

Enrollment No.....



Faculty of Engineering / Science

End Sem Examination Dec-2023

EN3ES27 / BC3ES10 Basic Programming with C

Programme: B.Tech. / B.Sc.      Branch/Specialisation: All / Computer Science

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. What is the purpose of a compiler in programming? **1**  
 (a) To convert high-level code to machine code  
 (b) To run the program  
 (c) To debug the program  
 (d) To store data
- ii. Which of the following is a high-level programming language? **1**  
 (a) Assembly language (b) C++  
 (c) Machine language (d) Binary code
- iii. Which of the following is NOT a valid identifier in C? **1**  
 (a) my\_variable (b) 123variable  
 (c) variable (d) Var123
- iv. What is the value of 'y' after the following code execution in C? **1**  

```
int x = 5;
int y = ++x + 2;
```

 (a) 5 (b) 6 (c) 7 (d) 8
- v. Which loop is guaranteed to execute at least one time? **1**  
 (a) While (b) Do while  
 (c) Both (a) and (b) (d) None of these
- vi. The conditional operator is also known as- **1**  
 (a) Relational operator (b) Binary operator  
 (c) Ternary operator (d) Arithmetic operator
- vii. How do you access the first element of an array arr in C? **1**  
 (a) arr[1] (b) arr[0] (c) arr[2] (d) arr[10]
- viii. Array elements are always stored in \_\_\_\_\_ memory locations. **1**  
 (a) Sequential (b) Random  
 (c) Both (a) and (b) (d) None of these

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- ix. Which of the following is a predefined function? **1**  
 (a) add() (b) sub() (c) strcpy() (d) None of these
- x. Types of function in C language- **1**  
 (a) Library Function (b) User Defined Function  
 (c) Both (a) and (b) (d) None of these
- Q.2 i. What is software? What are types of software? **2**  
 ii. Explain the generation of Programming Languages. **3**  
 iii. Differentiate between Algorithm, Flow Chart and Pseudo-Code. **5**
- OR iv. Describe the role of compilers and interpreters in programming languages. Explain the advantages and disadvantages of using each approach. **5**
- Q.3 i. Define Identifier. What are the rules of identifier? **2**  
 ii. Discuss the difference between the pre-increment and post-increment operators (++i and i++) in C. When would you choose one over the other? **3**  
 iii. What are the basic data types in C? Describe each data type and provide an example of when to use them. **5**
- OR iv. Define Operator. Explain the types of operators with example. **5**
- Q.4 i. How to use the if else statement in C? **2**  
 ii. Write a program to check whether a given number is even or odd. **3**  
 iii. Explain different types of loops in C. **5**
- OR iv. Explain break, continue and goto statement. **5**
- Q.5 i. Define string in C. What are the string operations in C? **4**  
 ii. Define one dimensional and two-dimensional arrays in C with example. **6**
- OR iii. Write a program for multiplication of two matrix in C. **6**
- Q.6 Attempt any two:  
 i. Differentiate between user-defined and pre-defined functions. **5**  
 ii. Write a C program to illustrate user-defined function. **5**  
 iii. Write a C program to illustrate recursive function. **5**

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# Scheme of Marking

## Basic Programming With C (T) - EN3ES27 (T)

Q.1	i)	What is the purpose of a compiler in programming?	1
	a)	To convert high-level code to machine code	
	ii)	Which of the following is a high-level programming language?	1
	b)	C++	
	iii)	Which of the following is NOT a valid identifier in C?	1
	b)	123variable	
	iv)	What is the value of 'y' after the following code execution in C?	1
		int x = 5;	
		int y = ++x + 2;	
	d)	8	
	v)	Which loop is guaranteed to execute at least one time?	1
	b)	do while	
	vi)	The conditional operator is also known as	1
	c)	Ternary operator	
	vii)	How do you access the first element of an array arr in C?	1
	b)	arr[0]	
	viii)	Array elements are always stored in _____ memory locations.?	1
	a)	Sequential	
	ix)	Which of the following is a predefined function?	1
	c)	strcpy()	
Q.2	x)	Types of function in C language	1
	c)	Both A and B	
Q.2	i.	What is software? What are types of software?	2
		Definition – 1 Mark Types – 1 mark	

OR	ii.	Explain the generation of Programming Languages.	3
		Description of 5 generations of PL – 3 Marks	
	iii.	Differentiate between Algorithm, Flow Chart and Pseudo-Code.	5
		Definition of Algorithm – 1 Mark	
		Definition of Flow chart – 1 Mark	
		Definition of Pseudo-Code – 1 Mark	
		Example – 2 Marks	
	iv.	Describe the role of compilers and interpreters in programming languages. Explain the advantages and disadvantages of using each approach.	5
		Compiler – 1 Mark	
		Interpreter – 1 Mark	
Q.3		Advantages – 1.5 Mark	
		disadvantages – 1.5 Mark	
	i.	Define Identifier. What are the rules of identifier?	2
		Definition – 1 mark	
		Rules – 1 mark	
	ii.	Discuss the difference between the pre-increment and post-increment operators (++i and i++) in C. When would you choose one over the other?	3
		Pre-increment operator – 1 mark	
		Post-increment operator – 1 mark	
		Description – 1 mark	
	iii.	What are the basic data types in C? Describe each data type and provide an example of when to use them.	5
OR		Definition – 2 marks	
		Types – 3 marks	
	iv.	Define Operator? Explain the types of operators with example.	5
		Definition – 1 marks	
		Types – 4 marks	
Q.4	i.	How to use the if else statement in C?	2
		Definition and example 1 mark each	
	ii.	Write a program to check whether a given number is even or odd.	3
		Program – 3 marks	
	iii.	Explain different types of loops in c.	5
		For loop with syntax – 1 mark	
		While loop with syntax – 1 mark	
		Do while loop with syntax – 1 mark	

OR	iv.	Example –	2 marks	<b>5</b>
		Explain break, continue and goto statement.		
		Break statement –	1 mark	
		continue statement –	1 mark	
		goto statement –	1 mark	
		example –	2 marks	
Q.5	i.	Define string in c. What are the string operations in C?		<b>4</b>
		Definition –	2 marks	
		Operations –	2 marks	
	ii.	Define one dimensional and two dimensional arrays in c with example.		<b>6</b>
		1-D array -	3 marks	
		2-D array –	3 marks	
OR	iii.	Write a program for multiplication of two matrix in c. Program – 6 marks		<b>6</b>
Q.6		Attempt any two:		
	i.	Differentiate between user-defined and pre-defined functions.		<b>5</b>
		User-defined function –	2.5 marks	
		Pre-defined function –	2.5 marks	
	ii.	Write a C program to illustrate user-defined function.		<b>5</b>
		Program –	5 marks	
	iii.	Write a C program to illustrate recursive function.		<b>5</b>
		Program –	5 marks	

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