



Printed Pages : 7

ECS-101

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1601Roll No.

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B. Tech.

(Only for the candidates admitted/Readmitted in the session 2008-09)

(SEM. I) EXAMINATION, 2008-09**COMPUTER CONCEPTS & PROGRAMMING IN C***Time : 3 Hours]**[Total Marks : 100*

Note : (1) This question paper contains **three** sections.
SECTION - A contain Objective type questions,
SECTION - B contains short answer type questions and **SECTION - C** contains descriptive type questions.

(2) Attempt all questions.

SECTION - A**20×1=20**

Note : This section - contains **20 objective type** questions.
Answer **ALL** questions.

1 Multiple Choice

- (i) Which of the following is not an Operating System?
- (a) UNIX
 - (b) LINUX
 - (c) DOS
 - (d) BASIC

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- (ii) Which of the following is based on Objective Oriented Programming Concepts?
- (a) C
 - (b) COBOL
 - (c) FORTRAN
 - (d) C++
- (iii) What is an Algorithm?
- (a) A Computer Program
 - (b) Programming Language
 - (c) An error in Program
 - (d) None of the above
- (iv) Which of the following is a Valid Octal number?
- (a) F03
 - (b) 991
 - (c) 125
 - (d) None of the above
- (v) Typically an Operating System is classified as:
- (a) System Software
 - (b) Application Software
 - (c) Both A & B
 - (d) None of the above



(vi) Which character is used as an assignment operator in C language?

- (a) =
- (b) →
- (c) ==
- (d) ~

(vii) Which of the following is not a data structure?

- (a) Stack
- (b) Variable
- (c) Queue
- (d) List

(viii) What will a PUSH statement do in a stack?

- (a) Insert an element between two elements
- (b) Delete an element
- (c) Always add element at top
- (d) None of the above

(ix) How many elements will be there in A[10][5] array?

- (a) 50
- (b) 36
- (c) 55
- (d) None of the above



- (x) At which stage a C Pre-processor works?
- (a) Before Translation
 - (b) Before Linking
 - (c) After Execution
 - (d) None of the above

State TRUE / FALSE

- (xi) Fourth Generation Languages are Low Level Languages.
- (xii) A program is a collection of instructions and a compiler translates a program written in high level language to machine to machine language.
- (xiii) `&&` and `||` are logical operators in C language.
- (xiv) Each addition to Queue increases the value of rear and front pointer by one.
- (xv) A function in C Language can not call itself.

Fill in the Blank :

- (xvi) The user interface where a user interacts by typing commands is known as
- (xvii) The statement `for (i = 0; i ≤ 10; i++)` will iterate the loop.....times.
- (xviii)..... is data type used in C that is used to represent real numbers.
- (xix) is used to close a file.
- (xx) The program that is generated after the compilation is generally called.....



SECTION - B

10×3=30

Note : There are FIVE questions in this section. Attempt any three question from this Section.

- 2 (i) (a) Draw the functional block diagram of a Digital Computer and discuss its components in brief.
- (b) Draw the flow chart for finding out largest of given three positive integers.
- (ii) (a) Write various data types and storage classes supported in C with example.
- (b) What is the use of bitwise operators? Describe any **two** bitwise operators with example.
- (iii) (a) Write a program in C which inputs ten integers and print their average.
- (b) What is the use of 'switch' statement? Write the syntax of 'switch' statement and explain how it is different from 'if' statement.
- (iv) (a) Write a program in C that accepts N x N matrix as input and prints transpose of this matrix.
- (b) What is dynamic memory allocation? Explain; **malloc** function with a suitable example.
- (v) (a) What is sorting? Explain any **one** sorting technique with the following data.
- 76, 89, 31, 11, -6, -15, 0, 17
- (b) Write a program in C that takes ten integers from a file and write square of these integers into another file.



SECTION - C

10×5=50

Note : There are FIVE questions in this section. Attempt ALL questions.

3 Attempt any **one** part :

(a) Convert the following:

(i) $(1101101)_2$ to Decimal

(ii) $(4567)_8$ to Binary

(iii) $(B678A)_{16}$ to Decimal

(iv) $(125)_{10}$ to Binary

(b) Write short notes on following :

(i) Structured Programming

(ii) Flow Chart

4 Attempt any **one** part :

(a) Write an algorithm to input the date in the **dd/mm/yyyy** format and prints YES if it is a valid date otherwise prints NO.

(b) Write a program to calculate the sum of following series up to first 100 terms

$$S = 1^4 + 3^4 + 5^4 + 7^4 + \dots \text{100 terms}$$

5 Attempt any **one** part :

(a) Show with the example how arguments are passed using 'call by value' and 'call by reference' respectively.

(b) Write a program in C to check whether a given string is a palindrome or not?



6 Attempt any **one** part.

- (a) Write a program in C to multiply TWO matrices of $N \times N$ dimension.
- (b) Declare a structure which contains the following members and write a program in C to list all students who scored more than 75 marks.

Roll No, name, father's name, age, city, marks

7 Attempt any **one** part.

- (a) Given an array of 20 integers. Write a program in C to search for a given integer in that array.
- (b) How the macros are defined and called in C ? Explain with example.

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