

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) #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?

```

#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 **6**
 i) Convert 238 decimal to octal
 ii) Convert A3D Hexadecimal to decimal
- Q.2 a) Distinguish between **6**
 i) While and do-while loop
 ii) break and continue
- 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 **8**
 $S = 1 - x + x^2/2! - x^3/3! + \dots + N$ terms
- 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. **10**
 For ex. If the word is "STUDY" the program will print it as
 S
 ST
 STU
 STUD
 STUDY
- 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. **10**
 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.
- 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 **10**
 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
