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

Faculty of Engineering
End Sem Examination Dec 2024
EN3ES09 Fundamentals of Computer Science

Programme: B.Tech.   Branch/Specialisation: CSBS

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	CO	PO	PSO
Q.1	i.	An algorithm should have _____ well-defined inputs.	1	1	1	1	1

(a) 0   (b) 1
(c) 0 or more   (d) 1 or more

	ii.	Which data type is most suitable for storing a number 65000 in a 32-bit system?	1	1	1	1	1

(a) short
(b) int
(c) long
(d) double

	iii.	The switch statement is also called as-	1	1	2	1	1

(a) Choosing structure
(b) Selective structure
(c) Certain structure
(d) Bitwise structure

	iv.	What is an example of iteration in C?	1	1	2	1	1

(a) for   (b) while
(c) do-while   (d) All of these

	v.	Which of these can be a function return type?	1	1	3	2	2

(a) int
(b) float
(c) char
(d) All of these

vi. Which variable has the longest scope in the following C code? **1** 1 3 2 1

```
#include <stdio.h>
int q;
int main()
{
   int r;
   return 0;
}
int p;
```

(a) p   (b) q
(c) r   (d) Both (a) and (b)

vii. Comment on the following pointer declaration. **1** 1 4 2 2
int *ptr, p;
(a) ptr is a pointer to integer, p is not
(b) ptr and p, both are pointers to integer
(c) ptr is a pointer to integer, p may or may not be
(d) ptr and p both are not pointers to integer

viii. What will be the output of the following C code? **1** 1 4 2 1

```
#include <stdio.h>
int main()
{
   int *ptr, a = 10;
   ptr = &a;
   *ptr += 1;
   printf("%d,%d/n", *ptr, a);
}
```

(a) 10,10
(b) 10,11
(c) 11,10
(d) 11,11

ix. What will fopen will return, if there is any error while opening a file? **1** 1 5 3 1
(a) Nothing
(b) EOF
(c) NULL
(d) Depends on compiler

x. fputs() function writes a string to a file that only ends with a newline. **1** 1 5 3 1
(a) True
(b) False
(c) Depends on the standard
(d) Depends on the compiler

Q.2 i. Define algorithm with suitable example. **4** 2 2 1 1
 ii. What do you mean by data type? List primary datatype of 'C' language. **6** 1 2 2 1
OR iii. Draw a flowchart to calculate factorial of any number. **6** 2 1 1 1

Q.3 i. What do you mean by structured and un- structured programming? **4** 1 3 2 2
 ii. Explain any six relational operators with suitable example. **6** 2 2 1 1
OR iii. Write a program in C language to find greatest number from three number using nested If conditional statement. **6** 1 2 2 1

Q.4 i. Write a short note on local and static variable. **4** 1 3 2 2
 ii. Explain call by value and call by reference. Write a program to implement call by value. **6** 2 3 1 1
OR iii. Explain in brief any six standard library functions. **6** 2 3 2 1

Q.5 i. Explain pointer arrays with suitable example. **4** 2 4 1 1
 ii. Explain Structures. Write a program in C language to implement structure. **6** 2 4 2 1
OR iii. Explain multi-dimensional array. Write a program to implement matrix addition. **6** 2 4 3 1

Q.6 Attempt any two:
 i. Write a program in C to create and store information in a text file. **5** 3 5 3 2
 ii. Use of fgetc and fgets function. **5** 3 5 3 1
 iii. Explain any five build-in function to perform basic file operations in C. **5** 2 5 3 1

******

Marking Scheme
EN3ES09(T) Fundamentals of Computer Science

Q.1 | i) | C. 0 or more | 1
| ii) | A. short | 1
| iii) | B. selective structure | 1
| iv) | D. All of these | 1
| v) | D. all of the mentioned | 1
| vi) | B. q | 1
| vii) | A. ptr is a pointer to integer, p is not | 1
| viii) | D. 11,11 | 1
| ix) | C. NULL | 1
| x) | B. False | 1

Q.2 | i. | Define algorithm- | 2 Marks | 4
| | suitable example- | 2 Marks |
| ii. | What is data_type and List primary datatype of 'C'? | | 6
| | data_type - | 2 mark |
| | primary datatype of 'C' - | 4 mark |
OR | iii. | Draw a flowchart to calculate factorial of any number | | 6

Q.3 | i. | What do you mean by structured - | 2 Marks | 4
| | and un- structured programming. - | 2 Marks |
| ii. | Explain any 6 relational Operators with suitable example.1 Mark each | | 6
OR | iii. | Complete program | 6 marks | 6

Q.4 | i. | Write a short note on local - | 2 Marks | 4
| | and static variable. | 2 Marks |
| ii. | Explain call by value and call by reference. – | 3 Marks | 6
| | Write a program to implement call by value. – | 3 Marks |
OR | iii. | Explain in brief any 6 standard library functions.1 mark each | | 6

Q.5 | i. | Explain pointer arrays – | 2 Marks | 4
| | with suitable example.- | 2 Marks |
| ii. | Explain Structures. 3 Marks | | 6
| | Write a program in C language to implement structure. 3 marks | |
OR | iii. | Explain multi-dimensional array. 3 Marks | | 6
| | Write a program to implement matrix addition. | 3 Marks |

Q.6 | | Attempt any two: | |
| i. | Program | 5 Marks | 5
| ii. | Use of fgetc | 2.5 Marks | 5
| | and fgets function | 2.5 Marks |
| iii. | 1 Mark each function | | 5

******