0,0,X) = \{ (q0,XX)\}$
	    (c) $\delta(q0,1,X) = \{ (q1,\varepsilon)\}$
		CO3	K5

7	a.i) Convert the CFG into CNF. S→aaaaS S→aaaa ii)) Convert the CFG into GNF. 　　　S→abSb S→aa	CO4	K5
	(OR) b. Construct Turing Machine for L={$a^n b^n$} where n>=1.	CO4	K5

<div align="center">

Part – C (1*14=14)

</div>

8	a.i)Write about the programming techniques for TM. 　　ii)Prove L={$a^n b^n c^n$|n>=1} is not CFL.	CO3	K5
	Or b.Write about the following with examples i) Removal of useless symbol　　　　ii)Elimination of □ - production 　　iii)Removal of Unit Productions .	CO4	K4

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8501- THEORY OF COMPUTATION

Dept: CSE   **Semester:** V

Date: 04.10.2021   **Time:** 1.5 Hours   **Max Marks:**50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Understand the language hierarchy.

CO2: Construct automata for any given pattern and find its equivalent regular expressions

Part – A (5*2=10)

1	What is finite automata with examples?	CO1	K 1
2	Differentiate between DFA and NFA.	CO1	K2
3	Mention the applications of pumping lemma.	CO1	K2
4	Differentiate regular expression and regular language.	CO2	K2
5	Define epsilon closure.	CO2	K1

Part – B (2*13=26)

6	a)Convert the a DFA from the ϵ –NFA.	CO1	K5

State/input	ϵ	0	1
p	-	$\{p\}$	$\{q\}$
q	$\{p\}$	$\{q\}$	$\{r\}$
r	$\{q\}$	$\{r\}$	-

(OR)

	b) Prove that L is accepted by an NFA with ϵ-transitions the L is accepted by without ϵ-transitions.	CO1	K4

7	a) Findout R.E from given DFA.	CO2	K4

(OR)

	b) Construct minimal DFA for the regular expression (b/a)*baa.	CO2	K4

8	a) Explain about the Closure properties of regular languages.	CO1	K3
	Or		
	b)i)Write about the inductive proof with examples .	CO2	K5
	ii)prove $L=\{0^{2^n} \mid n >= 1\}$ is not regular.	CO2	K5

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8601 - MOBILE COMPUTING

Dept: CSE

Date: 01.04.2021   **Time:** 1.5 Hours

Semester: VI

Max Marks:50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: To understand the basic concepts of mobile computing.

CO2: To learn the basics of mobile telecommunication system.

Part – A (5*2=10)

1	Distinguish Mobile Computing vs. Wireless Networking.	CO1	K2
2	What are the limitations / challenges of mobile computing?	CO1	K3
3	What is the random assignment schemes that are used in MAC protocols?	CO1	K2
4	What do you mean by agent solicitation? Why are agent advertisement messages needed?	CO2	K2
5	Define COA?	CO2	K1

Part – B (2*13=26)

6	a) Explain the various taxonomy of MAC Protocols. Differentiate various schemes.	CO1	K4
	(OR)		
	b)Explain the Bluetooth technology.	CO1	K3
7	a)Ilustrate packet delivery mechanism in Mobile IP network with neat diagram?	CO2	K4
	(OR)	CO2	K3
	b)Explain IP-in-IP, minimal IP and GRE encapsulation methods?		

Part – C (1*14=14)

8	Explain the various improvements in TCP performance with diagram? How does it maintain end to end semantics?	CO1	K5

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
CS8603 – DISTRIBUTED SYSTEMS

Dept: CSE 　　　　　　　　　　　　　　　　　　　　　　　**Semester:** VI

Date: 31.03.2021 　　　　　　　**Time:** 1.5 Hours 　　　　　**Max Marks:**50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,

K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: To understand the foundations of distributed systems.

CO2: To learn issues related to clock Synchronization and the need for global state in distributed systems.

Part – A (5*2=10)

1	Why we do you need distributed system?	CO1	K2
2	Write the Resource Sharing of Distributed system?	CO1	K2
3	Write down the Principles of distributed systems.	CO1	K2
4	Difference between synchronous and asynchronous communication?	CO2	K3
5	Difference between synchronous and asynchronous communication?	CO2	K3

Part – B (2*13=26)

6	**a)** Define distributed systems. What are the significant issues and challenges of the distributed systems?	CO1	K4
	(OR)	CO1	K4
	b)Discuss the different trends in distributed systems.		
7	**a)**Explain in detail about asynchronous execution with synchronous communication.	CO2	K5
	(OR)		
	b)What is group communication? What are the Key areas of applications of group communication? Explain the programming model for group communication.	CO2	K3

Part – C (1*14=14)

8	Explain Christian's method for synchronizing Clocks.	CO1	K5

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COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8651-INTERNET PROGRAMMING

Dept: CSE   **Semester:** VI
Date: 26.03.2021   **Time:** 90 minutes   **Max Marks:** 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Construct a basic website using HTML and Cascading Style Sheets.
CO2: Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.

PART - A (10 * 2 = 20)

1	What are Client and Server?	CO1	K1
2	What is an Internet?	CO1	K1
3	Write about HTTP request.	CO1	K2
4	Define JSON file.	CO2	K2
5	What is PHP? List out its advantages	CO2	K1

PART - B (5 * 8 = 40)

6	a)Draw the Servlet architecture and explain its working.	CO1	K3
	(OR)		
	b) Explain Session handling in Servlet with example.	CO1	K2
7	a)Explain the JSP scripting components in detail with examples	CO2	K2
	(OR)		
	b)Write in deitail about PHP.	CO2	K3

PART - C (14)

8	Design a website using basic HTML tags.	CO1	K2

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8601 - MOBILE COMPUTING

Dept: CSE
Date: 26.04.2021   **Time:** 1.5 Hours   **Semester:** VI   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO3: To be familiar with the network layer protocols and Ad-Hoc networks.
CO4: To know the basis of transport and application layer protocols.

Part – A (5*2=10)

1	What is the purpose of DHCP?	CO3	K 1
2	Compare VANET and MANET?	CO3	K1
3	What are the different classes offered by WTP?	CO3	K2
4	What are the standard libraries available for WML script?	CO4	K2
5	What are Advantage and Disadvantage of Mobile TCP?	CO4	K4

Part – B (2*13=26)

6	a) Explain mobile IP requirement and terminologies. (OR)	CO3	K4
	b)Explain IP in IP, minimal IP and GRE encapsulation methods.	CO3	K3
7	a)i) Write the characteristics of Mobile adhoc network (MANET).(7)	CO4	K2
	ii) Draw the diagram of TCP/IP protocol Stack.(6) (OR)	CO4	K3
	b)Explain in detail about various protocols with suitable examples.	CO4	K4

Part – C (1*14=14)

8	What are the main differences between TCP/IP versus ISO/ OSI Model?	CO4	K5

SUBJECT IN-CHARGE   **HOD**

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ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8603 – DISTRIBUTED SYSTEMS

Dept: CSE **Semester:** VI

Date: 24.04.2021   **Time:** 1.5 Hours   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3: To learn distributed mutual exclusion and deadlock detection algorithms.

CO4: To understand the significance of agreement, fault tolerance and recovery protocols in Distributed Systems.

Part – A (5*2=10)

1	Apply how Maekawas algorithm handles deadlock?	CO3	K 1
2	Define Suzuki-kasami algorithm	CO3	K1
3	What is deadlock?	CO3	K1
4	Explain two point of checkpoint?	CO4	K2
5	What are the performances aspects of agreement protocols?	CO4	K3

Part – B (2*13=26)

6	**a)** Explain about the Lamports distributed mutual exclusion algorithm?	CO3	K4
	(OR)	CO3	K4
	b) Explain about the Ricart-agrawala distributed mutual exclusion algorithm?		
7	**a)** Concludeinbriefaboutknappsclassificationofdistributeddeadlockdetectionalgorithm(path pushing and global state).	CO4	K5
	(OR)		
	b) Explain log based rollback recovery?	CO4	K3

Part – C (1*14=14)

8	Explain byzantine agreement problem?	CO4	K5

SUBJECT IN-CHARGE

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8651-INTERNET PROGRAMMING

Dept: CSE   **Semester:** VI
Date: 21.04.2021   **Time:** 90 minutes   **Max Marks:** 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO3: Develop server side programs using Servlets and JSP.
CO4: Construct simple web pages in PHP and to represent data in XML format.

PART - A (10 * 2 = 20)

1	What are Servlets.	CO3	K1
2	What is JSP?	CO3	K1
3	What are cookies? Give its uses	CO3	K2
4	Define JDBC.	CO4	K2
5	What is PHP? List out its advantages	CO4	K1

PART - B (5 * 8 = 40)

6	a)Draw the Servlet architecture and explain its working.	CO3	K3
	(OR)		
	b) Explain Session handling in Servlet with example.	CO3	K2
7	a)Explain the JSP scripting components in detail with examples	CO4	K2
	(OR)		
	b)Write in deitail about PHP.	CO4	K3

PART - C (14)

8	Write in detail about Program Control in PHP.	CO3	K2

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8601 - MOBILE COMPUTING

Dept: CSE
Date :19.05.2021   **Time:** 1.5 Hours   **Semester:** VI
                                              Max Marks:50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: To understand the basic concepts of mobile computing.
CO2: To learn the basics of mobile telecommunication system.
CO3: To be familiar with the network layer protocols and Ad-Hoc networks.
CO4: To know the basis of transport and application layer protocols.
CO5: To gain knowledge about different mobile platforms and application development.

Part – A (5*2=10)

1	What are the challenges in mobile communication?	CO1	K 3
2	Define Handoff. What are its types?	CO2	K1
3	Define COA.	CO3	K2
4	Define snooping TCP & list its advantages and disadvantages.	CO4	K2
5	Differentiate E-Commerce and M-Commerce.	CO5	K4

Part – B (2*13=26)

6	**a)** Explain Hidden and exposed terminal problem in infrastructure-less network. .	CO1	K3
	(OR)		
	b)Explain the functions of GPRS protocol stack with a diagram.	CO2	K3
7	**a)**Describe the architecture of VANET with a neat diagram.	CO3	K4
	b)Explain WTA architecture?	CO4	K4

Part – C (1*14=14)

8	Explain the components of Mobile Operating Systems	CO5	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8603 – DISTRIBUTED SYSTEMS

Dept: CSE   **Semester:** VI

Date: 18.05.2021   **Time:** 1.5 Hours   **Max Marks:**50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1:To understand the foundations of distributed systems.

CO2:To learn issues related to clock Synchronization and the need for global state in distributed systems.

CO3:To learn distributed mutual exclusion and deadlock detection algorithms.

CO4:To understand the significance of agreement, fault tolerance and recovery protocols in Distributed Systems.

CO5:To learn the characteristics of peer-to-peer and distributed shared memory systems

Part – A (10*2=20)

1	Define distributed systemWhatisheterogeneity?	CO1	K 1
2	Statethepropertyforcausal deliveryofmessages.	CO1	K2
3	DefineGroupcommunication	CO2	K2
4	ListthethreetypesofmessagesforDeadlockhandling.	CO2	K3
5	Formulatetheadvantageof edge-chasingalgorithms?	CO3	K4
6	Compare coordinatedcheckpointingversus uncoordinatedcheckpointing.	CO3	K4
7	Explainthetwotypesof communication-inducedcheckpointing?	CO4	K2
8	Analyze the three basic operations which supports CAN.	CO4	K4
9	Pointoutthethreerequirementsofthecritical sectionproblem.	CO5	K4
10	Define distributed systemWhatisheterogeneity?	CO5	K2

Part – B (5*13=65)

6	Discusstheprimitivesfordistributedcommunication	CO1	K3
7	ExplainCausal order.	CO2	K3
8	Examinesuzuki–kasami'sbroadcastalgorithm.	CO3	K5
9	Explainagreementin(message-passing)synchronoussystemswithfailures.	CO4	K5
10	Explaindataindexingand overlays.	CO5	K3

Part – C (1*15=15)

11	Explainwithexamplesofconsistent andinconsistentstatesofadistributedsystem.	CO2	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8651-INTERNET PROGRAMMING

Dept: CSE
Semester: VI

Date: 13.05.2021   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO4: Construct simple web pages in PHP and to represent data in XML format.
CO5: Use AJAX and web services to develop interactive web applications

PART - A (5 * 2 =10)

1	What is web 2.0? Give an example.	CO4	K1
2	Tell about difference between HTML and XHTML	CO4	K1
3	Define DOM	CO4	K2
4	Write SQL query to find minimum and maximum marks in a table.	CO5	K2
5	List the application of servlets	CO5	K1

PART - B (2*13 = 26)

6	a)i)Examine the enhanced features in HTML 5.0 with a neat example.(7) ii) Create an XHTML document that marks up your resume.(6) **(OR)**	CO4	K3
	b) Describe in detail about JSON Objects and Arrays.	CO4	K2
7	a) Describe in detail about JSON Objects and Arrays. **(OR)**	CO5	K2
	b) i) Integrate how servlets work and its life cycle.(7) ii)Explain and develop the Servlet API. (6)	CO4	K2

PART -C (1*14=14)

8	a)i)Create an XML document that marks up various sports and their descriptions.Use XSLT to tabulate neatly the elements and attributes of the document. (7) ii) Illustrate a JSP page that enables the user to input the first name and in response outputs the last name. (7) **(OR)**	CO4	K2
	b) Explain in detail with an example of Java Web Services.	CO4	K2

SUBJECT IN-CHARGE

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ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8791- CLOUD COMPUTING

Dept: CSE   **Semester:** VII

Date: 01.10.2021   **Time:** 1.5 Hours   **Max Marks:**50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Understand the concept of cloud computing.

CO2: Appreciate the evolution of cloud from the existing technologies

Part – A (5*2=10)

1	Define cloud computing.	CO1	K 1
2	Differentiate between Grid and Cloud Computing.	CO1	K1
3	Define REST.	CO1	K1
4	List the requirements of VMM.	CO2	K2
5	What is Xen.	CO2	K1

Part – B (2*13=26)

6	a) Explain the Hardware Architectures for Parallel Processing.	CO1	K4
	(OR)		
	b) Describe about the characteristics of Cloud computing.	CO1	K3
7	a)Write about the SOAP and WSDL?	CO2	K2
	(OR)		
	b) ExplaintheImplementation Levels of Virtualization	CO2	K4

Part – C (1*14=14)

8	a) What do you understand by 2.5G? Mention few characteristics of this technology. Analyze how it differs from 2Gand 3G.	CO1	K5
	(OR)		
	b)Explain in detail about various protocols with suitable examples	CO2	K3

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8791- CLOUD COMPUTING

Dept: CSE   **Semester:** VII
Date: 27.10.2021   **Time:** 1.5 Hours   **Max Marks:**50
BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO3: Knowledge on the various issues in cloud computing.
CO4: Familiar with the lead players in cloud.

Part – A (5*2=10)

1	What are the different roles of cloud provider?	CO3	K 1
2	Enlist the pros and cons of storage as a service.	CO3	K1
3	What are different risks in cloud storages?	CO3	K1
4	Differentiate between authentication and authorization.	CO4	K2
5	How can the data security be enforced in cloud?	CO4	K3

Part – B (2*13=26)

6	**a)** List the cloud deployment models and give a detailed note about them.	CO3	K3
	(OR)		
	b)Illustrate the cloud delivery models in detail..	CO3	K3
7	**a)**What is the purpose of IAM ? Describe its functional architecturewith an illustration.	CO4	K3
	(OR)		
	b)Write detailed note on Resource Provisioning and Resource Provisioning Methods.	CO4	K4

Part – C (1*14=14)

8	**a)**Explain in brief significance of Amazon S3 in cloud computing.	CO3	K5
	(OR)		
	b)Explain different Security Standards used in cloud computing.	CO4	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8791 - CLOUD COMPUTING

Dept: CSE   **Time:** 3 Hours   **Semester:** VII

Date: 20.11.2021   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Understand the concept of cloud computing.

CO2: Appreciate the evolution of cloud from the existing technologies.

CO3: Knowledge on the various issues in cloud computing.

CO4: Familiar with the lead players in cloud.

CO5: emergence of cloud as the next generation computing paradigm.

Part – A (10*2=20)

#	Question	CO	K
1	List the main characteristics of cloud computing.	CO1	K1
2	Differentiate between Public cloud and Private Cloud.	CO1	K2
3	List the six architectural design challenges in cloud.	CO2	K1
4	Differentiate between over provisioning and under provisioning.	CO2	K2
5	List the seven security issues with respect to cloud computing vendor.	CO3	K2
6	What are the service models available in cloud computing?	CO3	K1
7	What are the major roles within SOA?	CO4	K1
8	Define the advantages of using the cloud storage.	CO4	K2
9	List the security issues in cloud.	CO5	K2
10	Give some of the Applications of GAE.	CO5	K2

Part – B (5*13=65)

#	Question	CO	K
11	a) Illustrate in detail about parallel and distributed computing.	CO1	K4
	(OR)		
	b)i) Give the importance of cloudcomputing. ii)List the core features of cloudcomputing.	CO1	K3
12	a) Explain in detail about the characteristics and features of SOA.	CO2	K2
	(OR)		
	b) Discuss in detail about the taxonomy of virtualization techniques	CO2	K4
13	a) Describe Cloud deployment models with neat diagrams.	CO3	K2
	(OR)		
	b) Compare: Public. Private and Hybrid clouds.	CO3	K3

14	a) Discuss different types of resourceprovisioning.	CO4	K3
	(OR)		
	b) Explain in detail about Global Exchange of Cloud Resources.	CO4	K3
15	a)Explain Cloud federation, benefits and implementation with neat diagram.	CO5	K4
	(OR)		
	b)i) Discuss aboutOpenStack	CO5	K4
	ii)Describe in detail about on Hadoopframework.		

Part – C (1*15=15)

16	a)Integrate Map and Reduce functions, and explain how Input Splitting can be performed in HadoopFramework.	CO5	K5
	(OR)		
	b)Explain the baseline Identity and access Management(IAM) factors to be practiced by the stakeholdersof cloud services and common key privacy issues likely to happen in the environment	CO5	K5

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
CS8792 CRYPTOGRAPHY AND NETWORK SECURITY

Dept: CSE **Semester: VII**
Date: 07.10.2021   **Time: 90 Minutes**   **Max Marks: 50**
Answer ALL Questions

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Understand the fundamentals of networks security, security architecture, threats and vulnerabilities

CO2: Apply the different cryptographic operations of symmetric cryptographic algorithms

PART - A (5*2=10)

1	List the categories of passive attacks and active attacks	CO1	K 1
2	What is the difference between a block cipher and a stream cipher?	CO1	K1
3	What is Steganography?	CO1	K2
4	Find gcd(1970,1066) using Euclid's algorithm	CO1	K2
5	Define DES.	CO1	K1

PART - B (2*13 = 26)

6	**a)** Describe:
	    i. Playfair cipher
	    ii. Vignere cipher
	    iii. Railfence cipher.
		CO1	K4

	(OR) **b)** Perform encryption and decryption using Hill cipher for the following. Message: PEN and key: ACTIVATED.	CO1	K2
7	**a)** Explain Data Encryption Standard in detail.	CO1	K4
	(OR)		
	b) Discuss the properties that are to be satisfied by Groups, Rings and Fields.	CO1	K4

PART - C (1*14=14)

8	Encrypt the following using play fair cipher using the keyword MONARCHY. "SWARAJ IS MY BIRTH RIGHT" – use X for blank spaces.	CO1	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8791- CLOUD COMPUTING

Dept: CSE   **Semester:** VII

Date: 27.10.2021   **Time:** 1.5 Hours   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3: Knowledge on the various issues in cloud computing.

CO4: Familiar with the lead players in cloud.

Part – A (5*2=10)

1	What are the different roles of cloud provider?	CO3	K 1
2	Enlist the pros and cons of storage as a service.	CO3	K1
3	What are different risks in cloud storages?	CO3	K1
4	Differentiate between authentication and authorization.	CO4	K2
5	How can the data security be enforced in cloud?	CO4	K3

Part – B (2*13=26)

6	a) List the cloud deployment models and give a detailed note about them.	CO3	K3
	(OR)		
	b)Illustrate the cloud delivery models in detail..	CO3	K3
7	a)What is the purpose of IAM ? Describe its functional architecturewith an illustration.	CO4	K3
	(OR)		
	b)Write detailed note on Resource Provisioning and Resource Provisioning Methods.	CO4	K4

Part – C (1*14=14)

8	a)Explain in brief significance of Amazon S3 in cloud computing.	CO3	K5
	(OR)		
	b)Explain different Security Standards used in cloud computing.	CO4	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8792-CRYPTOGRAPHY AND NETWORK SECURITY

Dept: CSE   **Semester:** VII

Date: 25.11.2021   **Time: 3 hours**   **Max Marks:**100

Answer ALL Questions

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Understand the fundamentals of networks security, security architecture, threats and vulnerabilities

CO2: Apply the different cryptographic operations of symmetric cryptographic

CO3: Apply the different cryptographic operations of public key cryptography.

CO4: Apply the various Authentication schemes to simulate different applications.

CO5: Understand various Security practices and System security standard

PART - A (10 * 2 = 20)

1	What is the difference between public key and private key algorithms?	CO1	K 1
2	List out the ingredients of public key encryption scheme.	CO1	K1
3	List any 2 application of x.509 certificate.	CO1	K2
4	How digital signature differ from authentication protocols?	CO1	K2
5	What is a hash in cryptography?	CO1	K1
6	What are the types of certificates?	CO2	K1
7	What is S/MIME?	CO2	K1
8	What are the applications involved in the IP security?	CO2	K2
9	What is logic bomb?	CO2	K1
10	Compare AH and ESP.	CO2	K3

PART - B (5 *13 = 65)

11	a) i.Write short notes on : Fermet and Eulers theorem with examples? (8) ii. Write about various key distribution techniques. (5) (OR)	CO1	K4
	b) Explain the basic concepts of RSA in detail. Perform encryption and decryption using RSA algorithm for p=7, q=11,e=7 and M=9.	CO1	K4
12	a) Explain in detail about SHA 512. (OR)	CO2	K4
	b) Discuss the concepts of Direct Digital Signature.	CO2	K4
13	a) Present your idea about MAC (Message Authentication Code) in detail.	CO3	K2
	(OR)		
	b) Describe the concept of Hash functions	CO3	K2

14	a)Explain Pretty Good Privacy (PGP) in detail?	CO4	K2
	(OR)		
	b)Write in detail about IPSec architecture and services offered by it.	CO4	K3
15	a) Write in detail about Firewalls.	CO5	K2
	(OR)		
	b) Explain elaborately about Intruders	CO5	K2

PART - C (1 * 15 = 15)

| 16 | i) Write in detail about Diffie- Hellman key exchange.　　(10)
ii) Users Alice and Bob use the Diffie –Hellman key exchange technique with a common prime q = 83 and a primitive root alpha = 5.
　i] If Alice has a private key X_A = 6, what is Alice's public key Y_A?
　ii] If Bob has private key X_B = 10,what is bob's public key Y_B?
　iii] What is the shared secret key?　　　　(5) | CO1 | K4 |

SUBJECT INCHARGE

HOD

ST. ANNE'S COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
MG8591 – PRINCIPLES OF MANAGEMENT

Dept : CSE **Semester :** VII

Date : 14.11.2022 **Time:** 1 Hr. 30 Min **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4-Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Able to have clear understanding of managerial functions like leading.

CO2: Able to have clear understanding of managerial functions like controlling and have same basic knowledge on international aspect of management

Part – A (05*2=10)

1	What is Job Enrichment?	CO1	K6
2	List the different types of communication flow.	CO1	K1
3	What is budgetary control?	CO2	K1
4	What is the purpose of PERT?	CO2	K4
5	What do you understand by productivity?	CO2	K2

Part – B (2*13=26)

6	a) What are the various barriers to communication? How will you overcome them?	CO1	K5
	(OR)		
	b) Explain any two motivation theories of your choice.	CO1	K2
7	a) Explain the various control techniques.	CO2	K2
	(OR)		
	b) Discuss the impact of Information Technology on Management Control.	CO2	K4

Part – C (1*14=14)

8	a) Case Study
	    Modern Manufacturing Company has been using a budgetary control system for the last three years. When asked to explain the system, Mr John, the managing director of the company, observed: "We're pretty flexible in our budgetary system. Every manager is given a total amount that he or she can spend for the next year. We don't care how it is used as long as the total isn't exceeded and organizational objectives are achieved.
	    i) Discuss the merits and demerits of the company's approach to budgeting. (8)
	    ii) Do you agree or disagree with this approach? Explain your view. (7)
		CO2	K4

SUBJECT IN-CHARGE

HOD

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ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
CS8078 –GREEN COMPUTING

Dept: CSE   **Semester** : VIII

Date: 19.05.2022   **Time: 90** Minutes   **Max Marks:** 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO3:Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.

CO4:Understand the ways to minimize equipment disposal requirements .

PART - A (10 * 2 = 20)

1	Define Virtualization.	CO3	K1
2	What is telecommuting?	CO3	K1
3	List the advantages of material Recycle.	CO3	K2
4	Define Green Asset	CO4	K2
5	What are the 4 dimensions that need to be applied for Green Enterprise Transformation	CO4	K1

PART - B (5 * 13 = 65)

11	**a)** Explain in detail about virtualization and its types.	CO3	K2
	(OR)		
	b) Describe about telecommuting	CO3	K2
12	**a)** Explain in detail about socio-cultural aspects of green IT	CO4	K3
	(OR)		
	b) Write about Green Tranformation Process	CO4	K2

PART - C (1 * 15 = 15)

16	**a)** Explain about in detail in teleconferencing and teleporting.	CO3	K2
	(OR)		
	b) Write about Green Data Centers	CO3	K3

SUBJECT IN-CHARGE   **HOD**

Dept: CSE   **Semester : VIII**

Date: 26.04.2022   **Time: 90** Minutes   **Max Marks:** 50

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
                                                    K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1:Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.
CO2: Enhance the skill in energy saving practices in their use of hardware.

PART - A (10 * 2 = 20)

1	Define Green Computing.	CO1	K1
2	What is meant by 3 R's?	CO1	K1
3	List the 5 M's of carbon metrics.	CO1	K2
4	Define Green Asset	CO1	K2
5	What is Green Business Process Management (GBPM)?	CO1	K1

PART - B (5 * 13 = 65)

6	a) Explain in detail about Carbon Foot print.	CO1	K4
	(OR)		
	b) Explain in detail about Environmentally Responsible Business System (ERBS)	CO1	K2
7	a)Explain in detail about Green Asset	CO1	K4
	(OR)		
	b) Explain about Green Enterprise Architecture(GEA).	CO1	K4

PART - C (1 * 15 = 15)

8	a) Explain about Green IT Drivers, Dimensions and Goals.	CO2	K2
	(OR)		
	b) Write about Green Data Centers	CO2	K3

SUBJECT IN-CHARGE   **HOD**

Dept: CSE   **Sem:** VIII

Date: 25.04.2022   **Time:** 90 Mins   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4-Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: As a student they must know the concept and importance of engineering ethics.

CO2: Aware about the overall ethical aspects of engineering.

Part – A (05*2=10)

1	Write the difference between ethics, morale and values.	CO1	K2
2	What are the general characteristics of values?	CO1	K1
3	What are the two important ways of building courage?	CO1	K1
4	List the theories about right action.	CO2	K1
5	State the three types of Enquires.	CO2	K2

Part – B (2*13=26)

6	**a)** Write the need and importance of studying ethics and how far the study of ethics improves the behaviour of an individual and boosts the organization culture.	CO1	K5
	(OR)		
	b) What is service learning? Why service learning is important? Explain the characteristics of Service Learning	CO1	K2
7	**a)** Write the various Moral theories and discuss in detail the Gilligen's theory.	CO2	K2
	(OR)		
	b) Discuss the professional roles played by an Engineer..	CO2	K4

Part – C (1*14=14)

8	a) Discuss in detail how far the Yoga and Mediation improves ones personality and help to achieve professional excellence and stress management.	CO2	K4
	(OR)		
	b) What is meant by moral autonomy? Discuss the factors influencing a person's concern and the skills required to improve Moral Autonomy.		

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II

GE8076 - PROFESSIONAL ETHICS IN ENGINEERING

Dept: CSE   **Sem:** VIII

Date: 18.05.2022   **Time:** 90 Mins   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply,
K4-Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO3: Able to apply the ethics in engineering.
CO4: Insight the responsibilities in the society.

Part – A (5*2=10)

1	What are the elements of informed consent?	CO3	K2
2	What are the merits of standardized experimentation?	CO3	K1
3	What are the general features of morally responsible engineers?	CO3	K1
4	Write the advantages of collective bargaining.	CO4	K1
5	Define Safety. How is it related to risk?	CO4	K2

Part – B (2*13=26)

6	**a)** Write the need and importance of studying ethics and how far the study of ethics improves the behaviour of an individual and boosts the organization culture.	CO3	K5
	(OR)		
	b) What is service learning? Why service learning is important? Explain the characteristics of Service Learning	CO3	K2
7	**a)** Write the various Moral theories and discuss in detail the Gilligen's theory.	CO4	K2
	(OR)		
	b) Discuss the professional roles played by an Engineer..	CO4	K4

Part – C (1*14=14)

8	a) What are intellectual property rights? Explain the elements of Intellectual Property rights in detail and benefits of IPRS. **(OR)** b) What is research ethics? Discuss the models of research ethics with suitableexample.	CO3	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8078-GREEN COMPUTING

Dept: CSE   **Semester:** VI II

Date: 07.06.2022   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY : K-Level [K1-Remember, K2-Understand, K3-Apply,
K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1:Acquire knowledge to adopt green computing practices to minimize negative impacts on the environment.
CO2: Enhance the skill in energy saving practices in their use of hardware.
CO3:Evaluate technology tools that can reduce paper waste and carbon footprint by the stakeholders.
CO4:Understand the ways to minimize equipment disposal requirements .

PART - A (10 * 2 = 20)

1	Define Green Computing?	CO 1	K1
2	List out the most significant constituents of GHG's?	CO 1	K1
3	Define Green Data Centers.	CO 2	K2
4	What is Green Business Process Management (GBPM)?	CO 2	K2
5	Define Virtualization.	CO 3	K1
6	What are the advantages of teleconferencing in promoting green environment?	CO 3	K1
7	Define Green washing	CO 4	K2
8	What is GET?	CO 4	K1
9	What are the 4 major phase of transformation in Green Mead Hospital?	CO 5	K2
10	What are the GET areas in AuPack?	CO 5	K1

PART - B (5 * 13 = 65)

11	a) Explain in detail about Green IT business and environment ?	CO1	K2
	(OR)		
	b) Explain in detail about Environmentally Responsible Business?	CO1	K2
12	a) Explain about Green Enterprise Architecture (GEA) and Green Solution Architecture(GSA) (OR)	CO1	K2
	b) Explain in detail about Green Assets	CO1	K2
13	a) Explain in detail about virtualizing of IT Systems?	CO1	K2
	(OR)		
	b) Explain in detail about Green Grid Framework.	CO1	K2
14	a) Explain about Green Enterprise Transformation Roadmap.	CO	K

	(OR)		2	2
	b) Write in detail about socio-cultural aspects of Green IT..		CO 2	K 2
15	a) Explain in detail about the guidelines for preliminary green investigation, SWOT analysis of Good Mead Hospital.		CO 2	K 2
	(OR)			
	b) List out some of the case study scenarios for trials runs to experiment with their Green IT Stragies.		CO 2	K 2

PART - C (1 * 15 = 15)

16	a) Explain AuPack Scenario, strategic approach and SWOT in Green IT.	CO 2	K2
	(OR)		
	b) Briefly explain about Telecom Scenario and SWOT for ZeeTel Telecom services	CO 2	K3

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
CS8791 - CLOUD COMPUTING

Dept: CSE
Date: 20.11.2021

Time: 3 Hours

Semester: VII
Max Marks: 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Understand the concept of cloud computing.

CO2: Appreciate the evolution of cloud from the existing technologies.

CO3: Knowledge on the various issues in cloud computing.

CO4: Familiar with the lead players in cloud.

CO5: emergence of cloud as the next generation computing paradigm.

Part – A (10*2=20)

1	List the main characteristics of cloud computing.	CO1	K1
2	Differentiate between Public cloud and Private Cloud.	CO1	K2
3	List the six architectural design challenges in cloud.	CO2	K1
4	Differentiate between over provisioning and under provisioning.	CO2	K2
5	List the seven security issues with respect to cloud computing vendor.	CO3	K2
6	What are the service models available in cloud computing?	CO3	K1
7	What are the major roles within SOA?	CO4	K1
8	Define the advantages of using the cloud storage.	CO4	K2
9	List the security issues in cloud.	CO5	K2
10	Give some of the Applications of GAE.	CO5	K2

Part – B (5*13=65)

11	a) Illustrate in detail about parallel and distributed computing.	CO1	K4
	(OR)		
	b)i) Give the importance of cloudcomputing. ii)List the core features of cloudcomputing.	CO1	K3
12	a) Explain in detail about the characteristics and features of SOA.	CO2	K2
	(OR)		
	b) Discuss in detail about the taxonomy of virtualization techniques	CO2	K4
13	a) Describe Cloud deployment models with neat diagrams.	CO3	K2
	(OR)		
	b) Compare: Public. Private and Hybrid clouds.	CO3	K3

14	a) Discuss different types of resourceprovisioning.	CO4	K3
	(OR)		
	b) Explain in detail about Global Exchange of Cloud Resources.	CO4	K3
15	a)Explain Cloud federation, benefits and implementation with neat diagram.	CO5	K4
	(OR)		
	b)i) Discuss aboutOpenStack	CO5	K4
	ii)Describe in detail about on Hadoopframework.		

<u>Part – C (1*15=15)</u>

16	a)Integrate Map and Reduce functions, and explain how Input Splitting can be performed in HadoopFramework.	CO5	K5
	(OR)		
	b)Explain the baseline Identity and access Management(IAM) factors to be practiced by the stakeholdersof cloud services and common key privacy issues likely to happen in the environment	CO5	K5

SUBJECT IN-CHARGE

HOD

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ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8352 SIGNLAS AND SYSTEMS

Dept : ECE   **Semester :** III
Date : 07.08.2019   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: To be able to determine if a given system is linear/causal/stable
CO2: Capable of determining the frequency components present in a deterministic signal
CO3: Capable of characterizing LTI systems in the time domain and frequency domain
CO4: To be able to compute the output of a Z Transfom and analyze its properties
CO5: To be able to compute the output of an LTI system in the time and frequency domains

Part – A (10*2=20)

1	Define DT signal	CO1	K1
2	Define unit step, ramp and delta functions for CT	CO1	K1
3	State the relation between step, ramp and delta functions.	CO1	K1
4	Define deterministic and random signals	CO1	K1
5	Compare power and energy signals.	CO1	K4
6	Compare double sided and single sided spectrums	CO2	K4
7	State Dirichlets conditions	CO2	K1
8	State the conditions for the existence of fourier series	CO2	K1
9	Define laplace transform	CO2	K1
10	State initial value theorem	CO2	K1

Part – B (5*13=65)

11	(a) Check whether the following signals are periodic/aperiodic signals. (13)
	     (i)$x(n) = 3 + \cos(\pi/2n) + \cos 2n$
	     (ii) $x(n) = \sin(6\pi/7\, n+1)$.
		CO1	K4

	(b) Define energy & power signals. Find whether the signals $x(n) = (1/2)n\, u(n)$ is energy or power signals and calculate their energy and power. (6)	CO1	K4
12	(a)Check the following for linearity, time invariance, causality and Stability. $(x(n) = (n) + (n + 1)\, 8.$ (7)	CO1	K4

	(b) Determine the properties viz linearity, causality, time invariance and dynamicity of the given systems.
	     i) $y(t) = d^2y/dt^2 + 3tdy/dt + y(t) = x(t)$
	     ii) $y_1(n) = x(n^2) + x(n)$
	     iii) $y_2(n) = \log_{10} x(n)$ (13)
		CO1	K5

13	(a).i) Determine whether the signals x (t) = sin 20πt + sin 5πt is periodic and if it is periodic find the fundamental period? (6)		CO1	K5
	ii) Discuss various forms of real and complex exponential signals with graphical representation. (7)		CO1	K2
	(b). i). Distinguish between Fourier series Analysis and Fourier Transforms . (7)		CO1	K2
	ii). Properties of fourier transform. (6)		CO1	K2

14	(a).i). Find the Laplace Transform of the following. (7)
	    a) $(t) = (t-2)$
	    b) $(t) = t^2 e{-2}(t)$
			CO2	K4

	ii) Find the Fourier Transform of Rectangular pulse. Sketch the signal and Fourier transform. (6)		CO2	K4
	(b). i). Find out the inverse Laplace Transform of (4) X(S)=(s-2)/s(s+1)3		CO2	K5
	ii) What are the two types of Fourier representations? Give the relevant mathematical representations. (4)		CO2	K2
	iii) Solve the differential equation: (5) d2 y(t)/dt+4d(y)/dt+5y(t)=5x(t) and x(t) = u(t)		CO2	K4
15	(a) State and Prove the properties of Laplace Transforms. (13)		CO2	K2
	(b).State and prove the properties of Fourier Transform. (13)		CO2	K2

Part – C (1*15=15)

	(a).i) Find the Laplace transform of half wave rectifier with amplitude A overtime period 0 to π. (5)		CO2	K4
	ii) Find the inverse Laplace transform of F(s) = S-2/S(S+1)³. (10)		CO2	K4

16	(b).Distinguish between the following. (15)
	    i. Continuous time signal and discrete time signal
	    ii. Unit step and Unit Ramp functions.
	    iii. Periodic and Aperiodic Signals.
	    iv. Deterministic and Random Signals.
			CO2	K2

SUBJECT IN-CHARGE

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC8352 SIGNALS AND SYSTEMS

Dept : ECE   **Semester** : III
Date : 18.09.2019   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: To be able to determine if a given system is linear/causal/stable
CO2: Capable of determining the frequency components present in a deterministic signal
CO3: Capable of characterizing LTI systems in the time domain and frequency domain
CO4: To be able to compute the output of a Z Transfom and analyze its properties
CO5: To be able to compute the output of an LTI system in the time and frequency domains

Part – A (10*2=20)

1	What is the impulse response of the system y(t)= x(t-to).	CO3	K1
2	Define eigen value and eigen function of LTI-CT system	CO3	K1
3	Give four steps to compute convolution integral.	CO3	K1
4	What is the relationship between input and output of an LTI system?	CO3	K1
5	Find the Fourier Transform of impulse response.	CO3	K4
6	Define poles.	CO4	K1
7	If u(n) is the impulse response of the system, what is its step response?	CO4	K1
8	What are all the blocks are used to represent the CT signals by its samples?	CO4	K1
9	Mention the types of sampling	CO4	K1
10	What is the condition for avoid the aliasing effect?	CO4	K1

Part – B (5*13=65)

11	(a).(i)Realize the following in indirect form II $d^3y(t)/dt^3+4d^2y(t)/dt^2+7dy(t)/dt + 8y(t) = 5 d^2x(t)/dt^2+ 4dx(t)dt+ 7 x(t)$ (6)	CO3	K4
	(ii)An LTI system is defined by the differential equation $d^2y(t)/dt^2 – 4dy(t)/dt + 5y(t) = 5 x(t)$. Find the response of the system y(t) for an input x(t) = u (t), if the initial conditions are $y(0) = 1$; $(dy(t) / dt) \big|_{t=0} = 2$. (7)	CO3	K5
	(b) A system is described by the differential equation $d^2y(t)/dt^2+6dy(t)/dt + 8y(t) = dx(t)dt + x(t)$. Find the transfer function and output signal y(t) for x(t) = δ(t). (13)	CO3	K5
12	(a). Realize the given system in parallel form $H (s) = s(s+2)/ s^3+8s^2+19s+12$. (13)	CO3	K4

	(b). Verify whether the following systems are BIBO stable, causal or not. h(t) = 1/RC e$^{-t/RC}$ for t $\geq$ 0 and 0 for t<0. iii) y_2 (n) = $\log_{10}$ x(n) (13)		CO3	K5
13	a) .Convolve the following signals x(t) e^{-3t}u(t) h(t)= u(t + 3) (13)		CO3	K5
	(b). State and prove Sampling theorem. (13)		CO3	K2
14	(a). (i)What is aliasing? Explain the steps to be taken to avoid aliasing. (6)		CO4	K1
	(ii) Consider an analog signal x(t) = 5 cos 200 π t. i) Determine the minimum sampling rate to avoid aliasing. ii) If sampling rate Fs = 400 Hz. What is the DT signal after sampling? (7)		CO4	K5
	(b). Find the discrete -time Fourier transform of the following (i) x(n) = {1,-1,2,2} (ii)X(n) = 2^nu(n) (iii)X(n) = 0.5^n u(n) + 2^{-n}u(-n-1) (13)		CO4	K4
15	(a). State and prove any four properties of z -transform. (13)		CO4	K2
	(b).(i) Find the inverse z-transform of the function x(z) = $(1+z^{-1})/(1-(2/3z^{-1}))^2$ ROC IzI > 2/3 (7)		CO4	K4
	(ii)Find the inverse LT of $(s+4)/2s^2+5s+3$, Re[s]>-1 (6)		CO4	K4

Part – C (1*15=15)

16	(a). Find the Z transform and sketch the ROC of the following sequence x[n] = 2^n u[n]3^n u(- n - 1). (15)		CO4	K4
	(b). Find the response y(t) of a continuous time system using Laplace transform with transfer function H(S) = 1/ (S+1)(S+2)for an input x(t)= e^{-t} u(t). (15)		CO4	K4

SUBJECT IN-CHARGE

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
EC8491 - COMMUNICATION THEORY

Dept: ECE   **Semester** : IV

Date: 07.02.2020   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Design AM communication systems

CO2: Design Angle modulated communication systems

CO3: Apply the concepts of Random Process to the design of Communication systems

CO4: Analyze the noise performance of AM and FM systems

CO5: Gain knowledge in sampling and quantization

Part – A (10*2=20)

1	What is modulation? What is the need for modulation?	CO1	K1
2	A message signal has a bandwidth of W. Write the message signal bandwidth for DSB-SC and SSB-SC.	CO1	K1
3	What are the characteristics of super heterodyne receiver?	CO1	K1
4	What are the properties of Hilbert Transform?	CO1	K1
5	For an AM system the instantaneous value of carrier and modulating signal are 60 sin ωct and 40 sin ωmt respectively. Determine the modulation index.	CO1	K1
6	Write the Carson's rule.	CO2	K1
7	How is narrow band FM signal distinguished from wide band FM?	CO2	K1
8	List the properties of the Bessel function.	CO2	K1
9	Find the power spectral density of a WSS random signal x (t) which has auto correlation r (t).	CO2	K3
10	A carrier signal is frequency modulated by a sinusoidal signal of 5Vpp and 10 kHz. If the frequency deviation constant is 1 kHz/V, determine the maximum frequency deviation and state whether the scheme is narrow band FM or wide band fm.	CO2	K3

Part – B (5*13=65)

11	(a) (i) Explain the phase shift method of generation of SSB SC signal with net block diagram. (7)	CO1	K1
	(ii) Define the need of VSB modulation technique in TV broadcasting. Also sketch the frequency spectra? (6)	CO1	K1
	(b) Discuss the detection process of DSB-SC and SSB-SC using coherent detector. Analyze the drawback of the suggested methodology. (13)	CO1	K1
12	(a) (i) Draw an envelope detector circuit used for demodulation of AM and explain its operation. (7)	CO1	K1
	(ii) Compare AM, SSB and VSB in terms of their bandwidth and power requirements.(6)	CO1	K1
	(b) How SSB can be generated using Weavers method? Illustrate with a neat block diagram. (13)	CO1	K1

13	(a) Obtain the expression for wide band frequency modulated signal and show that it requires infinite bandwidth. Draw the spectrum of FM signal. (13)	CO1	K1
	(b) (i) Derive an expression for a single tone narrow band FM signal with necessary diagrams draw its frequency spectrum. (7) (ii) With the phasor representation explains the foster -seeley discriminator. (6)	CO1	K1
14	(a) With relevant diagrams explain how the frequency discriminator is used as frequency demodulators? (13)	CO2	K1
	(b) i) Highlight the process involved in obtaining amplitude variation from phase variation using FM demodulator circuit? (6) (ii) Elucidate the process of FM demodulation using PLL method? (7)	CO2	K1
15	14. a) (i) Explain the Armstrong method of FM generation. (7) (ii) Explain any one direct method of FM generation. (6)	CO2	K1
	b) (i) Write about the basic principles of FM detection and explain about ratio detector. (7)	CO2	K1
	(ii) An angle modulated wave is described by v (t) =100 cos (2*10*πt + 10 cos 2000πt). Find i) power of the modulating signal, ii) maximum frequency deviation, iii) band width. (6)	CO2	K1

Part – C (1*15=15)

16	(a) Highlight how super heterodyne receiver rectifies the drawback of TRF receiver with respect to receiver sensitivity. Also explain the working of AM Superhetrodyne receiver. (15)	CO1	K1
	(b) An angle modulated signal is described by $X_C(t) = 10 \cos [2\pi(10^6)t + 0.1 \sin (10^3)\pi t]$ i) Considering Xc(t) as a PM signal with $k_p = 10$, find m(t). (4) ii)Considering Xc(t) as a FM signal with $k_p = 10\pi$, find m(t). (4) (ii) Obtain the mathematical expression for WBFM. Also compare and contrast its characteristics with NBFM. (5)	CO1	K1

SUBJECT IN-CHARGE 6.2.2020

HOD 6/2/20

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
EC8491 - COMMUNICATION THEORY

Dept: ECE
Date: 28.02.2020   **Time:** 3 Hours

Semester : IV
Max Marks: 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
CO1: Design AM communication systems
CO2: Design Angle modulated communication systems
CO3: Apply the concepts of Random Process to the design of Communication systems
CO4: Analyze the noise performance of AM and FM systems
CO5: Gain knowledge in sampling and quantization

Part – A (10*2=20)

1	Define random variable with an example?	CO3	K1
2	State central limit theorem	CO3	K1
3	Write the difference between random variable and random process.	CO3	K1
4	Define Ergodic processes.	CO3	K1
5	What is narrow band noise?	CO3	K1
6	Define noise figure.	CO4	K1
7	Define threshold effect in FM system?	CO4	K1
8	Define capture effect in FM system?	CO4	K1
9	How does pre-emphasis and de-emphasis process provide overall SNR improvement is FM systems?	CO4	K2
10	If two resistors 20K & 50K are connected at temperature 70C for a BW of 100KHz. calculate the (i) noise voltage of each resistor and (ii) when two resistors are in series (iii) resistors in parallel	CO4	K3

Part – B (5*13=65)

11	(a). (i) what is CDF and PDF? State their properties. Also discuss them in detail by giving examples of CDF and PDF for different types of random variables. (7)	CO3	K1
	(ii) List the different types of random process and give the definition. (6)	CO3	K1
	(b) State and prove four properties of Gaussian process. (13)	CO3	K1
12	(a) (i) State and explain Central Limit theorem. (7)	CO3	K1
	(ii) When is random process is said to be a strict sense stationary (SSS), wide sense stationary (WSS) and Ergodic process. (6)	CO3	K1
	(ii) Compare AM, SSB and VSB in terms of their bandwidth and power requirements.(6)	CO3	K1

	(b) Derive the input and output relationship of a random process applied through a LTI filter. (13)		CO	K1
13	(a) Define Power spectral density. Explain the properties of PSD. (13)		CO	K1
	(b) (i) Let X (t) and Y(t) be both zero mean and WSS random processes. Consider the random process z(t) = X(t) + Y(t). Determine the autocorrelation and power spectrum of z (t) if X (t) and Y (t) are jointly WSS. (7) (ii) Let X and Y are real random variables with finite second moments. Prove the Cauchy Schwarz inequality. (6)		CO	K1
14	(a) (i) Explain with derivation the effect of noise in cascaded amplifier circuit? (7)		CO	K1
	(ii) Define narrow band noise and explain the representation of narrow band noise in terms of in-phase and Quadrature components. (6)		CO2	K1
	(b) (i) (Prove that the random band pass noise signal n(t) can be expressed as n(t)= ne(t) (cos ωc(t) + ns(t)sinωc(t) ne(t)and ns(t) are low frequency band limited to ωm radians/seconds. (6)		CO2	K1
	(ii) Derive an expression for signal to noise ratio for an AM signal, with assumption that the noise added in the channel is AWGN. Compare its performance with FM system. (7)		CO2	K2
15	(a) Derive the SNR performance of DSB system and the AM system. Also prove that the output SNR in AM is at least 3dBworse than that of DSB system. (13)		CO2	K1
	b. (i) Derive the figure of merit of AM system. Assume coherent detector.		CO2	K1
	(ii) Derive the relationship between noise fig and equivalent noise temperature.(6)		CO2	K1

Part – C (1*15=15)

16	(a) (i) Two random process X (t) = A cos (ωt + θ) and Y (t) = A sin (ωt + θ) where A and ω are constants and θ is uniformly distributed random variable in (0, 2π). Find the cross correlation function. (8)			
	(ii) Discuss the properties of Auto correlation function. (7)			
	(i) Explain the noise performance of AM systems. (8)			
	(ii) Derive the SNR performance of SSB SC System. (7)			

26/2/2020

SUBJECT IN-CHARGE

HOD 26/2/20

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
EC8452 – ELECTRONIC CIRCUITS - II

Dept: ECE   **Semester** : IV
Date: 05.02.2020   **Time:** 3 Hours   **Max Marks** : 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:

CO1: To give a comprehensive exposure to all types of amplifiers and oscillators constructed with discrete components. This helps to develop a strong basis for building linear and digital integrated circuits
CO2: To study about feedback amplifiers and oscillators principles
CO3: Able to apply the ethics in Engineering.
CO4: To design oscillators
CO5: To study about turned amplifier
CO6: To understand the analysis and design of LC and RC oscillators, amplifiers, multi vibrators, power amplifiers and DC Convertors.

Part – A (10*2=20)

1	An amplifier has $A_V = 1000 \pm 100$, determine the feedback needed to keep the gain within $\pm$ 0.1% . Find $A_{Vf.}$	CO1	K3
2	The voltage gain without negative feedback is 40 dB. What is the new voltage gain if 3% negative feedback is introduced?	CO1	K3
3	Mention the three networks that are connected around the basic amplifier to implement feedback concept.	CO2	K1
4	List the five characteristics of an amplifier which are modified by negative feedback.	CO2	K1
5	List four basic types of feedback?	CO1	K1
6	Find the operating frequency of a Colpitts oscillator. If $C_1 = 0.001$ μF, $C_2 = 0.01$ μF and L = 15 mH.	CO4	K3
7	Give any two examples for high frequency and low frequency oscillators?	CO4	K1
8	What is the difference between amplifier and oscillator?	CO1	K1
9	What is a resonant circuit oscillator?	CO4	K1
10	What are the factors needed to choose type of oscillators?	CO4	K1

Part – B (5*13=65)

11	a)Draw the block diagram of 4 types of feedback topologies and compare them write gain, input & output resistance. Give one example for each. (13)	CO2	K1

	b)Explain with the neat diagram the two stage Voltage series feedback amplifier and determine the $A_v, A_{vf.}$. (13)	CO2	K2
12	a)With block diagram of current series feedback and derive the expressions for Rif and Rof. (13)	CO1	K2
	b)Draw the circuit diagram of voltage shunt feedback amplifier and derive the expressions for Rif and Rof. (13)	CO2	K2
13	a)With a neat diagram explain about RC phase shift oscillator using BJT and derive the expression for frequency of oscillation and condition of oscillation. Also discuss about frequency stability of an oscillator. (13)	CO3	K2
	b)What is a Wien Bridge? How is it used as an oscillator? Derive the necessary Equations. (13)	CO3	K2
14	a)Write briefly about barkhausen criterion? (13)	CO2	K1
	b)Explain the working of a Hartley oscillator with a neat circuit diagram and derive the Frequency of oscillation. (13)	CO4	K2
15	a) (i)With a neat diagram explain about Colpitt's oscillator & derive the expression for frequency of oscillation and condition of oscillation. b).(i)If C1 and C2 are 200PF and 50PF respectively .calculate the value of inductance for producing oscillations at 1MHZ in the colpitt's oscillator. (6) (ii)In colpitt's oscillator $C_1 = 1$ µF and $C_2 = 0.2$ µF. If the frequency of oscillation is 10 kHz, find the value of inductor. Also find the required gain for sustained oscillation. (7)	CO5	K3

Part – C (1*15=15)

	a).Give the equivalent circuit of the crystal and explain the principle behind crystal oscillator. With a neat diagram, explain the operation of the pierce crystal oscillator. (15)	CO2	K2
8	b.(i)Explain Nyquist criterion to analyze the stability of feedback amplifiers. (8) (ii)Explain loop gain and transfer function of feedback amplifiers. (7)	CO2	K2

V. Whuthsun
3/2/2020
SUBJECT IN-CHARGE

HOD
5/2/20

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8501 – DIGITAL COMMUNICATION

Dept : ECE **Semester : V**
Date : 07.09.2020 **Time: 1 Hour 30 Mts** **Max Marks: 50**

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
  CO1: Design PCM systems
  CO2: Design and implement base band transmission schemes
  CO3 Design and implement band pass signaling schemes
  CO4: Analyze the spectral characteristics of band pass signaling schemes and their noise performance
  CO5: Design error control coding schemes

Part – A (5*2=10)

1	State Shannon's Channel capacity theorem.	CO1	K1
2	Define entropy and find the entropy of a discrete memory less source with probability $s1=1/2$, $s2=1/4$ and $s3=1/4$.	CO1	K3
3	State the properties of mutual information	CO1	K2
4	Draw the line encoding waveforms for the binary data 10110001 using (i) Unipolar NRZ (ii) Bipolar NRZ.	CO2	K3
5	What is the need of prediction filtering?	CO2	K1

Part – B (2*13=26)

6	a)Derive Shannon - Hartley theorem for the channel capacity of a continuous channel having an average over limitation and perturbed by an additive band - limited white Gaussian noise. (13)	CO1	K2
	b)The source has five outputs symbols denoted by (M1 M2 M3 M4 M5) with the following set of probabilities {0.41, 0.19, 0.16, 0.15, 0.09}. Encode the source using Shannon fano algorithm and determine the coding efficiency, Redundancy. (13)	CO1	K4
7	a)Draw the block diagram of the DPCM transmitter and receiver with predictor and explain. What are the advantages of using Predictor in DPCM? (13)	CO2	K2
	b)Describe delta modulation system in detail with a neat diagram and illustrate the two forms of quantization error in delta modulation? (13)	CO2	K2

Part – C (1*14=14)

8	a) Consider a discrete memoryless source that emits the symbols $(x_1,x_2,x_3,x_4,x_5,x_6,x_7)$ with corresponding probabilities {0.08,0.2,0.12,0.15,0.03,0.02,0.4}. Construct a binary optimal code using huffmann procedure for this source. What is the efficiency of this code? (14)	CO1	K5
	b)The two binary random variables X and Y are distributed according to the joint PMF given by P(X=0, Y=1) = 1/4; P(X = 1, Y=1)=1/2; P(X=1,Y=1)=1/4; Determine H(X,Y), H(X), H(Y), H(X/Y) and H(Y/X). (14)	CO1	K5

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC8501 – DIGITAL COMMUNICATION

Dept : ECE
Date : 23.09.2020
Time: 1 Hour 30 Mts
Semester : V
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Design PCM systems
CO2: Design and implement base band transmission schemes
CO3 Design and implement band pass signaling schemes
CO4: Analyze the spectral characteristics of band pass signaling schemes and their noise performance
CO5: Design error control coding schemes

Part – A (5*2=10)

1	What is meant by slope overload distortion? How it can be avoided?	CO3	K1
2	Draw the line encoding waveforms for the binary data 10110001 using (i) Unipolar NRZ (ii) Bipolar NRZ.	CO3	K3
3	What is the need of prediction filtering?	CO3	K2
4	Write the limitations of delta modulation.	CO4	K2
5	List few digital modulation schemes used for voice communication?	CO4	K1

Part – B (2*13=26)

6	a)Draw the block diagram of the DPCM transmitter and receiver with predictor and explain. What are the advantages of using Predictor in DPCM? (13)	CO3	K2
	b)Describe the delta modulation system in detail with a neat block diagram. Also, illustrate the two forms of quantization error in delta modulation (13)	CO3	K3
7	a)Explain how Adaptive delta modulation performs better and gains more SNR and delta modulation (13)	CO4	K2
	b)i)Draw the block diagram of ADPCM system and explain it function? (8) ii)Write the short notes on LPC. (5)	CO4	K2

Part – C (1*14=14)

8	a)Derive the power spectral density of bipolar NRZ data format and list its properties? (14)	CO3	K4
	b)What is need for line shaping of signals? Derive the PSD of a unipolar RZ and NRZ, line code and compare their performance? (14)	CO3	K3

SUBJECT IN-CHARGE 21/9/2020

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
EC8501 – DIGITAL COMMUNICATION

Dept : ECE **Semester : V**

Date : 19.10.2020 **Time: 1 Hour 30 Mts** **Max Marks: 50**

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Design PCM systems

CO2: Design and implement base band transmission schemes

CO3 Design and implement band pass signaling schemes

CO4: Analyze the spectral characteristics of band pass signaling schemes and their noise performance

CO5: Design error control coding schemes

Part – A (5*2=10)

1	What is ISI? What are the causes of ISI?	CO4	K1
2	What is meant by ISI in communication system? How can it be minimized?	CO4	K3
3	State Nyquist second and third criteria to realize zero ISI?	CO4	K2
4	What is the unique characteristics of convolutional codes which makes it different from linear block codes?	CO5	K2
5	The generator polynomial G(D) for a (7,4) cyclic code is G(d)=1+D2 +D3. Find the code vector for data [1010]?	CO5	K4

Part – B (2*13=26)

6	a)What is meant by eye pattern? What are the parameters observed from the eye pattern? Explain with the help of suitable illustration. (13)	CO4	K2
	b)The binary data 00 10 11 0 is applied to a duobinary system. Construct the duobinary coder output and corresponding receiver output. Assume that there is a precoder at the input. (13)	CO4	K4
7	a)Consider the (6,3) linear block code whose generated matrix is given below. (13) G = 1 1 1 1 0 0 1 1 0 0 1 0 1 0 1 0 0 1 i. Find parity check matrix (3) ii. Find all the code words (5) iii. Minimum distance of the code (2) iv. How many errors can be detected and corrected. (3)	CO5	K4
	b)The generator polynomial of a (7, 4) cyclic code is given by $g(X) = 1 + X + X3$. (13) (i). Find the generator matrix and parity check matrix of the code in systematic form. (5) (ii). Draw the encoder circuit for this code. (2) (iii)Find the code word for the message (1011). (6)	CO5	K5

Part – C (1*14=14)

8	a)For a systematic linear block code ,the three parity check digits p_1,p_2,p_3 are given by(13) $$PK_{n-k} = \begin{pmatrix} 1 & 0 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 0 \\ 0 & 1 & 1 \end{pmatrix}$$ a. Construct generated matrix (3)	CO5	K5

	b. Construct code generated by the matrix (3) c. Determine error correcting capacity (3) d. Decode the received words with an example (5)		

	b)A rate 1/2 convolutional encoder with constraint length of 3 uses the generator sequences: g1 = (1 1 1), g2 =(1 0 1) (13)
	      (i) Draw the encoder and state diagram of the code.
	     (ii) Determine the output sequence for the message of 10011.
		CO5	K6

S. D~~~~ 17/10/2020
SUBJECT IN-CHARGE

HOD 17/10/20

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8652 WIRELESS COMMUNICATION

Dept : ECE
Date : 18.05.2021   **Time:** 1 Hour 30 Minutes   **Semester :** VI
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Characterize a wireless channel and evolve the system design specifications

CO2: Design a cellular system based on resource availability and traffic demands

CO3: Characterize different modulation techniques and its application in communication

CO4: Identify suitable signaling and multipath mitigation techniques for the wirelesschannel and system under consideration.

CO5: Design of Multiple input and Multiple output system

Part – A (5*2=10)

1	What is frequency selective fading?	CO1	K1
2	What is flat fading?	CO1	K2
3	Define coherence bandwidth	CO1	K1
4	Why is cellular concept used for mobile telephony?	CO2	K1
5	Define the grade of services.	CO2	K1

Part – B (2*13=26)

6	(a) Derive the path loss considering a Two -Ray Model for the propagation mechanismin a wireless channel. Is considering just two rays alone sufficient? Why? (13)	CO1	K3
	(b) Discuss the flat fading characteristics with relevant diagrams (13)	CO1	K1
7	(a) With a neat sketch, compute received power and path loss during the 2 ray model. (13)	CO2	K6
	(b) Describe the Operations of Cellular systems and Explain it steps with a neat sketch (13)	CO2	K5

Part – C (1*14=14)

8	(a). Give a detailed note on Doppler spread and Coherence time.(14)	CO1	K1
	(b). Explain in detail how to improve coverage and channel capacity in cellular systems (14)	CO1	K4

SUBJECT IN-CHARGE   **HOD** 18/5/21

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
EC 8073 – MEDICAL ELECTRONICS

Dept: ECE
Date: 11.09.2020

Time: 1Hour 30Minutes

Semester : VI
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:

CO1: Know the human body electro- physiological parameters and recording of bio-potentials

CO2: Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.

CO3: Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators

CO4: Comprehend physical medicine methods e.g. Ultrasonic, shortwave, microwave surgical diathermies, and bio-telemetry principles and methods

CO5: Know about recent trends in medical instrumentation.

Part – A (5*2=10)

1	List the types of bioelectric potentials.	CO1	K1
2	What are the types of electrodes used in bipolar measurement?	CO1	K1
3	Differentiate micropipette and metal microelectrode	CO1	K2
4	State Beer's law.	CO2	K3
5	What are the typical values of blood pressure and pulse rate of an adult?	CO2	K3

Part – B (2*13=26)

6	(a) Explain about ECG,EEG (13)	CO1	K1
	(b) Discuss in detail about the origin of bio potential and resting potential with necessary equation. (13)	CO1	K2
7	(a) From basic principle discuss the working of a pulmonary function analyzer. (13)	CO2	K3
	(b) Describe the working principle of electromagnetic blood flow meter. (13)	CO2	K3

Part – C (1*14=14)

8	(a) With circuit diagram explain the chopper and isolation amplifier.	CO1	K3
	(b) Discuss the different types of surface electrodes and its application.	CO1	K3

SUBJECT IN-CHARGE 9.9.2020

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC8652 WIRELESS COMMUNICATION

Dept : ECE
Date : 24.04.2021   **Time:** 1 Hours 30 Minutes   **Semester** : VI
     Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Characterize a wireless channel and evolve the system design specifications

CO2: Design a cellular system based on resource availability and traffic demands

CO3: Characterize different modulation techniques and its application in communication

CO4: Identify suitable signaling and multipath mitigation techniques for the wirelesschannel and system under consideration.

CO5: Design of Multiple input and Multiple output system

Part – A (05*2=10)

1	Define frequency reuse and how it is measured	CO3	K1
2	Define the grade of services	CO3	K1
3	Define co-channel reuse ratio?	CO3	K1
4	What is cyclic prefix?	CO4	K1
5	Why is MSK referred to as fast FSK?	CO4	K4

Part – B (2*13=26)

6	(a) Derive the expressions for Cellular CDMA schemes for both noise limited and interference limited scenario (13)	CO3	K3
	(b) Compare and Contrast the TDMA, FDMA and CDMA technique (13)	CO3	K2
7	(a) Explain channel assignment and handoff strategies in detail. (13)	CO4	K2
	(b) Describe OFDM scheme and state the reason behind using cyclic prefix in OFDM scheme. What is PAPR? Why is it' normally larger in an OFDM technique (13)	CO4	K5

Part – C (1*14=14)

8	(a). Explain GMSK transmitter and receiver with signal space diagram and give an expression for spectral efficiency. (14)	CO3	K2
	(b) Explain in detail how to improve coverage and channel capacity in cellular systems (14)	CO3	K2

SUBJECT IN-CHARGE   **HOD**

REG. NO. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
EC8652 WIRELESS COMMUNICATION

Dept : ECE
Date : 18.05.2021

Time: 1 Hour 30 Minutes

Semester : VI
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Characterize a wireless channel and evolve the system design specifications

CO2: Design a cellular system based on resource availability and traffic demands

CO3: Characterize different modulation techniques and its application in communication

CO4: Identify suitable signaling and multipath mitigation techniques for the wirelesschannel and system under consideration.

CO5: Design of Multiple input and Multiple output system

Part – A (5*2=10)

1	What is frequency selective fading?	CO1	K1
2	Mention a few techniques used to expand the capacity of a cellular system	CO2	K2
3	Define the grade of services	CO3	K1
4	Define co-channel reuse ratio	CO4	K1
5	What do you mean by cyclic prefix?	CO5	K1

Part – B (2*13=26)

6	(a) Derive the path loss considering a Two -Ray Model for the propagation mechanismin a wireless channel. Is considering just two rays alone sufficient? Why? (13)	CO4	K3
	(b) What are the factors influencing small scale fading? (13)	CO4	K1
7	(a) Each user is allocated with a unique frequency sub band for the duration of connection, whether the connection is in active or idle state. These channels are assigned on demand to users who request service. Here in this case what type of multiple access technique is being used (13)	CO5	K6
	(b)Describe the Operations of Cellular systems and Explain it steps with a neat sketch (13)	CO5	K5

Part – C (1*14=14)

8	(a). Discuss the performance of a RAKE receiver with a neat diagram. (14)	CO5	K1
	(b). Which technique uses MEA's (Multiple element antennas) at the transmitter for transmission of data streams. An original high-rate data stream is multiplexed into several parallel streams in this technique. Explain (14)	CO5	K4

SUBJECT IN-CHARGE

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
EC8073 – MEDICAL ELECTRONICS

Dept: ECE   **Semester**   : VI
Date: 28.09.2020   **Time:** 1Hour 30Minutes   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
CO1: Know the human body electro- physiological parameters and recording of bio-potentials
CO2: Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.
CO3: Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and   ventilators
CO4: Comprehend physical medicine methods eg. Ultrasonic, shortwave, microwave surgical diathermies, and   bio-telemetry principles and methods
CO5: Know about recent trends in medical instrumentation.

Part – A (5*2=10)

1	What are systolic and diastolic pressures?	CO3	K1
2	What is cardiac output? What are the methods of measurement of cardiac output?	CO3	K1
3	What is electrophoresis?	CO3	K2
4	Write the principle behind electromagnetic blood flow meters	CO4	K2
5	What are korotk off sounds?	CO4	K2

Part – B (2*13=26)

			CO	K
6	(a) i) Describe the measurement of PO2.	(7)	CO3	K1
	ii) Explain the block diagram and working of colorimeter.	(6)	CO3	K1
	(b) i) Define blood pressure. How it can be measured using Sphygmomanometer.	(7)	CO3	K2
	ii) Define the term cardiac output? How is cardiac output measured by dilution techniques?	(6)	CO3	K2
7	(a) i) What are the different types of ultrasonic blood flow meter? Explain each in detail.	(7)	CO4	K2
	ii) Briefly describe the working of temperature measurement.	(6)	CO4	K2
	(b) (i) Describe the working principle of electromagnetic blood flow meter.	(7)	CO4	K2
	(ii) Explain the measurement of respiration rate using impedance technique	(6)	CO4	K2

Part – C (1*14=14)

8	(a) Explain the working principle of pulse measurement.	(14)	CO3	K2
	(b) Explain the principle of operation of Coulter counter. What are its applications?	(14)	CO3	K2

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
EC8073 – MEDICAL ELECTRONICS

Dept: ECE
Date: 23.10.2020   **Time:** 1Hour 30Minutes
Semester : VI
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Know the human body electro- physiological parameters and recording of bio-potentials

CO2: Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc.

CO3: Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators

CO4: Comprehend physical medicine methods e.g. ultrasonic, shortwave, microwave surgical diathermies, and bio-telemetry principles and methods

CO5: Know about recent trends in medical instrumentation.

Part – A (5*2=10)

1	What are the different types of diathermies	CO4	K1
2	List the different types of physical medicine methods.	CO4	K1
3	What are the biotelemetry principles?	CO4	K2
4	What is a radio-pill? Mention the application.	CO5	K2
5	What is the modulation techniques used for biotelemetry?	CO5	K2

Part – B (2*13=26)

6	(a) Explain working principle of a surgical diathermy unit with a neat block diagram. (13)	CO4	K1
	(b) Explain working principle of a shortwave diathermy unit with a neat block diagram.(13)	CO4	K2
7	(a) With suitable diagram, explain how the ECG signal can be transmitted using single channel telemetry systems. (13)	CO5	K2
	(b) Analyze the importance of Insulin pump. (13)	CO5	K4

Part – C (1*14=14)

8	(a)Compare working principle of a Ultrasonic and Microwave diathermy unit and suggest which is better method with a neat block diagram. (14)	CO5	K5
	(b) Explain about recent trends in medical instrumentation. (14)	CO5	K6

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC 8751-OPTICAL COMMUNICATION

Dept : ECE   **Semester   :** VII
Date : 01.10.2021   **Time:** 1 hr 30 min   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
  CO1: Realize basic elements in optical fibers, different modes and configurations
  CO2: Analyze the transmission characteristics associated with dispersion and polarization techniques.
  CO3: Design optical sources and detectors with their use in optical communication system.
  CO4: Construct fiber optic receiver systems, measurements and coupling techniques
  CO5: Design optical communication systems and its networks

Part – A (5*2=10)

1	State the reasons to opt for optical communication?	CO1	K4
2	Consider a parabolic index waveguide with n1 =1.75, n2 = 1.677 and core radius 25 micro meter. Calculate the numerical aperture at the axis and at a point 20 micro meter from the axis	CO1	K3
3	Define attenuation.	CO1	K1
4	What is total internal reflection in a fiber?	CO2	K2
5	Define phase and group velocity?	CO2	K1

Part – B (2*13=26)

6	(a). (i) Discuss the signal distortion in single mode fibers. (6)	CO1	K1
	(ii)Discuss pulse broadening in graded index fibers with necessary equations. (7)	CO1	K1
	b) (i) Discuss the propagation modes in single -mode fiber. (6)	CO1	K2
	(ii) Discuss the structure of graded index fiber. (7)	CO1	K2
7	a) (i) What is meant by 'material dispersion'? Derive its expression. (6)	CO2	K1
	(ii) explain the fiber bending losses? (7)	CO2	K2
	b) Explain the phenomenon of total internal reflection (TIR) using Snell's law with figure and calculation. (13)	CO2	K1

Part – C (1*14=14)

8	a) What are fiber modes? Explain mode theory for optical fibers in detail	CO1	K3
	b) Compare Single mode fibers and Graded index fibers. Explain the requirements for fiber materials.	CO1	K4

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8702 – AD HOC WIRELESS SENSOR NETWORKS

Dept: ECE **Semester:** VII

Date: 05.10.2021 **Time:** 1.5 Hours **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Learn Ad hoc network and Sensor Network fundamentals
CO2: Understand the different routing protocols.
CO3: Have an in-depth knowledge on sensor network architecture and design issue
CO4: Understand the transport layer and security issues possible in Ad hoc and Sensor

Part – A (5*2=10)

1	What is the Difference between Cellular Network and Ad Hoc WSN?	CO1	K1
2	Define Scalability	CO1	K2
3	Write short note on different operational states of transceiver in WSN	CO1	K2
4	List the issues and challenges in designing a sensor **network**?	CO2	K4
5	What is Dynamic Voltage Scaling (DVS)?	CO2	K1

Part – B (2*13=26)

6	(a) Discuss Ad hoc wireless internet in detail.	CO1	K1
	(b) Describe the Ad Hoc on-Demand Distance Vector Routing Protocol (AODV).	CO1	K2
7	a) Explain the architecture of wireless sensor networks	CO2	K4
	b) Explain the Operation States with Different Power Consumption	CO1	K1

Part – C (1*14=14)

8	a) Explain the optimization goals and figure of merit	CO1	K3
	b) Describe the Destination sequenced distance-vector routing protocol.	CO1	K1

SUBJECT IN-CHARGE 3/10/21

HOD 3/10/21

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8701 – ANTENNA AND MICROWAVE ENGINEERING

Dept : ECE **Semester :** VII
Date : 08.10.2021 **Time:** 1 Hour 30 Mts **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Apply the basic principles and evaluate antenna parameters and link power budgets.
CO2: Design and assess the performance of various antennas.
CO3: Analyze the antenna array design.
CO4: Analyze the active and Passive Microwave Components.
CO5: Design a microwave system given the application specifications.

Part – A (5*2=10)

1	Sketch electromagnetic frequency spectrum showing the location of RF and Microwave frequency bands.	CO1	K1
2	What is the significance of G/T ratio?	CO1	K2
3	State why impedance matching(tuning) is important?	CO1	K1
4	State Huygen's Principle.	CO2	K2
5	List the different methods of feeding Microstrip antenna.	CO2	K1

Part – B (2*13=26)

6	a) Explain the various loss and gain terms considered in the microwave link budget. Also discuss on the significance of link margin and fade margin of a communication system.(13)	CO1	K2
	b) Define and describe the following parameters of an antenna $\qquad$ (13) (i) Radiation Pattern (3) (ii) Radiation intensity (3) (iii) Directivity (3) (iv) Effective aperture (4)	CO1	K2
7	a)Discuss the principle working of Parabolic reflectors. Explain the various feed techniques their relative merits and demerits. Discuss the role of f/d ratio in the parabolic reflectors. (13)	CO2	K2
	b) Explain the principles of operation of Horn antenna and discuss the various forms of Horn antenna. Obtain the design equations of Horn antenna. (13)	CO2	K2

Part – C (1*14=14)

8	a)Design a 50 to 200 MHz log periodic dipole antenna for gain corresponds to scale factor 0.8 and space factor 0.15. Assume the gap spacing at the smallest dipole is 3.6 mm. (14)	CO1	K5
	b).(i) Derive FRIIS transmission formula. (6) (ii) A radio link has a 20 W transmitter connected to an antenna of 2.5 m2 effective aperture at 5 GHz. The receiving antenna has an effective aperture of 0.5m2 and is located at a 15 Km line of sight distance from the transmitting antenna. Assuming lossless, matched antennas, find the power delivered to the receiver. (8)	CO1	K3

SUBJECT IN-CHARGE 6/10/2021

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC 8751-OPTICAL COMMUNICATION

Dept : ECE   **Semester   :** VII
Date : 27.10.2021   **Time:** 1hr 30 min   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
  CO1: Realize basic elements in optical fibers, different modes and configurations
  CO2: Analyze the transmission characteristics associated with dispersion and polarization techniques.
  CO3: Design optical sources and detectors with their use in optical communication system.
  CO4: Construct fiber optic receiver systems, measurements and coupling techniques
  CO5: Design optical communication systems and its networks

Part – A (5*2=10)

1	What is intra modal dispersion?	CO3	K2
2	Calculate the cut-off wavelength of an optical signal through a fiber with its core refractive index of 1.50 and that of cladding = 1.46.the core radius of 25µm.the normalized frequency is 2.405	CO3	K3
3	Give the application of optical amplifiers	CO3	K1
4	Compare the optical sources: LASER and LED	CO4	K2
5	What are the advantages of LED?	CO4	K1

Part – B (2*13=26)

6	(a) (i) Draw and explain surface and edge emitting LEDs. (7)	CO3	K1
	ii)Explain any two injection laser structures with neat diagrams? (6)	CO3	K1
	(b) With a neat diagram, explain the structure of LASER diode and its radiation pattern (13)	CO3	K2
7	(a) Explain the structure and working of silicon APD. (13)	CO4	K1

	(b) Explain the measurement technique used in the case of (13)
	    i) Fiber Refractive index profile
	    ii) Fiber cut-off wave length.
		CO4	K1

Part – C (1*14=14)

8	a) Draw and explain the structure of fabry-perot resonator cavity for a laser diode. derive laser diode rate equation. (14)	CO3	K2
	b) Draw and explain the operation of low impedance and high impedance FET and BJT preamplifiers.	CO3	K2

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC8702 – AD HOC WIRELESS SENSOR NETWORKS

Dept: ECE
Date: 29.10.2021   **Time:** 1.5 Hours   **Semester:** VII
                                            Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:

CO1: Learn Ad hoc network and Sensor Network fundamentals
CO2: Understand the different routing protocols.
CO3: Have an in-depth knowledge on sensor network architecture and design issue
CO4: Understand the transport layer and security issues possible in Ad hoc and Sensor

Part – A (5*2=10)

1	Draw the Super frame structure of IEEE 802.15.4?	CO3	K1
2	List the Features of PAMAS	CO3	K1
3	Draw the frame structure of LEACH	CO3	K1
4	What is difference between wormhole and black hole attacks?	CO4	K2
5	What is jamming? How to overcome it?	CO4	K4

Part – B (2*13=26)

6	(a) Explain about S-MAC protocol in WSN with neat diagram	CO3	K1
	(b) Explain the Energy efficient unicast routing protocol with an example	CO3	K2
7	(a)Explain how the security provisioning in Adhoc network differs from that in infrastructure-based network.	CO4	K2
	(a) Explain in detail about Key Management approaches which include symmetric and Asymmetric algorithms. (b) Explain about secure routing- SPINS	CO4	K2

Part – C (1*14=14)

8	(a) Explain the issues in designing a transport layer protocol for Adhoc wireless networks	CO3	K2
	(b) Explain in detail about Key Management approaches which include symmetric and Asymmetric algorithms.	CO3	K2

SUBJECT IN-CHARGE 28|10|21   **HOD** 28/0

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
OBM 752 – HOSPITAL MANAGEMENT

Dept: ECE

Date: 01.11.2021

Time: 1 Hrs. 30 min.

Semester : VII

Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
CO1: Students can able to explain the principles of Hospital administration.
CO2: Students can able to identify the importance of Human resource management.
CO3: Students can able to list various marketing research techniques.
CO4: Students can able to Identify Information management systems and its uses.
CO5: Students can able to understand safety procedures followed in hospitals

Part – A (5*2=10)

1	What is recruitment policy?	CO3	K2
2	State the advantages of Transfer policy.	CO3	K2
3	Define Training.	CO3	K2
4	What is the main function of the medical records department?	CO4	K1
5	What is CSSD?	CO4	K1

Part – B (2*13=26)

6	(a) Explain the functions of different departments in hospital. (13)	CO3	K1
	(b) Explain the types of training and what are the four main types of training that can help the job effectively? (13)	CO3	K2
7	(a) Explain the various activities involved in the Central Sterilization and Supply Department and discuss its advantages. (13)	CO4	K2
	(b) Explain the applications of telemedicine in hospitals (13)	CO4	K2

Part – C (1*14=14)

8	(a) What are the key attributes that make recruitment more effective? Discuss the various steps in selection process. (14)	CO3	K2
	(b) Explain the various services provided by the hospital to patient health care. (14)	CO3	K2

29.10.21
SUBJECT IN-CHARGE

HOD
27/6/2

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - II
EC8701 – ANTENNA AND MICROWAVE ENGINEERING

Dept : ECE
Date : 03.11.2021   **Time:** 1 Hour 30 Mts   **Semester** : VII
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
    CO1: Apply the basic principles and evaluate antenna parameters and link power budgets.
    CO2: Design and assess the performance of various antennas.
    CO3: Analyze the antenna array design.
    CO4: Analyze the active and Passive Microwave Components.
    CO5: Design a microwave system given the application specifications.

Part – A (5*2=10)

1	Distinguish between uniform and non-uniform arrays	CO3	K1
2	A uniform linear array contains 50 isotropic radiators with an inter-element spacing of $\lambda/2$. Find the directivity of broadside forms of arrays.	CO3	K3
3	Draw the radiation pattern for a linear array of two isotropic elements spaced $\lambda/2$ apart and with equal current fed in phase.	CO3	K2
4	State the principle of pattern multiplication	CO4	K2
5	Bring out the differences between the TWT & Klystron.	CO4	K1

Part – B (2*13=26)

6	a) Derive the expression for the array factor of a linear array of four isotropic element spaced $\lambda/2$ apart fed with signals of equal amplitude and phase. Obtain the directions of maxima and minima. (13)	CO3	K3
	b) Derive the expression for two element linear array and also deduce two isotropic element spaced $\lambda/2$ apart fed with signals of equal amplitude and opposite phase. Obtain the directions of maxima and minima. (13)	CO3	K3
7	a). Draw the schematic of two cavity Klystron amplifier and explain the process of velocity modulation and bunching. Also derive the equation of velocity modulation. (13)	CO4	K2
	b. With neat diagram, explain how amplification of RF wave is accomplished in Helix type TWT. (13)	CO4	K2

Part – C (1*14=14)

8	a) Explain in detail the Binomial array and derive the expression for the array factor. Also obtain the excitation coefficients of a seven element binomial array. (14)	CO3	K4
	b) Draw the cross sectional view of Magnetron tube and explain the process of bunching. Derive the expression for Hull cut off voltage. (14)	CO3	K2

SUBJECT IN-CHARGE   **HOD**

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
EC8702 – AD HOC WIRELESS SENSOR NETWORKS

Dept: ECE
Date: 23.11.2021　　　　　Time: 1.5 Hours

Semester: VII
Max Marks: 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:
- CO1: Learn Ad hoc network and Sensor Network fundamentals
- CO2: Understand the different routing protocols.
- CO3: Have an in-depth knowledge on sensor network architecture and design issue
- CO4: Understand the transport layer and security issues possible in Ad hoc and Sensor
- CO5: Understand the concepts of different types of simulator

Part – A (10*2=20)

1	Draw the Super frame structure of IEEE 802.15.4?	CO1	K1
2	List the Features of PAMAS.	CO1	K2
3	What is the term of session hijacking?	CO2	K3
4	What is denial of service attacks?	CO2	K4
5	Draw the frame structure of LEACH	CO3	K1
6	What is difference between wormhole and black hole attacks?	CO3	K2
7	What are the features of SoC nodes?	CO4	K2
8	What is Cooja simulator?	CO4	K2
9	List the Features of MICA mote.	CO5	K2
10	What is Tiny OS.	CO5	K2

Part – B (5*13=65)

11	(a) Explain about S-MAC protocol in WSN with neat diagram. (13)	CO1	K1
	(b) Explain the Energy efficient unicast routing protocol with an example. (13)	CO1	K2
12	(a) Explain how the security provisioning in Adhoc network differs from that in infrastructure based network. (13)	CO2	K4
	(b) Explain various network and application layer security attacks in detail. (13)	CO2	K4
13	(a). Explain in detail about Key Management approaches which include symmetric and Asymmetricalgorithms. (13)	CO3	K2

	(b). i). Explain the Requirements of a Secure Routing Protocol for Adhoc Wireless Networks or WSN. (6)		CO3	K4
	ii). Explain about secure routing- SPINS. (7)		CO4	K2
14	(a) Explain detail about Dedicated embedded sensor nodes with an example. (13)		CO4	K3
	(b) Explain the node level software platforms for Sensor networks (13)		CO4	K2
15	(a) Explain the components of node level simulators. (13)		CO5	K3
	(b) Explain in detail about state centric Programming. (13)		CO5	K2

Part – C (1*15=15)

16	(a). What are the different Key Management techniques used for Ad Hoc Networks? (15)		CO4	K3
	(b) i). Explain about Cooja simulator (8)		CO5	K2
	ii). Explain the simulator - TOSSIM used for WSN. (7)		CO5	K2

SUBJECT IN-CHARGE 20|11|21

HOD

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
OBM 752 – HOSPITAL MANAGEMENT

Dept: ECE

Date: 24.11.2021　　　　**Time:** 3 Hours

Semester : VII

Max Marks: 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]

COURSE OUTCOMES:

CO1: Students can able to explain the principles of Hospital administration.

CO2: Students can able to identify the importance of Human resource management.

CO3: Students can able to list various marketing research techniques.

CO4: Students can able to Identify Information management systems and its uses.

CO5: Students can able to understand safety procedures followed in hospitals.

Part – A (10*2=20)

1	Differentiate seniority and merit	CO1	K1
2	How to evaluate the training process?	CO1	K1
3	Give some solutions to the problems occurred during promotion.	CO2	K2
4	What are the advantages of Medical Records Maintenance?	CO2	K1
5	What is ISDN?	CO3	K1
6	What is autoclaving?	CO3	K1
7	How the computerization is helping with the maintenance of medical records?	CO4	K1
8	List the function of CCTV.	CO4	K1
9	Classify the various alarms in a hospital.	CO5	K1
10	List out any two hospitals safety rules	CO5	K1

Part – B (5*13=65)

11	(a) (i) What are methods of training? Explain in detail. (7) (ii) Explain the Evaluation process of training. (6)		CO1	K1
	(b) What is Recruitment? Explain the process of recruitment in detail.	(13)	CO1	K2
12	(a) Explain the various activities involved in the Central Sterilization and Supply Department and discuss its advantages.	(13)	CO2	K2
	(b) . (i). List and explain the functions of Medical Record Department.	(7)	CO2	K2
	(ii). Explain about Laundry Department in hospitals.	(6)	CO2	K2
13	(a) Explain about Food Service Department in hospitals.	(13)	CO3	K2
	(b) Explain about Pharmacy Services in hospitals? .	(13)	CO3	K2

14	a) Explain in detail about Telephone system ISDN, Public Address and Piped Music and CCTV (13)	CO4	K3
	b) Explain in detail about the Alarm Systems in hospitals? (13)	CO4	K3
15	a) What are the various modes of communication in Hospital? Explain in detail. (13)	CO5	K4
	b) Explain about safety rules and security measures in hospitals. (13)	CO5	K4

Part – C (1*15=15)

16	(a) i) Give the details about the Promotion Policy. (8) ii) Explain in detail about Transfer Policy. (7)	CO5	K4
	(b) i) Compose the actions to be done when there is a fire in your area. (8)	CO5	K4
	ii) Elaborate the basic responsibilities of every hospital employee in case of fire Safety.(7)	CO5	K4

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SUBJECT IN-CHARGE

HOD 23/1./21

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
EC 8751-OPTICAL COMMUNICATION

Dept : ECE   **Semester : VII**
Date : 01.12.2021   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
    CO1: Realize basic elements in optical fibers, different modes and configurations
    CO2: Analyze the transmission characteristics associated with dispersion and polarization techniques.
    CO3: Design optical sources and detectors with their use in optical communication system.
    CO4: Construct fiber optic receiver systems, measurements and coupling techniques
    CO5: Design optical communication systems and its networks

Part – A (10*2=20)

1	What is intra modal dispersion?	CO1	K2
2	Write the laser diode rate equation	CO1	K3
3	Draw the generic structure of transimpedance amplifier	CO2	K1
4	Define receiver sensitivity.	CO2	K2
5	Draw the basic structure of STS-1 SONET frame.	CO3	K1
6	Define BER	CO3	K1
7	What is solitons	CO4	K1
8	What are the requirements in analyzing a link?	CO4	K2
9	Name any two popular architecture of SONET/SDH network.	CO5	K4
10	Illustrate inter channel cross talk that occurs in a WDM system	CO5	K4

Part – B (2*13=26)

11	(a) (i) Draw and explain surface and edge emitting LEDs. (7)	CO1	K1
	ii)Explain any two injection laser structures with neat diagrams? (6)	CO1	K1
	(b) With a neat diagram, explain the structure of LASER diode and its radiation pattern (13)	CO1	K2
12	(a) Explain the structure and working of silicon APD. (13)	CO2	K1
	(b) Discuss in detail about the effect of noise on system performance.	CO2	K1
13	a) Draw the block diagram of fundamental optical receiver. Explain each block with the intermediate signals at each stage.	CO3	K1
	b)i) With Neat diagrams, explain in detail about the front end amplifiers	CO3	K2

	ii) List out the various error sources associated with the receiver system.	CO3	K2
14	a) Evaluate the methods of dispersion measurements in optical fiber.	CO4	K5
	b) i) Describe the numerical aperture measurement of optical fiber	CO4	K4
	ii) Illustrate the refractive index profile measurements with neat diagrams.	CO4	K5
15	a) Explain the principle off solitons and discuss the soliton parameters with necessary expressions and diagrams	CO5	K3
	b) Explain SONET/SDH network	CO5	K2

Part – C (1*15=15)

8	a) Derive the expression for power coupling from LED to step index and graded index fibers	CO5	K2
	b) Write about rise time, optical power required to establish secure link with necessary equation.	CO5	K2

SUBJECT IN-CHARGE

HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - I
EC8094 – SATELLITE COMMUNICATION

Dept : ECE   **Semester :** VIII
Date : 25.04.2022   **Time:** 1 Hour 30 Mts   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
    CO1: Analyze the satellite orbits.
    CO2: Analyze the earth segment and space segment.
    CO3: Analyze the satellite link design.
    CO4: Analyze the Multiple Access Techniques.
    CO5: Design Various Satellite Applications.

Part – A (5*2=10)

1	Differentiate geostationary and geosynchronous satellite?	CO1	K1
2	Find the viewing angle of a geostationary satellite orbiting at 42000km from an earth station making an elevation angle of 25 degrees?	CO1	K3
3	State Kepler's third law.	CO1	K1
4	Define apogee and perigee	CO2	K1
5	Formulate uplink and downlink equation of a satellite access?	CO2	K1

Part – B (2*13=26)

6	(a) Derive the complete expression for Look Angles, along with intermediate angle in satellite communication. Show that intermediate angle is $\alpha = tan^{-1}\left[\frac{\tan|l_s - l_e|}{SinL_o}\right]$ (13)	CO1	K4
	(b) i)Explain and illustrate the limits of visibility in satellite orbits. (7) ii)Explain about satellite launch vehicles. (6)	CO1	K1
7	a) Examine how the attitude and orbit control system (AOCS) is achieved through spin stabilization system? Give necessary diagrams. (13)	CO2	K2
	b) What are the three main systems for tracking satellites? How can tracking systems be affected? What are the main functions of TTC subsystem? Explain. (13)	CO2	K2

Part – C (1*14=14)

8	a) A ground station lies at latitude = 39.2906 degrees N and longitude = 280.2629 degrees E. A Geostationary satellite at radius r = 42164 km has a longitude of 280.2629 degrees E. Calculate the range and look angles (azimuth and elevation angles) to the satellite? (14)	CO1	K4
	b) Explain what is meant by thermal control and Propulsion Control system and why this is necessary in a satellite. (14)	CO1	K2

SUBJECT IN-CHARGE   HOD

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – I
GE8076- PROFESSSIONAL ETHICS IN ENGINEERING

Dept: ECE   **Semester** : VIII
Date: 26.04.2022   **Time:** 1.5 Hours   **Max Marks:** 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
   CO1: As a student they must know the concept and importance of engineering ethics
   CO2: Aware about the overall ethical aspects of engineering.
   CO3: Able to apply the ethics in Engineering.
   CO4: Insight the responsibilities in the society.
   CO5: Realize the engineering ethical issues at global level.
   CO6: Prepare themselves as the good engineer.

Part – A (10*2=20)

1	What are values?	CO1	K1
2	What are steps used to resolve the Moral Dilemmas?	CO1	K1
3	State the important of ethical theories.	CO1	K2
4	Define Engineering Ethics.	CO2	K1
5	Differentiate Micro-ethics and Macro-ethics?	CO2	K1

Part – B (5*13=65)

6	(a) Explain the scope and importance of professional ethics in Engineering. (13)	CO1	K1
	(b) What is service learning? Why service learning is important? Explain Characteristics of service Learning. (13)	CO1	K2
7	(a) Describe Kohlberg and Gilligan's theories on moral autonomy. (13)	CO2	K2
	(b) Explain the types of inquiries in Engineering. (13)	CO2	K2

Part – C (1*15=15)

8	(a) Discuss the role of yoga for professional excellence and stress management.	CO1	K2
	(b) Define Empathy State and explain the elements benefits of Empathy and compare Empathy with Sympathy.	CO1	K2

B.Ambo 24.4.2022
SUBJECT IN-CHARGE

HOD 24/4/22

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
  CO1: Analyze the satellite orbits.
  CO2: Analyze the earth segment and space segment.
  CO3: Analyze the satellite link design.
  CO4: Analyze the Multiple Access Techniques.
  CO5: Design Various Satellite Applications.

Part – A (5*2=10)

1	Define noise factor.	CO3	K1
2	State the basic requirements of an earth station antenna.	CO3	K2
3	The range between a ground station & a satellite is 42000km. Calculate the free space loss a frequency of 6GHZ.	CO3	K3
4	What are the methods of multiple access techniques?	CO4	K1
5	Differentiate multiple access from single access.	CO4	K2

Part – B (2*13=26)

6	(a) List and explain the steps of Link power Budget analysis for uplink and Downlink equation. (13)	CO3	K4
	b) i) Explain how intermodulation noise originates in a satellite link and explain how it is reduced? (5) ii) Derive the link – power budget equation. (8)	CO3	K1
7	a) Briefly explain in detail the effects of rain in uplink and downlink in satellite communication. (13)	CO4	K2
	b) In detail explain about the time division multiplexing and bandwidth requirements in a satellite transmission system. (13)	CO4	K2

Part – C (1*14=14)

8	a.(i) In a link budget calculation at 12GHz, the free space loss is 206dB, the antenna pointing loss is 1dB, and the atmospheric absorption is 2dB. The receiver G/T is 19.5 dB/K, and the receiver feeder losses are 1 dB. The EIRP is 48DBW. Calculate the carrier to noise spectral density ratio. (8) a)(ii)In a link budget calculation at 12Ghz the free space loss is 20dB, the antenna pointing loss is 1dB and atmospheric absorption is 2dB. The receiver [G/T] is19.5dB/K and the receiver feeder loss is 1dB. The EIRP is 48dBw. Calculate the carrier to noise power spectral density ratio. (6)	CO3	K4

b.(i)A geostationary satellite transmits 5 W of power with an antenna having a gain of 28 dB. The downlink is operated at 4 GHz and the receive antenna is a dish with diameter of 3.6 m. Compute the EIRP transmitted, and the power received by the receiving antenna. Assume the receiver antenna efficiency to be 0.7 and all the other losses to be 2 dB.   (8)

b)ii)Explain what is meant by saturation flux density. The power received by a 1.8 m parabolic antenna at 14 GHz is 250 pW. Calculate the power flux density (a) in W/m2 and (b) in dBW/m2 at the antenna.   (6)

CO3 K5

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ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – II
GE8076- PROFESSSIONAL ETHICS IN ENGINEERING

Dept: ECE
Date: 19.05.2022   **Time:** 1.5 Hours

Semester   : VIII
Max Marks: 50

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:

CO1: As a student they must know the concept and importance of engineering ethics
CO2: Aware about the overall ethical aspects of engineering.
CO3: Able to apply the ethics in Engineering.
CO4: Insight the responsibilities in the society.
CO5: Realize the engineering ethical issues at global level.
CO6: Prepare themselves as the good engineer.

Part – A (10*2=20)

1	List the limitations of ethical codes.	CO3	K1
2	What are the features of engineering experimentation?	CO3	K2
3	What are codes of Ethics referred to?	CO3	K2
4	Define Safety.	CO4	K3
5	What is the use of risk analysis?	CO4	K4

Part – B (5*13=65)

6	(a) Discuss the problems associated with laws in engineering and enumerate the proper role of law in Engineering (13)	CO3	K2
	(b) How can an Engineer become a responsible experimenter? Explain in detail. (13)	CO3	K3
7	(a) What are the factors that affect risk acceptability? What is the use of knowledge of Risk acceptance to Engineer? (13)	CO4	K2
	(b) Discuss in detail about the moral and ethical issues involved in use of computers. (13)	CO4	K4

Part – C (1*15=15)

8	(a) What are the moral and ethical lessons we can be learned from space shuttle Challenger tragedy and how the principal actors behave as responsible experiments. (15)	CO3	K4
	(b) Discuss the causes of Bhopal disasters. Explain the responsibility of engineers in the design of product in the design stage itself before the event of an accident. (15)	CO3	K4

SUBJECT IN-CHARGE   16.5.22   **HOD** 16/5/22

ST. ANNE'S
COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT - III
EC8094 – SATELLITE COMMUNICATION

Dept : ECE **Semester** : VIII
Date : 06.06.2022 **Time:** 3 Hours **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
  CO1: Analyze the satellite orbits.
  CO2: Analyze the earth segment and space segment.
  CO3: Analyze the satellite link design.
  CO4: Analyze the Multiple Access Techniques.
  CO5: Design Various Satellite Applications.

Part – A (10*2=20)

1	State Kepler's third law.	CO1	K1
2	Find the viewing angle of a geostationary satellite orbiting at 42000km from an earth station making an elevation angle of 25 degrees.	CO1	K3
3	Define payload and transponder?	CO2	K1
4	Draw the block diagram of antenna subsystem?	CO2	K2
5	A satellite downlink at 10 GHz operates with a transmit power of 6 W and an antenna gain of 48.2 dB. Calculate the EIRP in dBW.	CO3	K3
6	A receiving system has antenna noise temperature of 60K & its receiver noise figure 9dB. Find the system noise temperature if room temperature is 290K?	CO3	K4
7	How does a CDMA receiver function for the purpose of synchronization maintenance and reliable data reconstruction?	CO4	K2
8	Distinguish between pre-assigned and demand assigned traffic?	CO4	K2
9	List the basic principle of VSAT networks.	CO5	K1
10	What is GRAMSAT?	CO5	K1

Part – B (5*13=65)

11	a)(i) Draw and explain the geometry for determining the sub satellite point. (5) (ii) Explain and illustrate the limits of visibility in satellite orbits. (8)	CO1	K2
	b) i) Explain how intermodulation noise originates in a satellite link and explain how it is reduced? (5) ii) Derive the link – power budget equation. (8)	CO1	K2
12	a). (i) Explain the working of telemetry, tracking and control with a suitable diagram. (8) (ii) Explain what is meant by thermal control and why this is necessary in a satellite (5)	CO2	K2
	b) Examine how the attitude and orbit control system (AOCS) is achieved through spin stabilization system? Give necessary diagrams (13)	CO2	K2

		CO	K
13	a) List and derive the steps of Link power Budget analysis for uplink and Downlink (13)	CO3	K2
	b) (i) Explain what is meant by input backoff. An earth station is required to operate at an [EIRP] of 44 dBW in order to produce saturation of the satellite transponder. If the transponder has to be operated in a 10 dB backoff mode, calculate the new value of [EIRP] required. iii) Two amplifiers are connected in cascade, each having a gain of 10 dB and a noise temperature of 200 K. Calculate (a) the overall gain and (b) the effective noise temperature referred to input? (8) (b) (ii) Explain what is meant by saturation flux density. The power received by a 1.8 m parabolic antenna at 14 GHz is 250 pW. Calculate the power flux density (a) in W/m2 and (b) in dBW/m2 at the antenna (5)	CO3	K4
14	(a)Explain in detail about compression and encryption techniques used in satellite communication. (13)	CO4	K2
	(b)Explain in detail the Code division multiple access technique and lists its advantages (13)	CO4	K2
15	a)i) Discuss in detail about GPS satellite services. (8) a)ii)Explain the concept behind DTH. (5)	CO5	K2
	b) i)Describe the operation of typical VSAT system. (5) b) ii)Write short notes on GSM (8)	CO5	K2

Part – C (1*15=15)

		CO	K
8	a.(i) In a link budget calculation at 12GHz, the free space loss is 206dB, the antenna pointing loss is 1dB, and the atmospheric absorption is 2dB. The receiver G/T is 19.5 dB/K, and the receiver feeder losses are 1 dB. The EIRP is 48DBW. Calculate the carrier to noise spectral density ratio. (8) a)(ii)In a link budget calculation at 12Ghz the free space loss is 20dB, the antenna pointing loss is 1dB and atmospheric absorption is 2dB. The receiver [G/T] is19.5dB/K and the receiver feeder loss is 1dB. The EIRP is 48dBw. Calculate the carrier to noise power spectral density ratio. (6)	CO5	K5
	b.(i)A geostationary satellite transmits 5 W of power with an antenna having a gain of 28 dB. The downlink is operated at 4 GHz and the receive antenna is a dish with diameter of 3.6 m. Compute the EIRP transmitted, and the power received by the receiving antenna. Assume the receiver antenna efficiency to be 0.7 and all the other losses to be 2 dB. (8) b)ii)Explain what is meant by saturation flux density. The power received by a 1.8 m parabolic antenna at 14 GHz is 250 pW. Calculate the power flux density (a) in W/m2 and (b) in dBW/m2 at the antenna. (6)	CO5	K4

S. D— 13/6/2022
SUBJECT IN-CHARGE

13/6/22
HOD

REG. NO. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

ST. ANNE'S

COLLEGE OF ENGINEERING AND TECHNOLOGY
CONTINUOUS INTERNAL ASSESSMENT – III
GE8076- PROFESSSIONAL ETHICS IN ENGINEERING

Dept: ECE   **Semester** : VIII
Date: 07.06.2022   **Time:** 3 Hours   **Max Marks:** 100

BLOOM'S TAXONOMY: K-Level [K1-Remember, K2-Understand, K3-Apply, K4- Analyze, K5-Evaluate, K6-Create]
COURSE OUTCOMES:
    CO1: As a student they must know the concept and importance of engineering ethics
    CO2: Aware about the overall ethical aspects of engineering.
    CO3: Able to apply the ethics in Engineering.
    CO4: Insight the responsibilities in the society.
    CO5: Realize the engineering ethical issues at global level.
    CO6: Prepare themselves as the good engineer.

Part – A (10*2=20)

1	What are values?	CO1	K1
2	What are the Significances of Engineering Ethics?	CO1	K1
3	Define Moral Autonomy.	CO2	K2
4	What are the steps in confronting Moral Dilemmas?	CO2	K1
5	Differentiate scientific experiments and engineering projects.	CO3	K1
6	List the limitations of ethical codes.	CO3	K1
7	Define the term collective bargaining.	CO4	K1
8	What are the main features of Whistle Blowing?	CO4	K1
9	What is meant by Globalization?	CO5	K1
10	Point out the responsibilities of consulting engineers.	CO5	K1

Part – B (5*13=65)

			CO	K
11	(a) Explain the scope and importance of professional ethics in Engineering. (13)		CO1	K1
	(b) What is service learning? Why service learning is important? Explain Characteristics of service Learning. (13)		CO1	K2
12	(a) Describe Kohlberg and Gilligan's theories on moral autonomy. (13)		CO2	K2
	(b) Explain the types of inquiries in Engineering. (13)		CO2	K2
13	(a) How can an engineer become a responsible experimenter ?Explain in detail ? (13)		CO3	K3
	(b) What are codes of Ethics? State and explain the function of codes of ethics and the objective to codes. (13)		CO3	K3

14	(a) What are intellectual property rights? Explain the elements of intellectual property rights in details and benefits of IPRS. (13)	CO4	K4
	(b) Discuss in detail about the employee Rights and its role in the organizations. (13)	CO4	K4
15	(a) Justify engineers as expert witness and advisors with suitable examples. (13)	CO5	K5
	(b) State the types of concern for environment by the engineers discuss the Approaches to resolve Environmental problems. what do professional codes of Ethics say about the environment? (13)	CO5	K5

Part – C (1*15=15)

16	(a) Discuss the role of yoga for professional excellence and stress management. (15)	CO5	K5
	(b) Define Empathy State and explain the elements benefits of Empathy and compare Empathy with Sympathy. (15)	CO5	K5

6/6/22

SUBJECT IN-CHARGE

HOD 6/6/22