

Code: CS3T3

II B.Tech - I Semester–Regular/Supplementary Examinations
November 2017

PROGRAM DESIGN
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) How structure chart differ from an algorithm?
- b) What is the purpose of ceil() library function?
- c) What are the differences between formal and actual parameters? Explain with an example.
- d) What is the scope of a variable? Explain with an example.
- e) What are enumerated types? Explain with an example.
- f) How multidimensional array is passed to a function? Explain with an example.
- g) Differentiate between structure and union with an example.
- h) What are the advantages of dynamic memory allocation?
- i) List any two common programming errors.
- j) What are the characteristics of Binary files?
- k) What are Macros? How would you expand a Macro?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Write the default return type for a function with an example. 8 M
- b) Write a C program in which the radius is to pass as parameter to a function, compute and display area and circumference of a circle. 8 M
3. a) Write and test a recursive function that returns the value of the following recursive definition:
 $f(x) = 0$ if $x \leq 0$
 $f(x) = f(x-1) + 2$ otherwise
What set of numbers is generated by this definition? 8 M
- b) When and How to Trace Recursive Functions? Explain with an example. 8 M
4. a) Explain the concept of nesting of structure and accessing structure members with a program. 8 M
- b) Write a C program that counts the total number of vowels. 8 M

5. a) Write a C program using File pointers that Reads each number from an input file and writes it rounded to 2 decimal places on a line of an output file. 8 M
- b) List out the advantages of using pointers and explain generic (void) pointers with a suitable example. 8 M
6. a) Define a macro named F_OF_X that would evaluate the following polynomial for the x value passed as its argument. You may assume that the math library has been included. $x^5 + 3x^3 - 4$ 8 M
- b) Explain the concept of managing complexity in large-scale programs. 8 M