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BE-II/6(A)

212354

COMPUTER—COURSE NO.—COM-204

(Computer Programming Using C)

Time Allowed—3 Hours

Maximum Marks—100

Note :— Attempt any *five* questions, selecting at least *two* questions from each Section.

**Section A**

1. (a) Write a program in C to perform the conversion of decimal number to binary and octal. Assume the decimal number is in integer format. 10
- (b) Explain Booth's multiplication algorithm. Perform  $7_8 \times -6_8$  using Booth's algorithm. 10
2. (a) What are different data types in C-language ? Explain range, memory size of each with its format specifier. 10

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- (b) Write a function in C to find the factorial of a number and also write a program to calculate the sum of the following series using the above function : 10

$$S = 1! + 2! + 3! + \dots + N!$$

3. (a) What is the role of switch statement in C language ? Give the syntax of switch statement with suitable example. 10

- (b) Differentiate between do-while and while loop. WAP in C using while loop to reverse the digits of a number. 10

4. (a) Write a program in C to arrange the numbers in an array using bubble sort technique. 10

- (b) Write a C language program to read  $n$  numbers in an array and split the array into two arrays even and odd such that the array even contains all the even numbers and other is odd. So the output will be : 10

(e.g. Original array is 7, 9, 4, 6, 5, 3, 2, 10, 18

Odd array is 7, 9, 5, 3

Even array is 4, 6, 2, 10, 18)

## Section B

5. (a) Define a structure which contains the following members and WAP in C to list all students who scored more than 75 marks.  
Roll No., Name, father's name, age, city, marks. 10
- (b) Write a program in C using function to find print first 10 prime numbers. 10
6. (a) Explain any *three* of the following with example : 10
- (i) fprintf ( )
  - (ii) fscanf ( )
  - (iii)getc ( )
  - (iv) feof ( )
- (b) Show with the example how arguments are passed using 'call by value' and 'call by reference' respectively. 10

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7. WAP in C that allows the user to enter a string and perform

the following operations on user's choice :

(i) Count number of characters in string without using library function

(ii) Count number of words in it

(iii) Remove spaces in a string and print the string 20

8. (a) What is dynamic memory allocation ? Explain malloc function with suitable example. 10

(b) Write a program in C that reads an integer number from a file named DATA1 and print the product of squares of individual digits of that number in another file named DATA2. 10