

Ahsanullah University of Science and Technology
Quiz #4 , Spring 2006 CSE 101, Programming Language I
Total Marks: 10, Time: 25 Min

Name _____ Roll: _____

1. Write a recursive function **FACT(n)** to calculate the factorial of **n** where **n** will be provided from the keyboard. Clearly show in border the recursive statements and the termination conditions. 3
2. What are the disadvantages of Recursion? 1
3. Write a program that declares a 2D matrix MAT[N][N] where N is 6 and using loops, fills the matrix with the following values. 3

MAT

1	2	3	4	5	6
7	7	7	7	7	7
8	9	10	11	12	13
14	14	14	14	14	14
15	16	17	18	19	20
21	21	21	21	21	21

4. Find the exact output from the following code segment. The current memory status for the program is shown on the right side of the program. 3

```
int p, s, *ptr;
int a[3]= {2,5,7};
ptr= a;
printf("%d\n", *(ptr+1) );
*ptr = *ptr + 1;
printf("%d\n", *ptr);
ptr = s;
printf("%d\n", *ptr);
ptr --;
printf("%d\n", *(ptr));
printf("%x", &s);
```

FFA0		
FFA1	12	p
FFA2		
FFA3	14	s
FFA4		
FFA5	2	a
FFA6		
FFA7	5	
FFA8		
FFA9	7	
FFAA		
FFAB		
FFAC		ptr

Address Data

Name _____ Roll: _____

1. Write a recursive function **POWER(x, n)** to calculate x^n where **x** and **n** will be provided from the keyboard. Clearly show in border the recursive statements and the termination conditions. 3

2. What are the advantages of Recursion? 1

3. Write a program that declares a 2D matrix MAT[N][N] where N is 5 and using loops, fills the matrix with the following values. 3

MAT

1	6	15	20	29
2	8	16	22	30
3	10	17	24	31
4	12	18	26	32
5	14	19	28	33

4. Find the exact output from the following code segment. The current memory status for the program is shown on the right side of the program. 3

```
int b=10 , c=15, *ptr;
int a[2]= {1,5};
ptr= &b;
printf("%d\n", *ptr);
ptr++;
printf("%d\n", *ptr);
ptr = a;
printf("%d\n", *(ptr+1));
*ptr=(*ptr)- 1;
printf("%d\n", *(ptr+1));
printf("%x", &b);
```

FF10		
FF11		
FF12	1	a
FF13		
FF14	5	b
FF15		
FF16	10	c
FF17		
FF18	15	ptr
FF19		
FF1A		
FF1B		
FF1C		
FF1D		

Address Data