Enrollment No......................................

Faculty of Engineering / Science
End Sem Examination Dec 2024
EN3ES27 / BC3ES10 Basic Programming with C

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

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.

			Marks	BL	PO	CO	PSO
Q.1	i.	Which of the following is not a characteristic of an algorithm? (a) Input (b) Output (c) Infinite steps (d) Definiteness	1	1	3	1	3
	ii.	Pre-processor directives are translated by the (a) Pre-processor (b) Compiler (c) Linker (d) Editor	1	1	3	1	2

	iii.	`#include <stdio.h>`
		`int main()`
		`{`
		`int i = 10;`
		`i = i% 3;`
		`printf("%d\n", i);`
		`return 0;`
		`}`
		(a) 2 (b) 1
		(c) 1.6 (d) 5
			1	4	2	2	3,4

	iv.	Which of the following is true for variable names in C? (a) Reserved word can be used as variable name. (b) Variable names cannot start with a digit. (c) Variable names can start with any special symbols. (d) None of the above.	1	1	1	2	1,3
	v.	Which data types can be used in a switch case expression? (a) int, char (b) float, double (c) string, array (d) All to these	1	2	2	3	1,3
	vi.	Continue statement-	1	1	1	3	1,3

(a) Breaks loop and goes to next statement after loop

(b) does not break loop but starts new iteration

(c) Exits the program

(d) Starts from beginning of program

vii	Which function is used to compare two strings in C?	**1**	3	2	4	3,4
	(a) strcpy() (b) strcat()					
	(c) strlen() (d) strcmp()					
vii	Which one is correct declaration of array in c?	**1**	3	2	4	33,4
	(a) int arr[ ]; (b) int arr[10];					
	(c) int [10] arr; (d) arr[10] int;					
ix.	What is the primary purpose of a function prototype in C?	**1**	1	2	5	1
	(a) Declare a variable (b) Declare a function					
	(c) Define a function (d) Assign a value					
x.	What does the 'void' keyword indicate in a C function declaration?	**1**	2	2	5	3,4
	(a) Empty return type (b) Integer return					
	(c) Floating-point return (d) String return					

Q.2	i.	How can you relate algorithm and flow chart in c programming language?	**2**	3	4	1	3,4
	ii.	What is computing environment? Explain different types of computing environment?	**3**	1	1	1	1
	iii.	Explain different generations of programming languages.	**5**	2	1	1	1
OR	iv.	Explain compiler, interpreter, linker and loader with suitable diagram.	**5**	2	5	1	2

Q.3	i.	Define type casting with examples.	**2**	2	3	2	3,4
	ii.	What are operators? Explain different type of operators used in C language with example.	**8**	1	2	2	3,4
OR	iii.	Draw a flow chart and write a program to swap any two numbers using third variable and without using third variable.	**8**	5	4	2	3,4

Q.4	i.	Write a difference between for loop and do-while loop with example.	**3**	4	1	3	3,4
	ii.	Write a program in C to check whether a number is a prime number or not.	**7**	5	1	3	3,4
OR	iii.	Write a program to print series of number from 1-100 without using loop.	**7**	5	1	3	3,4

Q.5	i.	What is string? Explain different string library function with example.	**4**	1	3	4	3,4
	ii.	Write a program to arrange (sort) array elements in ascending or descending order.	**6**	5	3	4	3,4
OR	iii.	Write a program to perform multiplication of two matrix.	**6**	5	1	4	3,4

Q.6		Attempt any two:					
	i.	Distinguish between library functions and user defined functions in C and explain with examples.	**5**	4	2	5	2,3
	ii.	What is recursive function? Write syntax and example for recursive functions.	**5**	1	2	5	2,3
OR	iii.	Write a program in C to check if a given number is even or odd using the function.	**5**	5	1	5	3,4

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Marking Scheme
EN3ES27 Basic Programming with C

Q.1 i) (c) Infinite steps **1**

ii) (a) Pre-processor **1**

iii) #include <stdio.h> **1**
```
int main()
{
 int i = 10;
 i = i% 3;
 printf("%d\n", i);
 return 0;
 }
```
(b) 1

iv) (b) Variable names cannot start with a digit. **1**

v) (a) int, char **1**

vi) **1**
(b) does not break loop but starts new iteration

vii) (d) strcmp() **1**

viii) (b) int arr[10]; **1**

ix) (b)Declare a function **1**

x) (a)Empty return type **1**

Q.2 i How can you relate algorithm and flow chart in c programming language? **2**

Algorithm -   1 mark
Flow chart -   1 mark

ii. What is computing Environment? Explain different types of Computing Environment? **3**

What is computing Environment-   1 mark
types of Computing Environment-   2 marks

iii. Explain different generations of programming languages? **5**
generations of programming languages-   5 marks

OR iv. Explain compiler, interpreter, linker and loader with suitable diagram? **5**
Diagram -   1 mark
compiler, interpreter, linker and loader-   4 marks

Q.3 i. Define type casting with examples. **2**
type casting-   1 mark
syntax and example-   1 mark

ii. What are operators? Explain different type of Operators used in C language with example? **8**
Operators-   1 mark
type of Operators with example -   7 marks

OR iii. Draw a flow chart and also Write a program to swap any two numbers using third variable and without using third variable. **8**
flow chart   2 marks
program using third variable   3 marks
without using third variable   3 marks

Q.4 i. Write a difference between for loop and do-while loop with example? **3**
At least 3 difference -   3 marks

ii. Write a program in C to check whether a number is a prime number or not **7**

OR iii. Write a program to print series of number from 1-100 without using loop. **7**

Q.5 i. What is string? Explain different string library functions with example? **4**
String-   1 mark
string library functions-   3 marks

ii. Write a program to arrange (sort) array elements in ascending or descending order. **6**

OR iii. Write a program to perform multiplication of two matrix. **6**

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Q.6   Attempt any two:
- i.   Distinguish between Library functions and User defined functions in C and **5** Explain with examples.
  At least 5 difference-   5 marks
- ii.   What is recursive function? Write syntax and example for recursive **5** functions.
  recursive function-   2 marks
  syntax and example -   3 marks
- iii.   Write a program in C to check if a given number is even or odd using the **5** function.

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