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Exam.Code:0905
Sub. Code: 7887

1079
B.E. (Information Technology) First Semester
IT-102: Programming Fundamentals

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Part.

x-x-x

Qn.1 Answer the following:-

- a) How are Compilers different from Interpreters?
- b) What are different kinds of storage classes? What kind of information is provided by storage class of a variable?
- c) Briefly explain the principle of recursion with suitable example.
- d) Which arithmetic operations are applicable on pointers? Illustrate with example.
- e) Discuss the characteristics feature of Union data type?

(5x2=10)

PART -A

- Qn 2 a) Write an algorithm and draw flowchart to add first ten even numbers.
- b) Compare and contrast: (i) Assembler, Compiler, Interpreter
(ii) if-else, switch, break statements

(5,5)

- Qn 3. a) Write a program to generate the following pattern

```

*
* *
* * *
* * * *
* * *
* *
*

```

- b) What is the difference between do-while and while-do statement? Write a program using the most suitable looping construct to read salary of N employees, add a bonus of 5% and finally compute the total salary of each employee.

(5,5)

- Qn 4. a) Illustrate the advantage of pass by reference mechanism over pass by value using a suitable example.
- b) Given an array of integers. Read a number as input from the user and search if it is present in the array or not.

(5,5)

PART-B

- Qn 5. a) What are Structures? Write a program that reads the data of N students related to Roll_no, Name, marks_sub1, marks_sub2, marks_sub3. Pass the array of structure to a function that computes total marks of each student and also the total class average.
- b) What are C preprocessor statements? Explain its significance using suitable examples.

(5,5)

- Qn 6 a) What are pointers? Discuss the output of following:

```

void main()
{
int a[] = {1,2,3,4,5,6,7,8,9};
int *p = a+1;
int *k=a+5;
printf("\n %d", k-p); // line number 6
}

```

What if line number 6 in the above code is replaced by (i) p-k (ii) *k - *p

- b) What are macros? Discuss any four formatting input and output commands?

(5,5)

- Qn 7 a) What are the characteristics of different file types? How a C program can read input directly from a file? Illustrate.

- b) What is the difference between syntax and semantic errors? Also explain the error handling mechanism.

(5,5)

x-x-x