Subject: Problem Solving in C   BE (**Semester**): 5th CT: **Second** Max. Marks: **40**
Min. Marks: **14**
Session: **July-Dec, 2019**   Time: **02 Hrs**
Note: - Part **(a)** of each question is compulsory.
Attempt any two parts from **(b) (c)** & **(d)**.

	Mapping between COs	Mapping between POs	Marks

Q.1

(a)
```
main( ) {
    int  a[5] = { 5, 1, 15, 20, 25 } ;
    int  i, j, k = 1, m ;
    i = ++a[1] ;
    j = a[1]++ ;
    m = a[i++] ;
    printf ( "\n%d %d %d", i, j, m ) ; }
```

	1,2,3	1,2,5,8,9	[02]

(b) Write a program for the following series using function .

$$1/1! - 2^2/2! + 3^3/3! - 4^4/4! + \ldots\ldots\ldots$$

	4,2	3,5,8,9,10	[06]

(c) Write a program to draw following pattern
```
    1
   0 1
  1 0 1
 0 1 0 1
```

	2,3,5	8,9,10	[06]

(d) Match the following with reference to the following segment:

```
int x[3][5] = {
        { 1, 2, 3, 4, 5 },
        { 6, 7, 8, 9, 10 },
        { 11, 12, 13, 14, 15 }   }, *n = &x ;

1. *( *( x + 2 ) + 1)              a. 9
2. *( *x + 2 ) + 5                 b. 13
3. *( *( x + 1))                   c. 4
4. *( *( x ) + 2 ) + 1             d. 3
5. *( *( x + 1 ) + 3 )             e. 2
6. *n                             f. 12
7. *( n +2 )                      g. 14
8. (*(n+ 3 ) + 1                  h. 7
9. *(n+ 5)+1                      i. 1
10. ++*n                          j. 8
                                  k. 5
                                  1. 10
                                  m. 6
```

	4,5,6	2,6,8,10	[06]

Q.2

(a) what is the output of the following program
```
int main () {
    int a[]={0,1,2,3,4} ;
    int I , *ptr;
    for(ptr=a+4,i=0;i<=4;i++)
        printf("%d",ptr[-i]);
    return 0;
}
```

	1,2,3	4,5,8,9,10	[02]

(b) Explain odd loop with example .

	2,3,4,5	3,6,5,8,10	[06]

(c)	sort the array with the help of insertion sort . and also write a program. 4 , 3 , 5 , 2 , 1		3,4,5,	5,6,9,8,10,11,12	[06]
(d)	Write a program to check the symmetricity of a Matrix .		2,3,5	3,4,5,9,7	[06]
Q.3 (a)	What are Pointers? How Array will be passed to function using Pointers.		2,3,4,5	1,2,3,6,8,9	[02]
(b)	Write the procedure of Opening, Closing & Processing a data File.		2,3,5,6	3,5,7,8,9	[05]
(c)	Explain Call by Value & Call by Reference using Suitable Example.		2,4,5,6	2,3,6,8,9	[05]
(d)	Explain Dangling pointer ,void pointer , Null Pointer , wild pointer.		5,6	1,3,5,9,10,11,12	[05]

*****ALL THE BEST*****