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

I B. Tech II Semester Supplementary Examinations April/May - 2017
COMPUTER PROGRAMMING
(Com. to ECE, EEE, EIE, BOT, E.Com.E., AGE)

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 value of the 'C' expression: $9 – 9 / 5 * 5 \% 3 > 9 \% 5 \% 3$?

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

    static int a[3][2][4] = { {2, 1, 4, 7, 2, 5, 8, 9}, {8, 6, 4, 4, 2, 5, 3, 5}, {2, 4, 5, 6, 1, 9, 8, 7}};

    printf("%d", a[2][1][0]);

    (c) Consider a recursive '*C*' function to compute *n* Fibonacci numbers of the following. How
    many times *f* is called (including the first call) for an evaluation of $f(7)$?

    $$f(n) = \begin{cases} 1, & if \ n = 0 \\ 1, & if \ n = 1 \\ f(n-1) + f(n-2) \end{cases}$$

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

    *int a[] = {10, 20, 30, 40, 50}, *p; p = a + 3; printf("%d", p[-2]);*

    (e) What is a self-referential structure? Give an example.

    (f) What is the difference between *fscanf() and fprintf()*? Give an example.   (4+4+4+4+3+3)

PART-B

2. (a) Draw the flow chart to find the first '**N**' terms of Fibonacci series.

    (b) Determine the value of the following 'C' expressions:

    (i) *int i, j, k;   i = j = k = 1;   i = -j-- - --k;   printf("%d", i);*

    (ii) *int x = 5, z;   float y;   z = x + +;   y = + + x;   printf("%d %d ", x, y, z);*

    (iii) *int x = 5, x ? y = 0 : y = 1; printf("%d", y);*   (8+8)

3. (a) Describe the various control structures available in 'C'.

    (b) Write a program to find whether the given no is amstrong or not.

    (c) Explain the three dimensional arrays with an example.   (6+6+4)

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4. (a) Write a recursive '*C*' function to solve the problem of *Towers of Hanoi*. Trace the '*C*' function for an optimal execution time of the *Towers of Hanoi* problem with $n = 8$ discs.

(b) Write a 'C' program to multiply a given two long integer numbers using recursion.   (10+6)

5. (a) Explain about different bit-wise operators with examples.

(b) What are command line arguments? Explain with a complete 'C' program.

(c) What does the following fragment of C program print?

   *char c[] = "KSDAPCSE", *p;   p = c;   printf("%s", p + p[3] − p[1]);*   (7+6+3)

6. (a) Compare structure and union in 'C' with suitable examples.

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

   void main() { struct { a : 5;   b : 1;   c : 15; }a; printf("%d", sizeof(a)); }

(c) Explain the passing of structure as arguments with suitable 'C' program.   (5+5+6)

7. (a) What is a file pointer? Explain the steps for sequential file operations.

(b) Explain the difference between the Standard I/O and formatted I/O with suitable examples.

(c) Compare *gets()* and *fgets()* with an example.   (5+6+5)