Code: 13A05101 **R13**

B.Tech I Year (R13) Regular & Supplementary Examinations May/June 2015

PROBLEM SOLVING & COMPUTER PROGRAMMING

(Computer Science and Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is a stream?

(b) Define the two general problem-solving strategies.

(c) Write the output for the following program

```
Main ( ) {
In a = 24, b = 13, c, d;
C = + + a + b; d = a + --b;
Print (“a = %d”, a); print (“b = %d”, b);
Print (“c = %d”, c); print (“d = %d”, d);
}
```

(d) Differentiate between while loop and do while loop.

(e) list out any four predefined functions in C.

(f) Define Array. Write the declaration of Multi Dimensional Array.

(g) What is a Mask?

(h) Make comparison of structures and unions.

(i) What is rvalue? Give one example.

(j) List and mention the purpose of the file status functions in C.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2 (a) List out the computer languages and explain.

(b) Describe the different problem-solving aspects.

(OR)

3 (a) Mention the steps involved in creating and running the program. Explain each step in detail.

(b) List the characteristics of C-Language.

UNIT - II

4 (a) Give examples for postfix, prefix, unary and binary expressions.

(b) Write a C program to check whether a given number is Armstrong number or not.

(OR)

5 (a) Describe the Multiway selection statements in C with examples.

(b) Write the algorithm for converting a character into a number.

Contd. in page 2

UNIT - III

6 (a) Describe the basic function designs with examples, (hint: return type and parameter list).
(b) Write a C program to find GCD of two numbers using recursion.

(OR)

7 (a) Write a function to find an element in an array using linear search.
(b) Write a C program for matrix multiplication.

UNIT - IV

8 Discuss the following functions:
(i) Strstr ().
(ii) Strest ( ).
(iii) strrev ( ).
(iv) strcmpi ( ).
(v) strncmpi ( ).

(OR)

9 (a) How do you define a union? How a union variable is declared and initialized? How are union members accessed? Explain with examples.
(b) Describe any 4 bitwise operators in C.

UNIT - V

10 (a) Explain with an example, passing pointer to a function.
(b) List and describe dynamic memory allocation functions.

(OR)

11 (a) What are the differences between the text and binary file?
(b) Give brief note on the following file positioning functions:
(i) ftell ( ).
(ii) rewind ( ).
(iii) fseek ( ).

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