Subject Code: R13205/R13 **Set No - 1**

I B. Tech II Semester Supplementary Examinations December - 2016

COMPUTER PROGRAMMING

(Com. to ECE, EEE, EIE, Bio-Tech.E, E.Com.E., Agri.E)

Time: 3 hours **Max. Marks: 70**

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory,
Three Questions should be answered from **Part-B**

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PART-A

1. (a) What is the output of the following fragment of 'C' code?

int i = 10, j = 20; j = i< j ? (i< j) ? i : j : j; printf("%d, %d", i, j);

(b) What is the output of the following fragment of 'C' code?

(i) *float a = 0.7; if(a < 0.7) printf("CSE"); else printf("Non-CSE");*

(ii) *char ch = 'a'; switch(ch) { case 'a': printf("CSE"); case 'b': printf("ECE"); default: printf("ERROR"); }*

(c) Find the value of $f(5861, 7)$ for the following recursive function definition:

$$f(x,y) = \begin{cases} 0, & x < y \\ f(x-y, y)+1, & y \le x \end{cases}$$

(d) What is a pointer to a function? Give an example.

(e) What is the output of the following fragment of 'C' code?

union { int i; char ch[2]; }k; k.i = 512; k.ch[0] = 50; printf("%d", k. ch[1]);

(f) What is a file pointer? Give an example. (4+4+4+3+4+3)

PART-B

2. (a) Explain any four basic types of constants with an example each.

(b) Describe the various types of operators available in 'C'. (8+8)

3. (a) Find the output of the following fragment of 'C' code:

```
int i, j;
for(i = 1; i <= 2; i++)
for(j = 1; j <= 2*i; j++)
for( j = 1; j <= 2*i; j++) printf("%d", j);
```

(b) Consider the array declaration: float a[5]; and the memory address of a[0] is 4056. What is the memory address of a[3]?

(c) Write a 'C' program to remove duplicate elements from a given array. (5+2+9)

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4. (a) What is a function prototype? Give an example.
   (b) Write a program for printing Fibonacci series.
   (c) Write a recursive '*C*' function to solve the problem of *Towers of Hanoi*. (4+6+6)

5. (a) Explain the process of accessing a variable through its pointer's pointer's pointer with an example.
   (b) What is a pointer to a function? Give an example.
   (c) What is the output of the following 'C' program?
   *main { char *c1 = "KSD-CSE"; f(c1); printf("%s", c1); }*
   *f(char *c1){ char *c2 = "KSD-AP"; c1 = c2; }* (5+5+6)

6. (a) What is a bit field? What is the importance of bit fields? What are its limitations?
   (b) Find the output of the following 'C' program:
   unsigned int i = 3, j = 40960, k;
   k = (i << 1, i << 4, i << 9) + (i >> 1, i >> 15); printf("%d", k);
   (c) What is a self-referential structure? Give an example. (5+6+5)

7. (a) What is text & binary file? Explain.
   (b) Explain the difference between *fscanf() and fprintf()* with an example.
   (c) Write a 'C' program to copy the contents of one file to another file using command line arguments. (3+5+8)