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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech I Semester End Examinations (Supplementary) - February, 2017

Regulation: IARE-R16

COMPUTER PROGRAMMING

(Common to CSE|EEE|ECE|IT)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) What is a flowchart? Develop a flowchart to determine given string is palindrome or not. [7M]
- (b) The distance between two cities (in km.) is input through the keyboard. Write a program to convert and print this distance in meters, feet, inches and centimeters. [7M]
2. (a) Explain briefly Client server computing environment. [7M]
- (b) Write a C program to accept an integer from user and toggle the nth bit of the given number. Assume the number of bits to be 32. [7M]

UNIT – II

3. (a) Discuss briefly the switch case statement in C with its syntax and compare with other conditional control statements. [7M]
- (b) Assume that you have been given ten words: fortran, java, perl, python, php, javascript, c, cpp, ruby, csharp. Write a C program to take these 10 words from user and sorts elements in lexicographical order. The result must be c, cpp, csharp, fortran, java, javascript, perl, php, python, ruby. [7M]
4. (a) Given a $M \times M$ matrix, write a C Program to compute the sum of upper triangular elements. Note that the program must accept the dimension of matrix and elements from the user. [7M]
- (b) In number theory, a perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself (also known as its aliquot sum). Write a C program to print all Perfect numbers between 1 to n. [7M]

UNIT – III

5. (a) Explain different methods for transferring data between calling and called function with an example. [7M]
- (b) In mathematics, the factorial of a non-negative integer n, denoted by $n!$, is the product of all positive integers less than or equal to n. Design a recursive C function to compute the factorial of a integer n. Write a test drive for the same. [7M]
6. (a) What do you mean by conditional compilation? Explain in detail. [7M]
- (b) Write a c program to find transpose of a matrix using pointer. [7M]

UNIT – IV

7. (a) Explain the following with suitable example [7M]
i. Library Function
ii. Nested Structure
- (b) With suitable example, discuss the functions for allocating and deallocating memory in the Heap. [7M]
8. (a) Explain the following with suitable example [7M]
i. Self Referential Structure
ii. Union
- (b) There is a structure called employee that holds information like employee code, name, date of joining. Write a C program to create an array of the structure and enter some data into it. Then ask the user to enter current date. Display the names of those employees whose tenure is 3 or more than 3 years according to the given current date. [7M]

UNIT – V

9. (a) Explain the use of fopen() and fclose() functions. [7M]
(b) Write a C program to copy one file to another. While doing so replace all lowercase characters to their equivalent uppercase characters. [7M]
10. (a) What is structure variable? Can a structure variable be defined as member of another structure? Explain with example. [7M]
(b) Write a C program to copy the contents of one file into another using fgetc and fputc function. [7M]