Mid-Semester PDS Lab Test

Section-5; Date: 27 Feb 2017; Time: 2.00 to 4.30 pm; Marks: 100

(For ODD MACHINE NUMBERS)

1. Write a C program to compute the following: (*do not use any math functions*) **(25 Marks)**

(a) Enter the principle amount and annual rate of interest

(b) Assume that the interest is computed in compound manner for annually as well as monthly. You may use the monthly rate of interest as (1/12) of annual rate of interest. Determine the number of months at which the difference in total amount (principle plus interest) is differed by 25%. *(Hint: interest = (p*n*r)/100)*

2. Write C functions to (i) compute and return the maximum value of the elements in a given array and (ii) compute and return the position of the given value from an array. **(35 Marks)** Through main function Read N numbers from key board and place them in an array. By using the above defined functions compute the maximum element of the array and find the position of the maximum element of the array. Finally, remove the maximum element from an array and place it at the last position of the array.

   Print the following outputs: (i) Original array after the input from key board, (ii) Maximum value of the array, (iii) Position of the maximum value in the array and (iv) Array after placing the maximum element at the last position.

Example: N=6; array = a[]; max_array = 6.7432; position of max_array = 2;

Array index	a(0)	a(1)	a(2)	a(3)	a(4)	a(5)	a(6)	a(7)	a(8)	a(9)
Input	2.75	1.05	**6.7432**	1.2345	-8.987	4.05				
Output	2.75	1.05	1.2345	-8.987	4.05	**6.7432**				

3. Write a C program to print all possible sub-strings of a given string in forward direction. First, accept the input string terminated with new line character. Print the input string collected through key board, and print the sub-strings as shown below: **(40 Marks)**

```
Input: abcdefg
Output:
a       b       c       d       e       f       g
ab      bc      cd      de      ef      fg
abc     bcd     cde     def     efg
abcd    bcde    cdef    defg
abcde   bcdef   cdefg
abcdef  bcdefg
abcdefg
```

Mid-Semester PDS Lab Test

Section-5; Date: 27 Feb 2017; Time: 2.00 to 4.30 pm; Marks: 100

(For EVEN MACHINE NUMBERS)

1 Write a C program to compute the following: (*do not use any math functions*) **(25 Marks)**

(a) Enter the principle amount and monthly rate of interest.

(b) Assume that the interest is computed in compound manner for monthly as well as daily. You may use the daily rate of interest as (1/30) of monthly rate of interest. Determine the number of days at which the difference in total amount (principle plus interest) is differed by 15%. *(Hint: interest = (p*n*r)/100)*

2 Write C functions to (i) compute and return the minimum value of the elements in a given array and (ii) compute and return the position of the given value from an array. **(35 Marks)**
Through main function Read N numbers from key board and place them in an array. By using the above defined functions compute the minimum element of the array and find the position of the minimum element of the array. Finally, remove the minimum element from an array and place it at the initial (first) position of the array.
Print the following outputs: (i) Original array after the input from key board, (ii) Minimum value of the array, (iii) Position of the minimum value in the array and (iv) Array after placing the minimum element at the initial (first) position.

Example: N=6; array = a[]; min_array = -8.987; position of min_array = 4;

Array index	a(0)	a(1)	a(2)	a(3)	a(4)	a(5)	a(6)	a(7)	a(8)	a(9)
Input	2.75	1.05	6.7432	1.2345	**-8.987**	4.05				
Output	**-8.987**	2.75	1.05	6.7432	1.2345	4.05				

3 Write a C program to print all possible sub-strings of a given string from the end in reverse order. First, accept the input string terminated with new line character. Print the input string collected through key board, and print the sub-strings as shown below: **(40 Marks)**

Input: abcdefg
Output:

g	f	e	d	c	b	a
gf	fe	ed	dc	cb	ba	
gfe	fed	edc	dcb	cba		
gfed	fedc	edcb	dcba			
gfedc	fedcb	edcba				
gfedcb	fedcba					
gfedcba						