Time: 3 hours   **Marks: 80**

N.B
- **(1) Question no. 1 is compulsory.**
- **(2) Attempt any 3 from the remaining questions.**
- **(3) Assume suitable data if necessary.**
- **(4) Figures to right indicate full marks.**

Q.1   a.   Attempt the Multiple Choice Questions   **6**

i) The format identifier '%i' is also used for_____data type?

(a) char   (b) int   (c) double   (d) float

ii) Which keyword can be used for coming out of recursion?

(a) break   (b) exit   (c) return   (d) all of above

iii) What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?

(a) The element will be set to 0

(b) The compiler would report an error

(c) The program may crash if some important data gets overwritten

(d) The array size would appropriately grow.

iv) A pointer is

(a) A keyword used to create variable

(b) A variable that stores address of an instruction

(c) A variable that stores address of other variable

(d) All of the above

v) In which order do the following gets evaluated

1. Relational
2. Arithmetic
3. Logical
4. Assignment

(a) 2134   (b) 1234   (c) 4321   (d) 3214

vi) Which of the following cannot be a structure member?

(a) Another structure   (b) Function   (c) Array

(d) None of the mentioned

   b)   Find the output of following   **4**

i))
```c
#include<stdio.h>
void main()
{
 int c;
for(c=1;c<=5;)
printf("%d",++c);
}
```

ii) How many ' x' are printed by the following code?
```c
#include<stdio.h>
void main()
{
 int i=5;
while(i-- > 0)
printf("x");
printf("x");
}
```

	c)	Draw a flowchart for printing the sum of even terms contained within the numbers 0-20.	**4**
	d)	Solve the following i)Convert 238 decimal to octal ii)Convert A3D Hexadecimal to decimal	**6**
Q.2	a)	Distinguish between i)While and do-while loop ii)break and continue	**6**
	b)	Write a c program that will convert a decimal number into any base.	**6**
	c)	Write a program to calculate the sum of following series without pow( ) library function $S=1-x+x^2/2!-x^3/3! + \ldots\ldots$ N terms	**8**
Q.3	a)	What is an array? What does an array name signify? Can array index be negative? Write a c program to arrange the number stored in an array in such a way that the array will have the odd numbers followed by even numbers.	**10**
	b)	Write a program that accepts a word from the user and prints it in the following way. For ex. If the word is "STUDY" the program will print it as S ST STU STUD STUDY	**10**
Q.4	a)	What is string? Explain the use of gets( )?Write a c program that will read a word and rewrite it in alphabetical order. For ex. If the word is "matrix" the program should print "aimrtx".	**10**
	b)	Explain recursion and its advantages? Write a recursive c program to find the factorial of a given number.	**10**
Q.5	a)	Explain the storage classes with example.	**10**
	b)	Declare a structure to store the information of 10 cricketers. i. Cricketer name ii. Matches Played iii. Runs Scored iv. Strike rate Use a function to display the cricketer information having the maximum strike rate.	**10**
Q.6	a)	How do pointers differ from variables in c? Write a c program to add two pointers.	**10**
	b)	What is file? Write a c program that include the menu that must have the following capabilities i) Enter the several lines of text and store them in a data file. ii) Retrieve and display the particular line. iii)Delete n lines	**10**

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