I B. Tech I Semester Regular Examinations, Dec – 2016 COMPUTER PROGRAMMING

(Com. to ECE, AE, AME, BOT, CHEM, CE, CSE, IT, EIE, EEE, ME, MTE, MM, PCE, PE, E Com. E)

Time: 3 hours Max. Marks: 70

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

PART-A

- 1. (a) What is the difference between low level and high level language and uses of them?
 - (b) What is the difference between assignment and equality operation?
 - (c) What is difference between while and do-while loops?
 - (d) What are the uses of functions in C language?
 - (e) What is an array variable? How it is different from ordinary variable?
 - (f) Write the differences between structure and union.
 - (g) What is the use of **fseek()** function in files. Write its syntax?

 $[7 \times 2 = 14]$

PART-B

- 2. (a) What are the steps involved in program development process? Explain.
 - (b) What is Central Processing Unit (CPU) in a computer? Explain about various components and their functions of CPU. [7+7]
- 3. (a) List the basic data types, their sizes and range of values supported by 'C' language.
 - (b) What do you mean by operator precedence and associativity? How one can override the precedence defined by C language? Give illustrative examples.
 - (c) Write a C program to swap (exchange) the values of two variables without using temporary variable. [5+5+4]
- 4. (a) Explain about various logical operators available in C language with examples.
 - (b) Write C program to convert the given decimal number into binary number. [7+7]
- 5. (a) Explain about different storage classes with examples. Discuss their uses and scope.
 - (b) Write a recursive function for finding the factorial value of a given number. [8+6]
- 6. (a) Explain different string handling functions available in C language.
 - (b) Write a function to multiply two matrices of order 'mxn' and 'nxl' and write the main program to input array values and output resultant matrix. [7+7]
- 7. (a) Discuss various valid arithmetic operations that can be performed on pointers in C.
 - (b) Explain the following functions in file operations:
 - (i) getw() (ii) putw() (iii) fscanf() (iv) fprintf()
 - (c) How to pass structure variable to functions? Explain with example. [5+5+4]

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Set No – 2

Subject Code: R161107/R16

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

PART-A

- 1. (a) Define system software and application software and give examples for each one.
 - (b) Explain pre- and post- decrement and increment operation on a variable with an example.
 - (c) Write the differences between **nested if**() statement and **switch**() statement.
 - (d) What are the differences between recursion and iteration?
 - (e) What are the differences between an array and string?
 - (f) How does a structure differ from an array?
 - (g) Distinguish between text mode and binary mode operation of a file.

 $[7 \times 2 = 14]$

PART-B

- 2. (a) Distinguish between machine, assembly, low-level and high-level languages.
 - (b) Explain the features and characteristics of procedural and object oriented languages.

[7+7]

- 3. (a) What is meant by type conversion? Why is necessary? Explain about implicit and explicit type conversion with examples.
 - (b) Explain different relational operators available in C language with examples.
 - (c) Write a C program to convert the given years into number of months and days. [5+5+4]
- 4. (a) Explain various iterative statements available in C language with examples.
 - (b) Write a C program to find the roots of a quadratic equation $ax^2 + bx + c = 0$ for all possible combination values of a, b and c. [7+7]
- 5. (a) Explain about the actual arguments and formal argument in functions. What is the difference between these arguments? Explain the rules to call a function in a main function.
 - (b) Write a C program using functions to compute the function

 $\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} - \dots - \text{upto } 15 \text{ terms.}$ Tabulate the values from 0^0 to 180^0 in steps of 30^0 in the main program.

- 6. (a) What is Array? Discuss about the initialization and accessing of array elements in one dimensional and two dimensional arrays.
 - (b) Write a C program to count number of lines, words and characters in a given text without using any string header files. [6+8]
- 7. (a) Explain the following functions in files:
 - (i) fseek() (ii) ftell() (iii) rewind() (iv) fopen() (v) fclose() (vi) foef()
 - (b) Represent a complex number using a structure in C. Write a C program that uses functions to perform the following operations:

Subject Code: R161107/R16 Set No – 3

I B. Tech I Semester Regular Examinations, Dec – 2016 COMPUTER PROGRAMMING

(Com. to ECE, AE, AME, BOT, CHEM, CE, CSE, IT, EIE, EEE, ME, MTE, MM, PCE, PE, E Com. E)

Time: 3 hours Max. Marks: 70

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

PART-A

- 1. (a) Why is the C language called as middle level language?
 - (b) What are library functions? Mention their uses in C language.
 - (c) What is the difference between **break** statement and **exit()** statement in C language.
 - (d) Differentiate between built-in functions and user-defined functions.
 - (e) What is a null character? What are its uses in strings?
 - (f) What are the advantages and disadvantages with bit-fields?
 - (g) Why register storage class does not support all data types?

 $[7 \times 2 = 14]$

PART-B

- 2. (a) Discuss the features and characteristics of application software and system software.
 - (b) Discuss about different computer languages with examples.

[7+7]

- 3. (a) Explain different bitwise operators available in C with examples.
 - (b) An integer is divisible by 9 if the sum of its digits also divisible by 9. Write a C program that prompts the user to input an integer. The program should then output the number and a message stating whether the number is divisible by 9 or not. [7+7]
- 4. (a) Explain various selection statements available in C language with examples.
 - (b) Read the marks of eight subjects and calculate the percentage of marks. The program should output following grades based on percentage of marks obtained in the eight subjects. Use **nested if** statement to write the code. [7+7]

Percentage Marks 80 to 100 70-79 60-69 50-59 Less than 49
Grade Excellent Very Good Good Satisfactory Fail

- 5. (a) What is the difference between recursive and non-recursive functions? Give their merits and demerits.
 - (b) Discuss in details about local variables and global variables with respect to their scope and extent.
 - (c) Write a function to reverse a given integer number. Also write main program. [5+4+5]
- 6. (a) What is an array? What are the disadvantages in implementing arrays in C language? Discuss problems for implementing of multi-dimensional arrays in C language.
 - (b) Write C program to concatenate two strings without using streat() function.
 - (c) Write a C program to transpose the given two dimensional array.

[5+5+4]

7. (a) How do you define a structure, structure variables, access their elements and perform operations on them? Explain with examples.

(b) Write Approgram Accordence for the file into another file. [7+7]

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Time: 3 hours Max. Marks: 70

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

PART-A

- 1. (a) What is the difference between procedural language and object-oriented language?
 - (b) Explain about ternary (or conditional) operator.
 - (c) Write the limitations of **switch()** and **for()** statements.
 - (d) What is meant by modular programming?
 - (e) How does C complier handle the values in an array internally?
 - (f) What is the difference between a pointer and dangling pointer?
 - (g) Why addition and multiplication of two addresses is not possible in pointers. $[7\times2=14]$

PART-B

- 2. (a) What is algorithm? What are the main steps followed in the development of an algorithm? Write an algorithm for sum of digits in a given number.
 - (b) Describe procedure for creating and running C programs using algorithmic approach.

[7+7]

- 3. (a) Explain about formatted and unformatted input and output functions available in C language. Also explain different output format modifiers in C language.
 - (b) Explain different arithmetic operators available in C language with examples.
 - (c) Write a C program to check whether the given integer number is palindrome or not.[5+5+4]
- 4. (a) Explain in details about multi-way selection statements with example.
 - (b) Write C program to evaluate the following series:

[7+7]

$$sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} - \cdots \infty$$

- 5. (a) Explain different parameter passing techniques in functions with examples.
 - (b) Write C program find the Greatest Common Divisor (GCD) of two numbers using a recursive functions. [7+7]
- 6. (a) Explain the following string handling functions with examples:
 - (i) strcpy() (ii) strcat() (iii) strrev() (iv) strlen
 - (b) Write a C program to count number of vowels present in a sentence.
 - (c) Write a C program to add two 2-dimensional arrays.

[4+5+5]

- 7. (a) Explain the following with examples:
 - (i) self referential structures (ii) typedef (iii) command line arguments
 - (b) Write a C program to read a data file containing integers. Find the largest and smallest integers and display them TARE SULTS. CO. IN

 [7+7]