Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering
End Sem Examination Dec-2023
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.

Q.1 i. Which of these is an invalid variable name? **1**
(a) int #a; (b) int _a; (c) int a (d) None of these

ii. Which of these is not a valid data type? **1**
(a) double (b) char (b) int (d) array

iii. A task performed by a for loop can also be performed by- **1**
(a) While loop (b) Do while loop
(c) Both (a) and (b) (d) None of these

iv. Which of these is not a valid operator? **1**
(a) ^= (b) != (c) &= (d) None of these

v. Following are roles of functions in programming: **1**
(a) Code reuse
(b) Execute a block of code as and when required
(c) Work on dynamic data as passed though parameters
(d) All of these

vi. Which of these can be a function return type? **1**
(a) int (b) float (c) void (d) All of these

vii. Following are types of pointers? **1**
(a) void (b) far (c) near (d) All of these

viii. Prior to using a pointer variable it should be- **1**
(a) Declared (b) Initialized
(c) Both (a) and (b) (d) None of these

ix. Which of these is not a file permission? **1**
(a) a (b) d (c) w (d) r

x. What will be the output of the following program? **1**

```
FILE *fptr;
fptr = fopen("filename.txt", "w");
fclose(fptr);
```

(a) Opens file for reading
(b) Syntax error if file does not exist
(c) Opens file for writing
(d) None of these

Q.2 i. Explain any four symbols of a flow chart. **2**

ii. Discuss int, float and char data types. **3**

iii. Write an algorithm to find minimum from the ten input numbers. **5**

OR iv. Draw a flowchart for a simple calculator. **5**

Q.3 i. Discuss logical operators. **2**

ii. What will be the output of the following program? **8**

```
int main() {
 int myInt;
 float myFloat;
 double myDouble;
 char myChar;

 printf("%lu\n", sizeof(myInt));
 printf("%lu\n", sizeof(myFloat));
 printf("%lu\n", sizeof(myDouble));
 printf("%lu\n", sizeof(myChar));

 return 0;
}
```

OR iii. Write a program to assign grades from marks obtained during exam using if – else ladder. 0 to 35 marks = F Grade ; 36 to 59 marks = C Grade ; 60 to 74 marks = B Grade ; 75 to 100 marks = A Grade. **8**

Q.4 i. Discuss pass by value and pass by reference. **3**

ii. Explain recursion, local variables and global variables using suitable example. **7**

OR iii. Write a program to compute factorial of a given number. **7**

Q.5 i. Discuss pointers giving suitable example. **4**

ii. Write output of following program **6**

```
int myNumbers[4] = {25, 50, 75, 100};
int *ptr = myNumbers;
int i;

for (i = 0; i < 4; i++) {
  printf("%d\n", *(ptr + i));
}
```

OR iii. Write a program to create a two dimensional array with functionality of read and write. **6**

Q.6 Attempt any two:

i. Write a program to create a file named “tele_directory” and add five names and phone numbers in it. **5**

ii. Explain fopen(), EOF and fclose() giving suitable example. **5**

iii. Write a program to open an existing file and search data from it. **5**

******

Marking Scheme
Fundamentals of Computer Science-EN3ES09 (T)

Q.1	i)	(a) int #a;		**1**
	ii)	(d) array		**1**
	iii)	(c) both (a) and (b)		**1**
	iv)	(d) None of the above		**1**
	v)	(d) All of the above		**1**
	vi)	(d) All of the above		**1**
	vii)	(d) All of the above		**1**
	viii)	(c) both (a) and (b)		**1**
	ix)	(b) d		**1**
	x)	(c) opens file for writing		**1**
Q.2	i.	For each correct symbol	(0.5 Mark*4)	**2**
	ii.	For correct description	(1 Mark*3)	**3**
	iii.	For logic	2 Marks	**5**
		For correct algorithm	3 Marks	
OR	iv.	For logic	2 Marks	**5**
		For correct flowchart	3 Marks	
Q.3	i.	each for correct description	(1 Mark*2)	**2**
	ii.	4		**8**
		4		
		8		
		1		
		Full marks for correct output as above.		
OR	iii.	for logic	5 Marks	**8**
		for correct syntax	3 Marks	
Q.4	i.	For each correct explanation	(1.5 Marks*2)	**3**
	ii.	For correct explanation of recursion	4 Marks	**7**
		For correct explanation of local variables	1.5 Marks	
		For correct explanation of global variables	1.5 Marks	
OR	iii.	For logic	4 Marks	**7**
		For correct syntax	3 Marks	
Q.5	i.	for explanation	3 Marks	**4**
		For example	1 Mark	
	ii.	25		**6**
		50		
		75		
		100		
		Full marks for above output		
OR	iii.	for logic	4 Marks	**6**
		for correct syntax	2 Marks	
Q.6	i.	For logic	3 Marks	**5**
		For correct syntax	2 Marks	
	ii.	For explanation	3 Marks	**5**
		For example	2 Marks	
	iii.	For logic	3 Marks	**5**
		For correct syntax	2 Marks	

******