COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2003

EN 2k 108/PTCH 105/PTCE 105/PTME 10...

COMPUTER PROGRAMMING IN C

(New Scheme)

(Common to all branches)

Time : Three Hours   Maximum : 100 Marks

*Answer **all** questions.*

Assume suitable data that are not given.

1. (a) Differentiate between compiler and interpreter with the advantages and disadvantages of each.

   (b) What is top-down modular programming ? What are the various advantages of this approach ?

   (c) Write a program that will read the value of x and evaluate the following function :—

   $$y = \begin{cases} 1 & \text{for } x > 0 \\ 0 & \text{for } x = 0 \\ -1 & \text{for } x < 0 \end{cases}$$

   using the conditional operator ?

   (d) Write the syntax of DO statement and explain its working with an example.

   (e) How do structure differ from union. Give example for the same.

   (f) Write the various bit-wise operators in C explaining its working.

   (g) Write notes on object oriented languages.

   (h) What is inheritance ? What are the different types of inheritances supported in C++ ?

   (8 × 5 = 40 marks)

2. (a) (i) What is a flowchart ? List down the various symbols and their meanings used in a flowchart.

   (ii) Draw a flowchart to read a list of N elements and find the average of N elements.

   Or

   (b) What is program testing ? What are the different cases to be considered for program testing ? Explain with example.

Turn over

3. (a) (i) Write a program to read a string and check whether the string is palindrome or not.

   (ii) Write a program to read a sentence and check whether the given word is in the sentence or not. If exists, the program should display the position at which the word exists.

Or

(b) Write a function PRIME that returns 1 if its argument is a prime number and returns zero otherwise. Use the function to print the list of prime numbers between 100-200.

4. (a) Define a structure CRICKET that will describe the following information :—

   Player Name, Team Name, Batting average.

   Using the structure CRICKET, declare an array PLAYER with 50 elements and write a program in C to read the information of all the 50 players and print a team-wise list containing the names of players with their batting average.

Or

(b) Write a program in C to create a linear linked list and perform the following list operations :—

   Insert an element at the front, *n* th, end. Delete an element, if exists in the list view all elements.

5. (a) Define a class string. Overload operator '+' to concatenate two strings, * to find the length of the string, '–' to extract *n* characters from the original string. Test the class with a main program.

Or

(b) What is inheritance ? What are the different types of inheritance supported by C++ ? Explain them with example.

(4 × 15 = 60 marks)