

Registration No:

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Total Number of Pages : 02

MCA  
MCA101

**1<sup>st</sup> Semester Regular/Back Examination 2017-18**  
**PROBLEM SOLVING AND PROGRAMMING USING C**

BRANCH: MCA

Time: 3 Hours

Max Marks: 100

Q.CODE : B764

**Answer Question No.1&2 which is compulsory and any four from the rest.**

**The figures in the right hand margin indicate marks.**

**Q1      Fill in the blanks:      (2 x 10)**

- a) Convert the given binary value to decimal  $(11001.101)_2 = (\text{-----})_{10}$
- b)  $(1001)_2 + (101)_8 + (100)_{10} = (\text{-----})_{16}$
- c) Find the value of  $a = \text{-----}$  and  $b = \text{-----}$  ?  
 $a=5, b=10;$   
 $a=a+b-(b=a);$   
 $\text{printf}("\n a= %d b= %d",a,b);$
- d) Find the value of  $i = \text{-----}$ ?  
 $\text{int } x=20, y=30, z=15, i;$   
 $i=x<y<z;$   
 $\text{printf}("%d",i);$
- e)  $\text{char } *p;$   
 $p="master";$   
 $\text{printf}("%s", *&p);$   
Output: -----?
- f)  $\text{int } x=66;$   
 $\text{printf}("%d%d%d", x<=66, x=30, x>=10);$   
Output: ----- ?
- g) A pointer is :-----  
(i). A keyboard (ii). A variable that stores address of instruction. (iii). All of the Above. (iv). A variable that stores address of another variable
- h) Which is not a logical operator: -----?  
(i) & (ii) && (iii) || (iv) !
- i) Which cannot be checked in a switch-case statement: -----?  
(i). Character (ii). integer (iii). float (iv). enum
- j)  $\text{char } *x = "I am a student";$   
Find the value of  $*x, *(x+3)$  and  $*(x+5)$ :-----

**Q2      Answer the following questions :      (2 x 10)**

- a) Subtract  $(11001)_2$  from  $(10111)_2$  using 2's complement method.
- b) What do you mean by preprocessor directives?
- c) Write correct precedence order of Relational, Arithmetic, Logical and Assignment operators.
- d) Compare, in terms of their functions, break and continue?
- e) What will happen when a For loop with the no test condition?
- f) Write a for statement to print the below sequences  
-4, -2, 0, 2, 4

- g) Compare ,in terms of their functions, while and do....while
  - h) What is a null pointer?
  - i) List the four major operations on the file, either text or binary:
  - j) Write different file opening modes and their work in c languages.
- Q3** a) Write an algorithm and flowchart for calculate factorial of a given number. (7)
- b) Prepare a neat diagram for a computer, briefly explain the following: (8)  
(i).interpreter (ii). Compiler (iii). Loader (iv). linker.
- Q4** a) Write a program to provide multiple options such as choices are (1): display number and check even and odd, (2): digit sum of the number, (3): reverse of the number .by using switch () statement. (7)
- b) Write a program to enter 16 numbers in a two dimensional array and sort them in descending order and display the sorted two dimensional array. (8)
- Q5** a) Write a c program to calculate the length of a given string including and excluding spaces using pointers and display the result. (7)
- b) Briefly explain about void pointer and wild pointer with example (8)
- Q6** a) Write a c program to display Fibonacci series using recursion (7)
- b) Write a c program to display the below series using user-defined function. (8)  
1, 4 ,9,16,25,36,49,64- - - - -
- Q7** a) In a race many players are participated, write a program to read and display ,player number starting time and reaching time, use structure within structure like below : (7)
- |                |                |              |
|----------------|----------------|--------------|
| Player number: | Starting time: | Ending time: |
| 111            | 02:15:10       | 03:10:15     |
- b) Write down the difference between (8)  
(i).structure vs. union  
(ii).call by value vs call by reference.
- Q8** a) Write a c program to find sum of n elements entered by user. To perform this program, allocate memory dynamically using calloc() and free() function. (7)
- b) A file named NUMBER contains a series of integer numbers. write a program to read these numbers and write all odd numbers to a file to be called ODDNUM and all even numbers to afile to be called EVENNUM (8)