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Question Paper Code : 80093

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Second Semester

Computer Science and Engineering

CS 8251 — PROGRAMMING IN C

(Common to Computer and Communication Engineering/Information Technology)

(Regulation 2017)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate between formatted and unformatted input statements. Give one example for each.
2. What is the use of preprocessor directive?
3. Define an array.
4. Write a C function to compare two strings.
5. What is the need for functions?
6. What is the output of the following code fragment?

```
int x= 456, *p1, **p2;
p1=&x; p2=&p1;
printf ("Value of x is : %d\n", x);
printf("Value of *p1 is : %d\n", *p1);
printf ("Value of *p2 is : %d\n", *p2);
```

7. Compare and contrast a structure with an array.
8. What is the output of the following code fragment?

```
struct point
{
int x;
int y;
};
struct point origin, *pp;
main ( )
{
pp = & origin;
printf (" origin is (%d% d)\n", (*pp).x,pp → y);
}
```

9. Why files are needed?
10. What is the use of command line argument?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What is the purpose of a looping statement? Explain in detail the operation of various looping statements in C with suitable examples. (12)

(ii) Write a C program to find the sum of 10 non-negative numbers entered by the user. (4)

Or

(b) (i) What is a storage class? Explain the various storage classes in C along with suitable example. (12)

(ii) Write a C program to find the largest among 3 numbers entered by the user. (4)

12. (a) Explain binary search procedure. Write a C program to perform binary search and explain. (16)

Or

(b) Discuss how you can evaluate the mean, median, mode for an array of numbers. Write the C program to evaluate the mean, median and mode for an array of numbers and explain. (16)

13. (a) What is recursion? Explain the procedure to compute $\sin(x)$ using recursive functions. Write the C code for the same. (16)

Or

(b) What is pass by reference? Explain swapping of 2 values using pass by reference in 'C'. (16)

14. (a) What is dynamic memory allocation? Explain various C functions that are used for the same with examples. (16)

Or

(b) What is a self-referential structures? Explain with suitable examples. (16)

15. (a) Explain in detail various operations that can be done on file giving suitable examples. (16)

Or

(b) Explain in detail random access in files along with the functions used for the same in C. Give suitable examples. (16)