HANDOUT

First Year ECE Semester I

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2022-23

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

HANDOUT- INDEX

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INSTITUTION VISION

To be a premier Institution in Engineering & Technology and Management with competency, values and social consciousness

INSTITUTION MISSION

IM₁   Provide high quality academic programs, training activities and research facilities.

IM₂   Promote Continuous Industry-Institute interaction for employability, Entrepreneurship, leadership and research aptitude among stakeholders.

IM₃   Contribute to the economical and technological development of the region, state and nation.

DEPARTMENT VISION

To be a centre of excellence in Electronics and Communication Engineering Education to produce professionals for ever-growing needs of society.

DEPARTMENT MISSION

The Department has following Missions:

DM1: To promote and facilitate student- centric learning.

DM2: To involve in activities that enable overall development of stakeholders.

DM3: To provide holistic environment with state-of-art facilities for students to develop solutions for various social needs.

DM4: Organize trainings in embedded systems with Industry interaction.

PROGRAM EDUCATIONAL OBJECTIVES(PEO'S)

PEO	Statements
PEO1	Accomplish technical proficiency for the efficacious ECE Professional.
PEO2	Pursue higher studies with emphasizing design, test and development of the systems to meet the industry and societal needs.
PEO3	Become entrepreneur by practicing ethics, professional integrity and leadership qualities.

PROGRAM SPECIFIC OUTCOMES(PSO'S)

PSO	Statements
PSO1	To manure and empower the SICET-ECE students strong in practical, technical and research domains in the areas of Signal/ Image processing. VLSI and wireless Communication.
PSO2	To design and develop a prototype system that will incorporate user requirements using modern devices and emerging technology for industry automations.
PSO3	To make the SICET-ECE students as successful industry ready engineers by imparting essential interpersonal skills and wide spread exposure on multi-disciplinary technologies.

PROGRAM OUTCOMES (PO'S)

PO1	**Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design / Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

C PROGRAMMING FOR ENGINEER(R22CSE1116)

At the end of the course, the student will be able to

C113.1	Draw flowcharts for solving arithmetic and logical problems.(L3-Apply)
C113.2	Develop modular reusable code by understanding concepts of functions.(L4-Analyze)
C113.3	Formulate algorithms and programs using arrays, pointers, strings and structures. (L3-Apply)
C113.4	Write programs using searching and sorting algorithm. (L3-apply)

Course Articulation Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C113.1	3	2	1	1	2	1	-	-	-	-	-	-	1	2	-
C113.2	3	3	3	2	3	2	-	-	-	-	-	-	1	1	-
C113.3	3	3	2	1	3	2	-	-	-	-	-	-	-	1	-
C113.4	3	3	3	2	3	1	-	1	-	-	-	-	1	1	-
C113	3	2.75	2.25	1.5	2.75	1.5	-	0.25	-	-	-	-	0.75	1.25	-

Lr.No.SICET/AUTO/DAE/BR-22/Academic Cal./655/2022   Date: 27.10.2022

I B.TECH. ACADEMIC CALENDAR
ACADEMIC YEAR : 2022-2023

Dr.G. SURESH,
Principal,

To,
All the HODs
Sir,

Sub: SICET (Autonomous) - Academic & Evaluation - Academic Calendar for **I B.Tech - I & II Semester**
for the academic year **2022-23** – Reg.

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The approved Academic Calendar for **I B.Tech – I & II Semester** for the academic year **2022-23** is given below:

I SEMESTER

S.NO.	EVENT	PERIOD	DURATION
1.	Induction & Orientation Programme	**03.11.2022**	
2.	1St Spell of Instructions for covering First Two and a half Units	03.11.2022 – 28.12.2022	8 Weeks
3.	I Mid Examinations	29.12.2022 – 04.01.2023	1 Week
4.	Submission of I Mid Term Examination Marks to the Autonomous Section on or before	10.01.2023	
5.	2nd Spell of Instructions for covering Remaining Two and a half Units	05.01.2023 – 02.03.2023	8 Weeks
6.	II Mid Examinations	03.03.2023 – 09.03.2023	1 Week
7.	Preparation & Practical Examinations and Remidial Mid Test (RMT)	10.03.2023 – 16.03.2023	1 Week
8.	Submission of II Mid Term Examination Marks Marks to the Autonomous Section on or before	16.03.2023	
9.	I Semester End Examinations	17.03.2023 – 01.04.2023	2 Weeks
Commencement of Class-Work for I B.Tech - II Semester 03.04.2023			

II SEMESTER

S.NO.	EVENT	PERIOD	DURATION
1.	Commencement of II Sem Class Work	**03.04.2023**	
2.	1st Spell of Instructions for covering First Two and a half Units (Including Summer Vacation)	03.04.2023 – 10.06.2023	10 Weeks
	Summer Vacation	15.05.2023 – 27.05.2023	2 Weeks
3.	I Mid Examinations	12.06.2023 – 17.06.2023	1 Week
4.	Submission of I Mid Term Examination Marks to the Autonomous Section on or before	23.06.2023	
5.	2nd Spell of Instructions for covering Remaining Two and a half Units	19.06.2023 – 12.08.2023	8 Weeks
6.	II Mid Examinations	14.08.2023 – 19.08.2023	1 Week
7.	Preparation & Practical Examinations and Remidial Mid Test (RMT)	21.08.2023 – 26.08.2023	1 Week
8.	Submission of II Mid Term Examination Marks Marks to the Autonomous Section on or before	26.08.2023	
9.	II Semester End Examinations	28.08.2023 – 09.09.2023	2 Weeks
Commencement of Class Work for II B.Tech – I Semester - 11.09.2023			

ACE   CE   DEAN   PRINCIPAL

Copy to all the Heads of the Depts. and AO.

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)
DEPARTMENT OF HUMANITIES & SCIENCES

DEPARTMENT CALENDAR – 2022-2023 (I B.Tech – I SEMESTER)

DAYS	NOV	NOVEMBER -22	DEC	DECEMBER - 22	JAN	JANUARY -23	FEB	FEBRUARY - 23	MAR	MARCH - 23	APR	APRIL - 23
DAYS						JANUARY -23					1	I SEMESTER END EXAMINATIONS
SUNDAY					1	NEW YEAR/ HOLIDAY					2	HOLIDAY
MONDAY		NOVEMBER -22			2	MID I EXAM					3	COMMENCEMENT OF II SEMESTER CLASSES- I MID
TUESDAY	1				3	MID I EXAM		FEBRUARY - 23		MARCH - 23	4	
WEDNESDAY	2			DECEMBER - 22	4	MID I EXAM	1		1		5	
THURSDAY	3	INDUCTION & ORIENTATION PROGRAM I SEMESTER CLASSES- I MID	1		5	I SEMESTER CLASSES- II MID	2		2		6	
FRIDAY	4		2		6		3		3	MID II EXAM	7	
SATURDAY	5		3		7		4		4	MID II EXAM	8	
SUNDAY	6	HOLIDAY	4	HOLIDAY	8	HOLIDAY	5	HOLIDAY	5	HOLIDAY	9	HOLIDAY
MONDAY	7	INDUCTION & ORIENTATION PROGRAM I SEMESTER CLASSES- I MID	5		9		6		6	MID II EXAM	10	
TUESDAY	8		6		10		7		7	MID II EXAM	11	
WEDNESDAY	9		7		11		8		8	HOLI	12	
THURSDAY	10		8		12		9		9	MID II EXAM	13	
FRIDAY	11		9		13		10		10	PREPARATION & LAB END EXAMINATIONS	14	
SATURDAY	12		10		14	BHOGI/ HOLIDAY	11		11		15	
SUNDAY	13	HOLIDAY	11	HOLIDAY	15	PONGAL/ HOLIDAY	12	HOLIDAY	12	HOLIDAY	16	HOLIDAY
MONDAY	14		12		16	KANUMA/ HOLIDAY	13		13	PREPARATION & LAB END EXAMINATIONS	17	
TUESDAY	15		13		17		14		14		18	
WEDNESDAY	16		14		18		15		15		19	
THURSDAY	17		15		19		16		16		20	
FRIDAY	18		16		20		17		17	I SEMESTER END EXAMINATIONS	21	
SATURDAY	19		17		21		18	SIVARATHRI / HOLIDAY	18		22	
SUNDAY	20	HOLIDAY	18	HOLIDAY	22	HOLIDAY	19	HOLIDAY	19	HOLIDAY	23	HOLIDAY
MONDAY	21		19		23		20		20	I SEMESTER END EXAMINATIONS	24	
TUESDAY	22		20		24		21		21		25	
WEDNESDAY	23		21		25		22		22	UGADI	26	
THURSDAY	24		22		26	REPUBLIC DAY	23		23		27	
FRIDAY	25		23		27		24		24	I SEMESTER END EXAMINATIONS	28	
SATURDAY	26		24		28		25		25		29	
SUNDAY	27	HOLIDAY	25	X-MAS	29	HOLIDAY	26	HOLIDAY	26	HOLIDAY	30	HOLIDAY
MONDAY	28		26	BOXING DAY/ HOLIDAY	30		27		27			
TUESDAY	29		27		31		28		28	I SEMESTER END EXAMINATIONS		
WEDNESDAY	30		28						29			
THURSDAY			29						30	SRI RAMA NAVAMI		
FRIDAY			30	MID I EXAM					31	I SEMESTER END EXAMINATIONS		
SATURDAY			31	MID I EXAM								

C PROGRAMMING FOR ENGINEERS

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)

B.Tech. - I Year – I Semester

L	T	P	C
3	0	0	3

(R22CSE1116) C PROGRAMMING FOR ENGINEERS

Course Objectives:
1. To learn the fundamentals of computers.
2. To understand the various steps in Program development.
3. To learn the syntax and semantics of C Programming Language.
4. To learn the usage of structured programming approach in solving problems.

Course Outcomes: Upon completing this course, the students will be able to
1. Draw flowcharts for solving arithmetic and logical problems
2. Develop modular reusable code by understanding concepts of functions.
3. Formulate algorithms and programs using arrays, pointers, strings and structures.
4. Write programs using Searching and sorting algorithms

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1	-	1	-	-	-	-	-	1
CO2	3	2	3	2	-	2	-	-	-	-	-	1
CO3	3	3	2	1	-	2	-	1	-	-	-	1
CO4	3	3	3	2		1	-	1				

UNIT- I : Introduction to Computer Algorithms and Programming

Components of a computer system: Memory, processor, I/O devices, storage, operating system, the concept of assembler, compiler, interpreter, loader, and linker.

From algorithm to program: Representation of an algorithm, flowchart, Pseudocode with examples, converting algorithms to programs.

Programming Basics: Structure of C program, writing and executing the first C program, Syntax and logical errors in compilation, object, and executable code. Components of C language, standard I/O in C, data types, variables and constants, memory storage, and storage classes.

UNIT – II : Expressions and Statements

Expressions and their evaluation: Operands and Operators, formation of expressions using arithmetic, relational, logical, and bitwise operators, precedence and associativity rules, mixed operands, type conversion, and evaluation of expressions.

Statements: Simple and compound statements, Conditional Branching: if and switch statements, nested if-else, dangling else problem, use of break and default with switch. Iteration and loops: use of while, do-while and for loops, nested loops, use of break and continue statements.

UNIT – III : Functions and Arrays

Designing Structured Programs: Introduction to functions, advantages of modularizing a program into functions, types of functions, passing parameters to functions: call by value, call by reference, passing arrays to functions, recursion with example programs.

Arrays: Array notation and representation, manipulating array elements, using multi-dimensional arrays, character arrays, C strings, string input/output functions, Array of strings, string manipulation functions with example programs.

UNIT – IV : Pointers and File handling

Pointers: Introduction, declaration, applications, dynamic memory allocation (malloc, calloc, realloc, free), use of pointers in self-referential structures.

File handling: File I/O functions, standard C pre-processors, defining and calling macros, command- line arguments.

UNIT – V : Derived types And Basic Algorithms:

Structures, Union, Enums and Bit-fields: Defining, declaring, and usage of structures, unions, andtheir arrays, passing structures, and unions to functions, introduction to enums and bit-fields.

Basic Algorithms: Searching and Sorting Algorithms (Bubble, Insertion, and Selection), finding roots of equations, notion of order of complexity through example programs.

TEXT BOOKS:

1. B. A. Forouzan and R. F. Gilberg -Programming & Data Structures, 3rd Ed., CengageLearning`
2. Byron Gottfried - Schaum's Outline of Programming with C, McGraw-Hill

REFERENCE BOOKS:

1. Ajay Mittal - Programming in C: A practical approach, Pearson Education, 2010
2. Kernighan Brian W. and Ritchie Dennis M.- The C programming, Pearson Education.
3. J. R. Hanlyand, E. B. Koffman -Problem Solving and Program Design, 5th Ed., Pearson Education.
4. H. Cheng - C for Engineers and Scientists, McGraw-Hill International Edition
5. V. Rajaraman - Computer Basics and C Programming, PHI Learning, 2015.

	SRI INDU COLLEGE OF ENGG & TECH **QUESTION BANK** **(Regulation :R22)** **Department of Electronics and Communication Engineering**		**(Regulation :R22)** Prepared on :2/11/2022 Rev1: 25/12/2022 **Page: 12 of 13**
Sub. Code & Title	**(R22CSE1116) C PROGRAMMING FOR ENGINEERS**		
Academic Year: 2022-23	**Year/Sem.**		**I-I/ECE (A,B)**
Faculty Name & Designation	**D.MOUNIKA, Asst.Professor** **G. ANITHA, Asst.Professor**		

Unit/ Item No.	Topic (s)	Book Reference	Page (s) From	To	Teaching Methodology	Proposed No. of Periods	Actual Date of Handled	CO/RBT
	UNIT-I							
I	**Introduction to Computer Algorithms and Programming**					**14**		
1.1	Components of a computer system,Memory, I/O devices,storage,Operating system	T1	1.2	1.7	Power Point Presentation	1		CO1/L1
1.2	The concept of assembler, Compiler, Interpretter, Loader and Linker	T1	1.9	1.10	Power Point Presentation	1		CO1/L1
1.3	From Algoritham to program, Representation of an algoritham	T1	1.25	1.25	Black board	1		CO1/L4
1.4	Flowchart/Psuedo code with examples	T1	1.26	1.36	Power Point Presentation	1		CO1/L1
1.5	Algorithams for i)Finding roots of Quadratic Equations ii) Finding minimum and maximum numbers of given set iii)Finding if a number is prime number.	T1	1.25	1.26	Black board, Power Point Presentation	1		CO1/L4
1.6	Programming basics,Structuire of C Program,	T1	2.3	2.4	Power Point Presentation	2		CO1/L1
1.7	writing and executing the first C program	T1	2.4	2.6	Black board	1		CO1/L3
1.8	Syntax and Logical Errors in Compilation,Object and ExecutableCode	T2	49	55	Black board, PowerPoint Presentation	1		CO1/L4
1.9	Components of C language,Standard I/O in C datatypes	T2	26	32	Nptel video lecture	1		CO1/L1
1.10	Variables and Constants, Memory Storage	T2	26	32	Nptel video lecture	1		CO1/L1
1.11	Converting Algorithams to Programs	T1	2.35	2.42	Black board	2		CO1/L3

Sub. Code & Title	(R22CSE1116) C PROGRAMMING FOR ENGINEERS			
Academic Year: 2022-23		Year/Sem.	I-I/ECE (A,B)	
Faculty Name & Designation		D.MOUNIKA, Asst.Professor G. ANITHA, Asst.Professor		

1.12	Storage classes (auto, extern, static and register), type conversion	T1	2.44	2.53	Power point presentation	1		CO1/L2
1.13	Revision				Black board	1		
	Review				**Signature of the HOD/Coordinator**			
	UNIT-II							
II	**Expressions and Statements**					14		
2.1	Operands and Operators	T2	131	135	Black board	1		CO1/L2
2.2	Formation of expressions using arithmetic relational, logical and bitwise operators	T2	136	177	Black board	2		CO1/L2
2.3	Precedence and Associativity rules, mixed Operands and evaluation of expressions	T1	3.12	3.24	Black board	2		CO1/L5
2.4	Type conversion	T1	3.19	3.24	Black board	1		CO1/L2
2.5	Simple and compound Statements, Conditional Branching :if and Switch statements, nested if else, dangling else problem	T2	130	175	Black board	2		CO1/L2
2.6	Use of break and default with switch Iteration	T2	175	177	Black board	2		CO1/L2
2.7	loops: use of while	T2	176	177	Black board	1		CO1/L2
2.7	do while and for loops ,nested loops	T1	6.1	6.29	Black board	1		CO1/L2s0
2.8	Use of break and continue statements	T1	6.30	6.32	Black board	1		CO1/L2
2.9	Write a C program i) to read 10 numbers from keyboard find their average ii)to display multiplication table of given integer	T1	130	179	Black board	1		CO1/L6
2.10	Revision				Black board	1		

	Sub. Code & Title		(R22CSE1116) C PROGRAMMING FOR ENGINEERS					
	Academic Year: 2022-23		Year/Sem.		I-I/ECE (A,B)			
	Faculty Name & Designation		D.MOUNIKA, Asst.Professor G. ANITHA, Asst.Professor					

		UNIT-III						
III		**Functions and Arrays**				**16**		
3.1	Introduction to a function,modularizing a program in to fumctions, types of functions	T1	15.2	15.33	Black board	2		CO2/L1
3.2	Passing parameters to functions: call by value, callby reference	T1	15.5	15.26	Powerpoint Presentation	2		CO3,CO2/L3
3.3	Passing array to functions	T1	15.26	15.28	Black board	1		CO3,CO2/L3
3.4	Recursion with example programs	T1	15.32	15.33	Black board	2		CO2/L2
3.5	Array notation and representation	T1	7.1	7.24	Black board	1		CO3/L1
3.6	Manipulating array elements using multi dimensional array elements	T1	7.27	7.32	Powerpoint Presentation	2		CO3/L3
3.7	Character arrays	T1	7.32	7.36	Black board	1		CO3/L2
3.8	C strings	T1	8.3	8.7	Black board	1		CO3/L1
3.9	String input/output functions	T1	8.8	8.20	Powerpoint Presentation	1		CO3/L1
3.10	Array Of Strings	T1	8.20	8.25	Black board	1		CO3/L2
3.11	String Manipulation function with example programs	T1	8.26	8.44	Black board	2		CO3/L1
3.12	Write a C program i) To read and print an employee details using structure ii) To append one string to end of the string iii) To calculate the difference between two time periods using union	T1	8.24	8.26	Black board	1		CO3/L6
3.13	revision				Black board	1		
	Review				**Signature of the HOD/Coordinator**			
		UNIT-IV						

IV	**Pointers and File Handling**						
4.1	Pointers Introduction	T1	11.1	11.4	Black board	1	CO3/L1
4.2	Declaration, Applications	T1	11.4	11.7	Black board	2	CO3/L1
4.3	Dynamic Memory Allocation(malloc, calloc, realloc, free)	T1	11.6	11.12	Black board	2	CO3/L2
4.4	Use of pointers in self referential structures	T1	10.1	10.14	Black board	1	CO3/L2
4.5	File I/O functions	T1	13.1	13.40	Black board	2	CO3,CO2/L2
4.6	Standard C preprocessors	T2	458	466	Black board	2	CO2/L1
4.7	Defining and calling macros	T2	467	469	Black board	1	CO2/L2
4.8	Command line arguments	T1	3.37	3.39	Powerpoint presentation	1	CO3/L2
4.9	revision					1	

Review	**Signature of the HOD/Coordinator**

UNIT-V	

V	**Derivedtypes and Basic Algorithams**						
5.1	Defining and declaration and usage of structures, unions	T1	9.7	9.20	Black board	2	CO3/L1
5.2	Array of structure, array of union	T1	9.20	9.24	Black board	2	CO3/L2
5.3	Passing structures and union to functions	T1	9.25	9.28	Black board	1	CO3/L3

5.4	Introduction to enum and Bit fields	T1	9.2	9.7	Black board	1		CO3/L1
5.5	Basic algorithms searching(linear search)	T1	16.17	16.19	Black board	2		CO4/L2
5.6	Binary Search	T1	16.19	16.23	Black board	2		CO4/L2
5.7	Bubble Sort	T1	16.2	16.5	Black board	2		CO4/L2
5.8	Selection sort	T1	16.10	16.13	Black board	2		CO4/L2
	Insertion sort	T1	16.6	16.10	Black board	2		CO4/L2
5.9	revision				Black board	1		
	Review				**Signature of the HOD/Coordinator**			

LIST OF TEXT BOOKS AND REFERENCES

TEXT BOOKS:

1. B.A. Forouzan and R.F. Gilberg C Programming and Data Structures, Cengage Learning,(3^{rd}Edition)
2. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill

REFERENCE BOOKS:

1. Ajay Mittal - Programming in C: A practical approach, Pearson Education, 2010
2. Kernighan Brian W. and Ritchie Dennis M.- The C programming, Pearson Education.
3. J. R. Hanlyand, E. B. Koffman -Problem Solving and Program Design, 5th Ed., Pearson Education.
4. H. Cheng - C for Engineers and Scientists, McGraw-Hill International Editi
5. V. Rajaraman - Computer Basics and C Programming, PHI Learning, 2015.

Weblinks

a. https://nptel.ac.in/courses/106/105/106105171/
b. https://onlinecourses.nptel.ac.in/noc21_cs01/preview

c. https://nptel.ac.in/courses/106/104/106104074/

d. https://www.coursera.org/specializations/c-programming

e. https://www.edx.org/course/c-programming-getting-started

Sub. Code & Title	(R22CSE1116) C PROGRAMMING FOR ENGINEERS	
Academic Year: 2022-23	Year/Sem.	I-I/ECE (A,B)
Faculty Name & Designation	D.MOUNIKA, Asst.Professor G. ANITHA, Asst.Professor	

CONTENT BEYOND THE SYLLABUS

S.No	Topics	Proposed Actions	Date	Resource Person/Mode	POs	PSOs
1	Linked list without implementation	To get Knowledge		D.Mounika	PO1	PSO1
2	Introduction to Data Structures	To get knowledge		D.Mounika	PO2&PO3	-
3	strrev ,strlwr, strupr,strcmp functions	To get knowledge		G.| Anitha	PO3	-

ASSIGNMENT

S.No	Assignment Questions	Course Outcome	Books To be Referred	Date of Announcement	Date Of Submission
1	List the steps and draw flowchart to print biggest of three numbers.	CO1	T2	20-12-2022	27-12-2022
2	Explain about structure of c.	CO1	T2	20-12-2022	27-12-2022
3	Explain branching statements with example.	CO1		20-12-2022	27-12-2022
4	Explain about Operator precedence and priority	CO2	T2	20-12-2022	27-12-2022
5	Explain about recursive function with an example.	CO2	T2	20-12-2022	27-12-2022
6	Explain string handling functions with an example.	CO3	T2	22-2-2023	27-2-2023
7	Develop a C program to combine contents of two files in to third file.	CO3	T2	22-2-2023	27-2-2023
8	Discuss about following with an example a)malloc b)calloc c)realloc d)free	CO3	T2	22-2-2023	27-2-2023
9	Explain Binary search technique with example.	CO4	T2	22-2-2023	27-2-2023
10	Choose any one of the sorting technique and sort the following numbers 34,5,67,8,435,2,78,45,12,15,24	CO4	T2	22-2-2023	27-2-2023

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SELF STUDY TOPICS

S.No.	Topics	Books & Journals	Course Outcomes
1	Implement copy one string to another string, concatenation of two strings, comparison of two string, reverse of two strings, length of a string with out using predefined function s.	Let Us C 8th Edition,BPB publications,yashvanth kanetkar	CO3
2	Pattern programs	The Complete Reference C Fourth edition McGraw – Hill,Herbert Schildt	C01

Prepared by	Recommended and Approved by
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QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 6. Creating)

UNIT-1 Introduction to Computer Algorithms and Programming			
	OBJECTIVE QUESTIONS	BT Level	Course Outcome
1C-1	If 'a' is an integer value then a=5/2 will return ( ) (a) 2.5 b) 2 c) 2.5000000 d) 2.000000	I	CO1
1C-2	--------------is a default storage class for local variable. ( ) a) Auto b) static c)extern d)register	I	CO1
1C-3	Flow charts and algorithms are used for ( ) a)Better programming b)Easy testing c)Efficient coding d)All	I	CO1
1C-4	Which is not a keyword in C ( ) a) typedef b) Const a)Near d) int	I	CO1
1C-5	A global variable is declared ------- ( ) A) Inside of main function B) outside of main function C) Anywhere in the fuction D) both a and b	I	CO1
1C-6.	The C language originally developed from------------ language ( ) a) D b) A c)B d)BPL	I	CO1
1C-7	Which of the following is true for variable names in C? ( ) a) They can contain alphanumeric characters as well as special characters b) It is not an error to declare a variable to be one of the keywords(like goto, static) c) Variable names cannot start with a digit d) Variable can be of any length	I	CO1
1C-8	What is #include <stdio.h>? ( ) a) Preprocessor directive b) Inclusion directive c) File inclusion directive d) None of the mentioned	I	CO1
1C-9	Functions available in stdio.h -------------------- ( ) a) pow(),sqrt() b) printf(),scanf() c) clrscr(),getchar d) strcpy()	I	CO1
1C-10	------------ is the 16-bit compiler allowable range for integer constants ( ) a) -32768 to +32767 b) -128 to +127 c) 3.14e to 6.78e d)0 to 655355	I	CO1
1C-11	What will be the output of the program? ( ) int main() {	II	CO1

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	int a=10,b=20;
	printf("a=%d b=%d", a, b);
	a=a+b; b=a-b;
	 a=a-b;
	 printf("a=%d b=%d", a, b);
	 return 0;
	} A)a=20,b=20 B)a=10,b=20 C)a=20,b=10 D)a=10,b=10		

1C-12	compiler is used for------------------------------ ( ) a)Converting one file to another file b) converting .c file to .obj file line by line c) converting assembly language to machine level d)Converting .c file to .obj file	I	CO1

	FILL IN THE BLANKS	BT Level	Course Outcome
1F-1	No of keywords inC------------	I	CO1
1F-2	The standard mathematical functions are included in the ------------..header file.	I	CO1
1F-3	C program execution begins from---------	I	CO1
1F-4	C language was implemented in the year-----------	III	CO1
1F-5	An ------------ storage class can be used to declared global variable known to all the functions in the file.	I	CO1
1F-6	A --------------- character instructs the computer to move the control to the next line.	II	CO1
1F-7	1 Kilobyte(1KB)=-------------- bytes	I	CO1
1F-8	In the ASCII code ,the decimal values of capital letters (alphabets) range will start from_____to _____.	II	CO1

1F-9	What is the ouput of below given code-----------------
	 Void main()
	 {
	   Printf("hello world');
	 }
		III	CO1

1F-10	The ------------ is a program design tool that is a visual representation of the logic in a program.	I	CO1
	MATHCH THE FOLLOWING		
1M-1	a. int i) 4 bytes b. float ii) 1 byte c. double iii) 2 bytes d. char iv) 8 bytes		

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1M-2	a. int b. float c. double d. char	i) %lf ii) %c iii) %f iv) %d		
1M-3	a. printf() b. scanf() c. sqrt() d. pow()	i) find out the square root of value ii) to print the data on console iii)to find out the value with power iv) to read the value from keyboard		

	5 -MARK QUESTIONS	**BT Level**	**Course Outcome**
1D-1	List the steps to print biggest of three numbers (Algorithm).	I	CO1
1D-2	Construct a Flowchart to find the roots of a quadratic equation. .	III	CO1
1D-3	Write an algoritham and develop a c program to print the reverse of a given number.	III	CO1
1D-4	Explain Storage classes in detail.	II	CO1
1D-5	Define Flowchart ? List some commonly used Symbols and specify its purpose ?	I	CO1
1D-6	Define identifier?List out the rules to Construct identifier? Classify the following as valid /invalid identifiers. i) Num2 ii)\$num1 iii)+add iv)a-2 v)199space	IV	CO1
1D-7	List and Explain Various Components of a Computer System?	II	CO1
1D-8	Discuss the structure of a C program.	II	CO1
1D -9	Explain about creation and running of a program?	II	CO1
1D-10	List Out the basic Data types in C language and Explain?	I	CO1

	Unit -II : Expressions and Statements		
	OBJECTIVE QUESTIONS	**BT Level**	**Course Outcome**
2C-1	If a=8,b=3,c=-5 are integers then a*b/c will give the value ( ) a) -4 b) 2.8 c) +2.8 d) +3	I	CO1
2C-2	If a=10;b=++a then value of b will be --------------------- ( ) a) 11 b)12 c)10 d)-10	I	CO1

2C-3	Consider the following statement:
	  x=100; y=200;
	  a=(x>y) ?x++:y--;
	The value of a is ----------- ( )
		III	CO1

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	a) 200 b)100 c)201 d)199		
2C-4	How many times will the following loop execute? ( ) for(j=1;j<=10;j=j-1) a. Forever b. Never C.0 d.1	IV	CO1
2C-5.	Which loop is guaranteed to execute atleast one time. ( ) A. for B.While C. do while D. None of the above	I	CO1
2C-6	X+=1 is equal to----------- ( ) a) x=x+1 b)x=x++ c) x-- d)--x	II	CO1

2C-7	The -------------- operator can be used to determine the size of data type , array
	       and structure ( )
	   a) sizeof( ) b) >> c), d)<<
		I	CO1

2C-8	Which of the following is the correct order of operators for the evaluation for the expression z = x + y * z/4 % 2-1 ( ) a)* / % + - = b) - % ? * + = c) / * % - + = d) * / % - + =	II	CO1

2C-9	Relational operators are ( )
	     a) >,<.>=,<=,!= c) <<,>>
	     b) Sizeof(),? d) ++,--
		I	CO1

2C-10	What is the output of this program? ( )
	 int main()
	{
	printf("variable! %d", x); return 0;
	 }
	A. variable! x B. variable! followed by a junk value
	 C. Compile time error D. variable!
		II	CO1

2C-11	associativity of an operator is------------------ ( ) a) Lto R b) R to L c) Random d)both a and b	I	CO1
2C-12	do-while loop terminates when conditional expression returns? ( ) a) One b) Zero c)Non - zero d) None of the above	I	CO1
	FILL IN THE BLANK QUESTIONS	**BT Level**	**Course Outcome**
2F-1	bitwise operators are ---------------------------	I	CO1
2F-2	_____is very similar to the while loop except that the test occurs at the end of the loopbody.	II	CO1

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2F-3	void main()
	{
	int a=3,b=5,c;
	c=a+++++b+--a+b--;
	}
	Find the valueof a=-------,b=---------,c=------ --.
		III	CO1

2F-4	Pre test loop examples-----------------	I	CO1
2F-5	To change every bit in a variable from a=1 to a=0 or from a=0 to a=1,we need to use the ----------- operator.	II	CO1
2F-6	Arithmetic operators precedence order----------------	I	CO1
2F-7	Associativity of conditional operator--------------,increment operators----------	I	CO1
2F-8	break will be used to---------------------	I	CO1

2F-9	void main()
	{
	int a=5,b=6,c=3;
	if(....................................)
	{
	Printf("a is greater");
	}
	else if(...............................)
	{
	Printf("b is greater");
	}
	else
	{
	Printf("c is greater");
	}
	}
		III	CO1

2F-10	Conditional operator syntax-------------------------------	I	CO1

MATCH THE FOLLOWING		**BT Level**	**Course Outcome**
2M-1	a. if b. if else c. else if ladder d. while	i) more than two conditions ii) one condition iii) repeating same statement iv) more than one conditions	I	CO1
2M-2	a. Conditional branching statements b. Unconditional branching statements c. Looping statements d. return statements	i) while, do while ,for ii) if, if else, else if ladder iii) return value iv) break,continue	I	CO1
2M-3	a. logical operators	i) <<,++,>>,--	I	CO1

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	b. bitwise operators	ii)++,--	
	c. relational operators	iii) &&,‖	
	d. inc/dec operators	iv) >=,<=,!=	

	5- MARK QUESTIONS	**BT Level**	**Course Outcome**
2D-1	Explain Conditional Branching statements with example.	II	CO1
2D-2	Explain different operators available in C.	II	CO1
2D-3	Explain Unconditional Branching statements with example.	II	CO1
2D-4	List the differences between while and do while loop ,Write a c program to find sum of 1 to n numbers using for loop?	III	CO1
2D-5	Explain about Operator Precedence ,Operator associativity in expressions?	II	CO1
2D-6	Explain different loops available in C with example .	II	CO1
2D-7	Construct a program to find factorial of a given number?	III	CO1
2D-8	Develop a C program to check whether a given integer is prime or not?	III	CO1
2D-9	Develop a C program for an electricity power distribution company charges its domestic consumers as follows. Consumption Units Rate of Charge (per unit) 0-200 Rs. 5 201-300 Rs. 7 301-400 Rs. 8 Above 400 Rs. 10	VI	CO1
2D-10	Construct a C program ,which takes two integer Operands and one operator from user, performs the operation and print the result.(Consider the operations +,-,*,%,/ and use switch statement) .	III	CO1
	Unit -III : Functions and Arrays		
	Objective Questions	**BT Level**	**Course Outcome**

3C-1	What is the output of following program? ( )
	void fun(int x)
	int main()
	{
	int y = 20;
		III	CO2

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	fun(y);
	printf("%d" , y); return 0;
	}　　　　a) 30　b) 20　c)compile error　d)run time error		

3C-2	Every C Program should contain which function Every C Program should contain which function?　　　　　　　　　　　( ) a) printf() b) show() c) scanf() d) main()	I	CO2
3C-3	Choose correct statement about Functions in C Language.　　　( ) a)Function is a group of c statements which can be reused any number of times b) Every Function has a return type c) Every Function may no may not return a value d) All the above	I	CO2
3C-4	In which parameter passing mechanism, actual argument values are unchanged?　( ) 　a) Call By value　　　b)　Call by reference　c) by address d) by name	I	CO2
3C-5	A function which calls itself is called a____function.　　　　( ) a) Self Function　　　　　b) Auto Function c) Recursive Function　　　d) Static Function	I	CO2
3C-6	What are the advantages of functions?　　　　　　( ) a) reduced lines of code　　　b) reduced the complexity c)reusability of the code　　　d)all of the above	I	CO3
3C-7	Assuming int is of 4bytes, what is the size of int arr[15];?　( ) 　a) 15　　b) 19　　c) 11　　　d) 60	I	CO3
3C-8	If the two strings are equal, then strcmp() function returns　　( ) 　A. -1　B. 1　C. 0　　D. None		CO3
3C-9	What will be the result of len variable after execution of the following statements? ( ) int len; char str1[]={"39 march road"}; len=strlen(str1); a.11　b.12　c.13　d.14	III	CO2
3C-10	What is the output?　　　　　　　　　　　( ) void main()	II	CO3

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```
{
    int a[4]={5,6,7,8};
    printf("%d",a[1]);
}
```

(a) 5   b) 6   c) 8   d) None of these

3C-11	getchar() is used for----------------- ( ) a) read a sting from user b) to read one character at a time from user c) to print one character at a time d) collection of similar type of strings	I	CO3
3C-12	gets() is used for----------------- ( ) a) read a sting from user b) to read one character at a time from user c) to print one character at a time d) collection of similar type of strings ( )	I	CO3
	FILL IN THE BLANK QUESTIONS	**BT Level**	**Course Outcome**
3F-1	The parameters in a function definition are called as ----------------------parameters	I	CO2
3F-2	Functions are used to ----------------------	I	CO2
3F-3	Syntax for function declaration------------	I	CO2
3F-4	The parameters in a function call are called as ---------------------- parameters	I	CO2
3F-5	A function calls itself is called-----------------------	I	CO2
3F-6	Array elements always stored in ----------------- continuous memory allocation.	I	CO2
3F-7	format specifier to accept a string is--------------	I	CO3
3F-8	Syntax for two dimensional array declaration---------------	I	CO3
3F-9	Array passed is an argument to a function is interpreted as----------------------	I	CO3
3F-10	Strlen() return type---------------------	I	CO3
	MATCH THE FOLLOWING	**BT Level**	**Course Outcome**

3M-1	a. Call by value i) function calls itself
	b. Call by reference ii) Modification of formal parameters will effect actual
	          Parameters
	c. Void functions iii) Modification of formal parameters will effect
	     actual
	
	               Parameters
	d. Recursion iv) returns nothing
		I	CO2

3M-2	a. One dimensional integer array i) int a[2][2] b. Two dimensional array ii) char a[20] c. strings iii) int a[][ ][]...................[] d. multi dimensional array iv) int a[5]	I	CO3

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3M-3	a. strcmp() b. strlen() c. strcpy() d. strrev()	a) reverse of given string b)copy one string to another string c)to compare two strings d) return the length of string	I	CO3
	5 -MARK QUESTIONS			
3D-1	Explain parameters and return types of a function. .		II	CO2
3D-2	Develop a C program to pass an array as an argument to function?		II	CO2
3D-3	Explain call by value and call by reference. Develop a C program to swap two values by using both techniques ?		III	CO2
3D-4	Explain about recursive function with an example? How does a recursive function differ from iterative function?		III	CO2
3D-5	Implement a recursive function to print the numbers in Factorial of given integer?		III	CO2
3D-6	Implement a non-recursive function to print Fibonacci series up to a given number.		III	CO2
3D-7	Develop a C program to find maximum and minimum element in an array.		III	CO3
3D-8	Explain String handling functions with examples.		II	CO3
3D-9	Explain String Concatenation and write a C program to concatenate two strings?		III	CO3
3D-10	Write a c program to read any two multi dimensional arrays and print the multiplication of two arrays?		III	CO3
Unit-IV : Pointers and File handling				
	Objective Questions		**BT Level**	**Course Outcome**

4C-1	Whats is the output of the following C program? ( )
	#include<stdio.h>
	int main()
	{
	int *p,a=10;
	P=&10; Printf("%d",*p);
	return 0;
	}
	a.10 b. a
	c. address of a d. compilation error
			III	CO3

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4C-2	What is the output of this program? ( )
	#include<stdio.h>
	#define x 3
	int main()
	{
	  int i; i=x*x*x; printf("%d",i); return 0;
	}
	
	A.27 B. x is not declared C. No Output D. Garbage value.
		III	CO3

4C-3	------------------- C function used to move current pointer to the beginning of file.? ( ) a) rewind() b) fseek( ) c) gets( ) d) getchar( )	I	CO3

4C-4	The program will allocate ………. Bytes to ptr. Assume sizeof(int)=4. ( )
	#include<stdio.h>
	#include<stdlib.h>
	 int main()
	{
	 int *ptr;
	ptr=(int*)malloc(sizeof(int)*4);
	ptr=realloc(ptr,sizeof(int)*2);
	return 0;
	}
	
	a.2 b.4 c.8 d.None
		III	CO3

4C-5	What is the output of the following C program?
	#include<stdio.h>
	int main()
	{
	int *p,a=10;
	p=&10;
	printf("%d",*p);
	return 0;
	}
	a.10 b.8 c. address of a d. compilation error
		III	CO3

4C-6	What would be the equivalent pointer expression for referring to the array element a[i][j][k][l]? A)(((*(a+i)+j)+k)+l) ( ) B)*(*(*(*(a+i)+j)+k)+l) C)(*(*(a+i)+j)+k+l) D)*((a+i)+j+k+l)	III	CO3
4C-7	----------------------header files must necessarily be included to use dynamic memory	I	CO3

	allocation functions? ( ) a) Stdlib.h b)string.h c)math.h d)conio.h		

4C-8	What is the output of this program? ( )
	#define square(x) x*x
	int main()
	{
	int i; i=27/square(3); printf ("%d", i); return 0;
	}
	A.9 B. Compilation error C.3 D.27
		III	CO3

4C-9	What will be the output of the following C code? ( )
	#include<stdio.h>
	#if A==1
	 #define B 0
	#else
	#define B1
	#endif
	int main()
	{
	printf("%d",B);
	return 0;
	}
	a)0 b)1 c)01 d)None of the above
		III	C03

4C-10	Choose a correct statement about C file "R" mode operation using fopen. fopen("abc.txt","r"); ( ) A) If the file abc.txt is found,fopen returns a FILE pointer. B) if the file abc.txt is not found,fopen returns NULL or 0. C) File abc.txt is only opened in Read Mode.Now write operation is performed. D) All the above	II	CO3
4C-11	w mode is used for----------------------- ( ) a)write data in to file b)read data from file c)read,write data from file d) updating data in file	I	Co3
4C-12	Which function not used for dynamic memory allocation-------------- ( ) a)mal loc( ) b) calloc( ) c) realloc( ) d) strcpy( )	I	CO3
	FILL IN THE BLANK QUESTIONS	**BT Level**	**Course Outcome**
4F-1	Pointer declaration --------------------------	I	CO3
4F-2	fscanf() is used for--------------------------	II	CO3
4F-3	malloc|() syntax--------------------------	I	CO3
4F-4	-----------------------function is used to deallocate from memory allocation .	I	CO3

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4F-5	--------------------function is used to increase the size of array	IV	CO3
4F-6	puts() syntax------------------	II	CO3
4F-7	ftell() is used for---------------	I	CO3
4F-8	Block I/O fuctions are-------------	IV	CO3
4F-9	Pointer is used for--------------------	I	CO3
4F-10	One or more pointer points to the same type of structure is called----------------	II	CO3
	MATCH THE FOLLOWING		

4M-1	a. free( ) i) int *ptr=(int*)malloc(5*sizeof(int));
	b. calloc( ) ii)free(ptr);
	c. realloc( ) iii) ptr=realloc(ptr,10*sizeof(int));
	d. malloc( ) iv) int *ptr=(int*)calloc(5,sizeof(int));
		I	CO3

4M-2	a. Formatted I/O functions i) fputc( ),fgetc( ) b. File open close functions ii) fprintf ( ),fscanf( ) c. Random access functions iii) fopen( ),fclose( ) d. Character I/O functions iv) rewind( ),ftell( )	I	CO3
4M-3	a. Command line arguments i) fgets( ),fputs( ) b. Conditional compilation ii) void main(int argc,char *argv[ ]) c. macros iii) # if,# else if d. line I/O functions iv) # define,# undefine	I	CO3
	5- MARK QUESTIONS		

4D-1	Classify the following
	        a) Pointers to arrays
	        b) Pointers to structure
		IV	CO3

4D-2	Discuss about the following with an example . a) malloc() b) calloc() c) realloc() d) free()	II	CO3
4D-3	Explain about self-referential structures?	II	CO3
4D-4	Explain the purpose and usage of preprocessor directives.	I	CO3
4D-5	How to allocate memory for arrays of different data types?(dynamic memory allocation)	I	CO3
4D-6	Explain the purpose and usage of preprocessor directives.	I	CO3

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4D-7	Explain about Random Access using fseek , ftell and rewind functions?	II	CO3
4D-8	Explain about command line arguments with an example?	II	CO3
4D-9	Write a C program to read an email address from user using scanf function. The code should accept only email addresses and store user name and domain name separately.(Eg if user supplies xyz@gmail.com username is xyz and domain name is gmail.com)	VI	CO3
4D-10	Develop a C program to combine contents of two files in a third file and display the data from third file.	III	CO3
	Unit-V : Derved types and basic algorithams		
	Objective Questions	**BT Level**	**Course Outcome**
5C-1	Given an array arr={12,34,47,62,85,92,95,99,105} and key=34;what are the mid values(corresponding array elements) generated in the first and second iterations of binary search? ( ) a.85 and 12 b.85 and 34 c.62 and 34 d.62 and 47	III	CO4
5C-2	Which of the following is a User-defined data type? ( ) A)typedef int Boolean; B)typedef enum{Mon,Tue,Wed,Thu,Fri} Workdays; C)struct{char name[10],int age; D)all of the mentioned	I	CO3
5C-3	Union differs from structure in the following way ( ) A. All members are used at a time B. Only one member can be used at a time C. Union cannot have more members D. Union initialized all members as structure	I	CO3

5C-4	What will be the size of the following structure? ( )
	 #include <stdio.h>
	 struct temp
	 {
	    int a[10];
	    char p;
	 };
	    a. 5 b. 11 c. 41 d. 44
		II	CO3

5C-5	Which among the following is never possible in C when members are different in a structure and union? ( ) //Let P be a structure	II	CO3

	Sub. Code & Title	(R22CSE1116) C PROGRAMMING FOR ENGINEERS	
	Academic Year: 2022-23	Year/Sem.	I-I/ECE (A,B)
	Faculty Name & Designation	D.MOUNIKA\ANITHA	

	//Let Q be a union a. sizeof(P) is greater than sizeof(Q) b. sizeof(P) is less than sizeof(Q) c. sizeof(P) is equal to sizeof(Q) d. None of the above		
5C-6	Which of the following are themselves a collection of different data types? ( ) a) String b) Structures c)Char d) None of the above	I	CO3
5C-7	Members of a union are accessed as_____. ( ) a) union-name.Member b) union-pointer->member c) Both a & b d) None of the mentioned	I	CO3
5C-8	It is not possible to create an array of pointer to structures. ( ) a) TRUE b) FALSE c) May BE D)Can't Say	I	CO3
5C-9	Time complexity to search element in binary search is ( ) a)O(n) b) O(logn) c)O(n) d)O(n^2)	IV	CO4
5C-10	Arrange the following elements in ascending order using Bubble sort.and no of iterations required ------------------ ( ) 12, 40, 3, 13, 47, 55, 10. a) 6 b) 7 c) 5 d)4	III	CO4
5C-11	The given array is arr = {1, 2, 4, 3}. selection sort is used to sort the array elements. How many iterations will be done to sort the array? ( ) a) 4 b) 2 c) 1 d) 0	III	CO4

5C-12	What will be the output of the below code ( )
	int main()
	 {
	enum days {MON=-1, TUE, WED=6, THU, FRI, SAT};
	printf("%d, %d, %d, %d, %d, %d\n", MON, TUE, WED, THU, FRI, SAT);
	 return 0;
	 }
	A) -1, 0, 1, 2, 3, 4 B) -1, 2, 6, 3, 4, 5
	B) -1, 0, 6, 2, 3, 4 D) -1, 0, 6, 7, 8, 9
		III	CO3

	1- MARK QUESTIONS	BT Level	Course Outcome
5F-1	-------------------- searching can be performed recursively.	I	CO4
5F-2	Time complexity of insertion sort in average case--------------------	I	CO4
5F-3	Time Complexity of bubble sort best case is---------------------	I	CO4
5F-4	Searching techniques are----------------------	I	CO4

	Sub. Code & Title	**(R22CSE1116) C PROGRAMMING FOR ENGINEERS**	
	Academic Year: 2022-23	**Year/Sem.**	**I-I/ECE (A,B)**
	Faculty Name & Designation	**D.MOUNIKA\ANITHA**	

5F-5	Sorting any 2 real time applications --------------------------	I	CO4
5F-6	----------------operator connects the structure name to its member name.	I	CO3
5F-7	--------------------sorting is better.	I	CO4
5F-8	enum is used for--------------------------	I	CO3
5F-9	Variables inside structure called as----------------------	I	CO3
5F-10	Internal sorting examples----------------------	I	CO4
	MATCH THE FOLLOWING		
5M-1	a. Structure variable i) struct student *s1; b. union ii) structstudent s1[size]; c. array of structure iii) union student u1; d. structure pointer variable iv) struct student s1;	I	CO4
5M-2	a. selection sort i) O(n^2) b. linearsearch ii) O(log n) c. binarysearch iii) O(n^2) d. Bubble sort iv) O(n)	I	CO4
5M-3	a. Insertion sort i) based on mid value b. Linear search ii) union student[size]; c. binary search iii) sequential search d. array of union iv) O(n)	I	CO4
	5- MARK QUESTIONS		
5D-1	Define a structure. How to initialize a structure ? Explain with an example.	I	CO3
5D-2	Write a c program for an employee containing the details such as empno, empname, department and name and salary, The structure has to store 20 employees in an organization.Use the appropriate method to define the above details and define a function that display the contents?	VI	CO3
5D-3	Explain Linear search technique with example. Develop a C program on Linear search?	III	CO4
5D-4	Explain Binary search technique with example. Develop a C program on Linear search?	III	CO4
5D-5	Develop a C program on Bubble sort.	III	CO4
5D-6	Implement a C program on Insertion sort.	III	CO4
5D-7	Construct a C program on Selection sort. And Explain with	III	CO4

Sub. Code & Title		(R22CSE1116) C PROGRAMMING FOR ENGINEERS	
Academic Year: 2022-23		Year/Sem.	I-I/ECE (A,B)
Faculty Name & Designation		D.MOUNIKA\ANITHA	

	an example?		
5D-8	Explain Order of Complexity.	II	CO4
5D-9	Choose any one of the sorting technique and Sort the following numbers 34, 5, 67, 8, 435, 2,78,45,12	III	CO4
5D-10	Estimate the complexity to search 34,31,78 by using linear search technique with given data 34, 5, 67, 8, 2,78,45,12,48,36 .Justify?	VI	CO4

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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I B.Tech. I Semester End Examination- Model Paper 2022-23

C PROGRAMMING FOR ENGINEERS

(R22CSE1116)

(ECE A&B)

Duration: 3 Hrs   **Maximum Marks: 60 M**

Blooms Taxonomy : (I-Remembering / II-Understanding / III-Applying / IV-Analyzing / V-Evaluating / VI-Creating).
Course Outcomes : CO.

		PART – A		(10Q x 1M = 10M
		Answer *All* Questions	Marks	Course Outcomes	BT Levels
	A	fine Algorithm and write its characteristics.	1	CO1	I
	B	Evaluate the value of z = x + y * x/4 % 2-1 (x=1,y=2)	1	CO1	V
	C	Distinguish between nested if and else if ladder?	1	CO1	II
	D	ite a C program to print any message on Console?	1	CO1	III
	E	tinguish between call by value and call by reference?	1	CO2	II
1	F	fine array of strings?	1	CO3	I
	G	cuss about initialization of pointer variables? How to access a variable through a pointer?	1	CO3	II
	H	alyze the usage of pointers in self-referential structures?	1	CO3	IV
	I	fine Searching.	1	CO4	I
	J	Define Complexity. Analyze and Write the complexity of the Linear &Binary search, Bubble sort, insertion sort and selection sort.	1	CO4	IV

		PART – A		(5Q x 10M = 50Mark
		Answer *All* questions choosing *ONE* from each unit			
2		**UNIT-I** **A)** Explain about creation and running of a program? **(Or)**	10	CO1	II
		B) Construct to find the roots of a quadratic a Flowchart equation. .		CO1	III
3		**UNIT-II** **A)** Develop a C program to check whether a given integer is prime or not? **(or)**	10	CO1	III
		B) Analyze thedifferences between while and do while loop ,Write a c program to find sum of 1 to n numbers using for loop?		CO1	IV
4		**UNIT-III** **A)** Explain parameters and return types of a function. *(or)*	10	CO3	II
		B) Explain about recursive function with an example? How does a recursive function differ from iterative function?		CO4	II

5	**UNIT-IV** **A)** Explain about Random Access using fseek , ftell and rewind functions? *(or)* **B)** Explain the purpose and usage of preprocessor directives.	**10**	CO3 CO3	II I
6	**UNIT-V** A) Estimate the complexity to search 34,31,78 by using linear search technique with given data 34, 5, 67, 8, 2,78,45,12,48,36 .Justify? *(or)* *A)* Define a structure. How to initialize a structure ? Explain with an example.	**10**	CO4 CO3	VI I

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EXTERNAL EXAM PREVIOUS QUESTION PAPERS

BR-18
Subject Code: R18CSE1101

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)
Recognized under 2(f) and 12(B) of UGC Act 1956

I B.Tech – II Semester –End Examinations (Regular) May - 2019
PROGRAMMING FOR PROBLEM SOLVING
(Common to EEE, CSE, IT)

24.05.2019

Max Marks: 70M

Duration: 3 Hrs

Section – A

Answer _All_ the following questions

Marks: 5Qx4M = 20M

1. What is type casting?
2. Give example for passing parameters to a function using call by reference.
3. What are the limitations of recursive functions?
4. Write about scanf and printf.
5. Discuss the complexity of bubble sort algorithm.

Section – B

Answer any _FIVE_ questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT - I

6. What is an algorithm? Write an algorithm for finding minimum and maximum numbers of a given set.

(OR)

7. Explain about conditional branching techniques in C.

UNIT - II

8. What is a structure? Explain about defining and initializing of structures. What are the differences between structures and unions?

(OR)

9. Write about C standard functions and libraries.

UNIT - III

10. What is recursion? Write a C program for finding factorial of a given number.

(OR)

11. What is dynamic allocation? Explain about allocating memory for arrays of different data types.

UNIT - IV

12. a) What is a binary file?
    b) Explain about stdin, stdout and stderr.

(OR)

13. Write a C program for creating and reading text into a file.

UNIT - V

14. Write a C program for implementing selection sort and explain with an example.

(OR)

15. Write a C program for binary search.

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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)(Recognized under 2(f) and 12(B) of UGC Act 1956)

I B.Tech – II Semester –End Examinations (Regular/Supply) November-2020
R18CSE1101 – PROGRAMMING FOR PROBLEM SOLVING
(Common to CSE & IT)

Duration:2 Hrs   23.11.2020 (AN)   Max Marks:70M

Section – A

Answer Any **Three** of the following questions.   Marks: 3Qx6M =18M

1. List few differences between while and do-while loops.
2. What is a self-referential structure?Explain.
3. Present the advantages of dynamic memory allocation.
4. Explain the purpose and usage of ftell and rewind functions.
5. What is time complexity? How it is calculated and expressed?

Section – B

Answer **FOUR** questions from the following

Marks: 4Qx13M = 52M

UNIT – I

6. Draw a flowchart that illustrate the process of traversing from one place to other in Hyderabad through metro.

(OR)

7. What are storage classes? Explain the purpose of static and extern storage classes with suitable programming examples.

UNIT - II

8. Differentiate between call-by-value and call-by-reference parameter passing techniques.

(OR)

9. Write a C program to read and print details (name, roll number and marks in 5 subjects) of 20 students using structures.

UNIT - III

10. Differentiate between array and pointers. Explain the pros and cons of each.

(OR)

11. Write a C program to create an array of integers with a user specified size (dynamic), read contents into it and increase its size (re allocate size) by 5 whenever It is full.

UNIT - IV

12. Explain the purpose and usage of preprocessor directives if, ifdef and ifndef.

(OR)

13. Write a C program to read an email address from user using scanf function. The code should accept only emails addresses and store user name and domain name separately. [Eg. If user supplies xyz@abc.com username will be xyz and domain name is abc.com]

UNIT-V

14. Present algorithms for linear search and binary search. Give the merits and demerits of each.

(OR)

15. Write a C program for implementing insertion sort algorithm.

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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution under UGC, New Delhi)(Recognized under 2(f) and 12(B) of UGC Act 1956)

I B.Tech - I Semester –End Examinations (Regular/Suppl.) Dec/Jan-2019-20

R18CSE1101 – PROGRAMMING FOR PROBLEM SOLVING

(Common to Civil,Mech & ECE)

Duration: 3 Hrs   30.12.2019   Max Marks: 70M

Section – A

Answer _All_ the following questions   Marks: 5Qx4M = 20M

1. Draw the flowchart for finding roots of quadratic equation.
2. Write the difference between strcpy() & strcmp().
3. Define pointer & write its applications.
4. Explain about the file input &output functions with syntax.
5. Differentiate Linear Search and Binary Search.

Section – B

Answer any _FIVE_ questions by choosing at least one from each Unit

                               Marks: 5Qx10M = 50M

UNIT – I

6. Explain the different types of operators in C language with examples.

(OR)

7. a) Write a C program to find the greatest of three numbers.
   b) Write a C program to perform Addition of two matrices.

UNIT –II

8. a) Write a C program to print employee information using union.
   b) Define function? Explain the different categories of function.

(OR)

9. a) Explain the process of declaring string and Write a C program using i)gets ii) getchar.
   b) Explain the different categories of functions for example(function with no arguments & no return value).

UNIT - III

10. a) Write a C program to illustrate the use of indirection operator '*' to access the value pointed by program.
    b) Write a C recursive program for fibonacci series.

(OR)

11. a) Explain the dynamic memory allocation functions.
    b) What is a command line argument and give an example?

UNIT-IV

12. a) Explain the various preprocessor commands in C.
    b) Write a C program to copy contents of one text file to another text file.

(OR)

13. Explain the different types of files & write a program to illustrate the error handling on fil

UNIT-V

14. Explain bubble sort with the algorithm or with a C program.

(OR)

15. Explain the different searching and sorting techniques with example.

BR-22   🏛 **SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY**   **D4**
I B.Tech - I Semester - I Mid Term Examination, December – 2022
(R22CSE1116) C PROGRAMMING for ENGINEERS
(For ECE)
Duration: 2 Hrs   **Dt: 31-12-2022, Day-2 (FN)**   **Max Marks: 30M**
Part – A

Answer *All:* multiple choice questions.   **Marks: 10Qx1/2M = 5M**

* (L1-Remembering, L2-Understanding, L3-Applying, L4-Analyzing, L5-Evaluating, and L6-Creating.)

		*Blooms Taxonomy Levels	**Course Outcomes**
1. 'a' is an integer value then a=5/2 will return. [ ] A) 2.5 B) 2 C) 2.5000000 D) 2.000000.		I	CO1
2. nich is not a keyword in C? [ ] A) typedef B) Const C) Near D) int.		I	CO1
3. What is #include <stdio.h>? [ ] A) Preprocessor directive B) Inclusion directive C) File inclusion directive D) None of the mentioned.		I	CO1
4. ------------- is the 16-bit compiler allowable range for integer constants. [ ] A) -32768 to +32767 B) -128 to +127 C) 3.14e to 6.78e D) 0 to 655355.		I	CO1
5. If a=8,b=3,c=-5 are integers then a*b/c will give the value. [ ] A) -4 B) 2.8 C) +2.8 D) +3.		I	CO1
6. How many times will the following loop execute? [ ] for(j=1;j<=10;j=j-1) A) Forever B) Never C) 0 D) 1.		IV	CO1
7. Which of the following is the correct order of operators for the evaluation for the expression z = x + y * z/4 % 2-1 [ ] A)* / % + - = B) - % ? * + = C) / * % - + = D) * / % - + =.		II	CO1

8. What is the output of this program?   [   ]
 int main()
 {
 printf("variable! %d", x); return 0;
  }
 A) variable! x   B) variable! followed by a junk value
 C) Compile time error   D) variable!.
		II	CO1

9. Every C Program should contain which function Every C Program should contain which function? [ ] A) printf() B) show() C) scanf() D) main().		I	CO2
10. In which parameter passing mechanism, actual argument values are unchanged? [ ] A) Call By value B) Call by reference C) by address D) by name.		I	CO2

Answer _All:_ fill in the blank questions.   **Marks: 6Qx1/2M = 3M**

11. The standard mathematical functions are included in the ------------ header file.   I   CO1
12. An ------------ storage class can be used to declared global variable known to all the   I   CO1
    functions in the file.
13. What is the ouput of below given code-----------------   III   CO1
    Void main()
    {
        Printf("hello world');
    }.
14. void main()   III   CO1
    {
    int a=3,b=5,c;
    c=a+++++b+--a+b--;
    }
    Find the valueof a=-------, b=---------, c=---------.
15. Associativity of conditional operator---------------, increment operators----------.   I   CO1
16. The parameters in a function definition are called as ----------------------parameters.   I   CO2

Answer _All:_ Match the following questions.   **Marks: 2Qx1M = 2M**

17. A) int   i) %lf   II   CO1
    B) float   ii) %c
    C) double   iii) %f
    D) char   iv) %d
18. A) if   i) more than two conditions   I   CO1
    B) if else   ii) one condition
    C) else if ladder   iii) repeating same statement
    D) while   iv) more than one conditions

Part – B

Answer any _FOUR_ questions.   **Marks: 4Qx5M = 20M**

19. Construct a Flowchart to find the roots of a quadratic equation.   III   CO1
20. Define identifier? List out the rules to Construct identifier? Classify the following as valid IV   CO1
    /invalid identifiers.
    a) Num2   b)$num1   c)+add   d) a-2   e) 199space.
21. Explain about creation and running of a program?   II   CO1
22. t the differences between while and do while loop, Write a c program to find sum of 1 to n numbers using for loop?   III   CO1
23. Construct a program to find factorial of a given number?   III   CO1
24. Develop a C program to pass an array as an argument to function?   II   CO2

BR-22   🏵 **SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY**   **D4**
I B.Tech - I Semester - II Mid Term Examination, March – 2023
(R22CSE1116) C PROGRAMMING for ENGINEERS
(For ECE)

Duration: 2 Hrs	Dt: 04-03-2023, Day-2 (FN)	Max Marks: 30M

Part – A

Answer _All:_ multiple choice questions.   **Marks: 10Qx1/2M = 5M**
* (L1-Remembering, L2-Understanding, L3-Applying, L4-Analyzing, L5-Evaluating, and L6-Creating.)

		*Blooms Taxonomy Levels	Course Outcomes

1. Assuming int is of 4bytes, what is the size of int arr[15].   [   ]   I   CO3
   A) 15   B) 19   C) 11   D) 60.

2. What is the output?   [   ]   II   CO3
   ```
   void main()
   {
     int a[4]={5,6,7,8};
     printf("%d",a[1]);
   }
   ```
   A) 5   B) 6   C) 8   D) None of these.

3. What is the output of this program?   [   ]   III   CO3
   ```
   #include<stdio.h>
   #define x 3
   int main()
   {
    int i;  i=x*x*x;  printf("%d",i);  return 0;
   }
   ```
   A) 27   B) x is not declared   C) No Output   D) Garbage value.

4. What is the output of the following 'C' program?   [   ]   III   CO3
   ```
   #include<stdio.h>
   int main()
   {
   int *p,a=10;
   p=&10;
   printf("%d",*p);
   return 0;
   }
   ```
   A) 10   B) 8   C) address of a   D) compilation error.

5. _____-header files must necessarily be included to use dynamic memory allocation functions.   [   ]   I   CO3
   A) Stdlib.h   B) string.h   C) math.h   D) conio.h.

6. Choose a correct statement about C file "R" mode operation using fopen.   [   ]   II   CO3
   fopen("abc.txt","r").
   A) If the file abc.txt is found, fopen returns a FILE pointer
   B) if the file abc.txt is not found, fopen returns NULL or 0
   C) File abc.txt is only opened in Read Mode. Now write operation is performed
   D) All the above.

7. Given an array arr={12,34,47,62,85,92,95,99,105} and key=34;what are the mid   III   CO4

values(corresponding array elements) generated in the first and second iterations of binary search?   [   ]

   A) 85 and 12   B) 85 and 34   C) 62 and 34   D) 62 and 47.

P.T.O.

8. What will be the size of the following structure?   [II   CO3
    ]
    #include <stdio.h>

    struct temp
    {
       int a[10];
       char p;
    };
       A) 5   B) 11   C) 41   D) 44.

9. Members of a union are accessed as_____.   [   ]   I   CO3
       A) union-name.Member   B) union-pointer->member
       C) Both a & b   D) None of the mentioned.

10. Arrange the following elements in ascending order using Bubble sort.and no of iterations   III   CO4
    required _____   [   ]
    12, 40, 3, 13, 47, 55, 10.
       A) 6   B) 7   C) 5   D) 4.

Answer _All:_ fill in the blank questions.   **Marks: 6Qx1/2M = 3M**

11. Array elements always stored in_____continuous memory allocation.   I   CO2
12. malloc|() syntax_____   I   CO3
13. puts() syntax_____   II   CO3
14. Block I/O fuctions are_____   IV   CO3
15. Time Complexity of bubble sort best case is_____   I   CO4
16. _____sorting is better.   I   CO4

Answer _All:_ Match the following questions.   **Marks: 2Qx1M = 2M**

17. a) Formatted I/O functions   i) fputc( ),fgetc( )   I   CO3
    b) File open close functions   ii) fprintf ( ),fscanf( )
    c) Random access functions   iii) fopen( ),fclose( )
    d) Character I/O functions   iv) rewind( ),ftell( ).

18. a) Structure variable   i) struct student *s1   I   CO4
    b) union   ii) structstudent s1[size]
    c) array of structure   iii) union student u1
    d) structure pointer variable   iv) struct student s1.

Part – B

Answer any _FOUR_ questions.   **Marks: 4Qx5M = 20M**

19. Implement a non-recursive function to print Fibonacci series up to a given number.   III   CO2
20. Explain String Concatenation and write a 'C' program to concatenate two strings.   III   CO3
21. Classify the following: a) Pointers to arrays   and b) Pointers to structure.   IV   CO3
22. Explain the purpose and usage of preprocessor directives.   I   CO3
23. Explain about Random Access using fseek, ftell and rewind functions.   II   CO3
24. Define a structure. How to initialize a structure? Explain with an example.   I   CO3

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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IB.Tech.ISemester(REGULAR)End Examinations, March – 2023.
(R22CSE1116) C PROGRAMMING FOR ENGINEERS

23/03/2023   (For ECE)   Day- 3(FN)

Duration: 3 Hrs   **Maximum Marks: 60M**

Blooms Taxonomy : **(I-Remembering, II-Understanding, III-Applying, IV-Analyzing, V-Evaluating and VI-Creating)**

Course Outcomes : CO

PART – A

Answer ALLthe following questions.(10Qx1M=10M)

1.	a)	Define I/O devices with examples.	I	CO1
	b)	Draw the flowchart to compute simple interest.	III	CO1
	c)	What is an expression in C language?	I	CO1
	d)	Specify the syntax used for the 'for' loop statement.	VI	CO1
	e)	How to declare and initialize one-dimensional and two-dimensional arrays with examples.	II	CO3
	f)	Distinguish between Call by value and call by reference.	II	CO2
	g)	Why the addition of two pointers is impossible?	II	CO3
	h)	Analyze the usage of pointers in Self – referential Structures.	IV	CO3
	i)	Differentiate Structure and Union in C.	II	CO3
	j)	List the order of complexity for Bubble Sort in terms of best, worst, and average case.	I	CO4

PART – B

Answer FIVE questions choosing at least one from each unit.(5Qx10M=50M)

UNIT-I

2.	With a neat diagram explain the general structure of the C program with an example.	IV	CO1

(OR)

	State pseudo-code? Explain with example, how it is used as a problem-solving tool as well as compare pseudo code and Algorithm.	II	CO1

UNIT-II

3.	Write an algorithm and C program to swap the two variables without using third variables.	VI	CO2

(OR)

	Illustrate the switch statement with syntax and an example program.	IV	CO2

UNIT-III

4.	Design a recursive C function to print the first n Fibonacci numbers.	VI	CO2

(OR)

	Write a C program to multiply two'm × n' matrices and explain How to access array elements?	III	CO3

UNIT-IV

5.	Define a pointer. How to initialize and declare pointer variables? Explain the same with examples.	II	CO3

(OR)

	Write a program to open a file and read the file and print the file contents in reverse	III	CO3

order.

UNIT-V

6. Design a C Program to define a Structure Student that will contain the roll number, name, and total marks of a student. The program will ask the user to input the details of 5 students and print the details of all the students whose total marks are greater than a given value.   VI   CO3

(OR)

Define insertion sort. Write a C program for insertion sort.   III   CO4