



UNITED INTERNATIONAL UNIVERSITY

Department of Computer Science and Engineering

Exam: Final Year: 2019 Trimester: Summer Course: CSE 1111/CSI 121

Title: Structured Programming Language Marks: 40 Time: 2 hours

There are **FIVE** Questions. Answer all of them. Numerical figure in the right margin indicates full marks.

1	a)	Show manual tracing of the following code segment and find output. [CO4] <pre>char str1[7]={'\0'}; char str2[4]={'\0'}; int i, k; strcpy(str1, "CSE"); strcpy(str2, "UIU"); i=strlen(str1); for(k=0; str2[k] !='\0'; ++k) str1[i+k]=str2[k]; puts(str1); printf("\n"); strrev(str1); puts(str1);</pre>	4.0									
	b)	Write a program that prints all the even numbers of an input 2D array A[n][n] of integer type, where n is an input integer from keyboard. Remember that monitor displays numbers in column-wise. [CO5] <table><tr><th>Sample Input</th><th>Sample Input 2D array A[n][n]</th><th>Sample Output</th></tr><tr><td>n=3</td><td>23 78 79 22 26 24 9 15 11</td><td>22 78 26 24</td></tr><tr><td>n=4</td><td>23 78 79 8 22 26 24 6 9 15 11 5 7 29 27 1</td><td>22 78 26 24 8 6</td></tr></table>	Sample Input	Sample Input 2D array A[n][n]	Sample Output	n=3	23 78 79 22 26 24 9 15 11	22 78 26 24	n=4	23 78 79 8 22 26 24 6 9 15 11 5 7 29 27 1	22 78 26 24 8 6	4.0
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2	a)	Show manual tracing for the following program and find output. [CO4] <pre>#include<stdio.h> int a, b; int func1(float x); void func2(int x, float y); int main(){ a=11; b=25; printf("%d %d\n", a, b); a=func1(5.5); func2(12, 15.0); printf("%d %d\n", a, b);</pre>	4.0									

		<pre> return 0; } int func1(float x) { b=b+a; printf("%f\n", x); func2(5, 4.5); return b; } void func2(int x, float y){ printf("%d %f\n", x, y); return; } </pre>	
	b)	<p>Write a program using a user defined functions to perform the following operations [CO4]</p> <ol style="list-style-type: none"> main() reads an integer number from keyboard and sends the number to the user defined function, int digitPosition(int number) as parameter. main() calls int digitPosition(int number) to find the second digit of the number from the right side and returns digit to the main(). main() prints the return value from int digitPosition(int number) on monitor. 	4.0
3	a)	<p>Find output for the following program [CO4]</p> <pre> #include<stdio.h> int func(int x); int main(){ printf("%d\n", func(435)); printf("%d", func(89)); return 0; } int func(int x){ if (x==0) return 0; else return x%10+func(x/10); } </pre> <p style="text-align: center;">OR</p> <p>What will be the effect of the following program?</p> <pre> #include<stdio.h> int main(){ FILE *fp1; int i, sum; int num[5]={10, 20, 30, 40, 50}; fp1= fopen("D:\\students\\dest.txt", "w"); sum=0; for(i=4; i>=0; i--){ sum=sum+num[i]; fprintf(fp1, "%d %d\n", num[i], sum); } fclose(fp1); return 0; } </pre>	4.0
	b	<p>Write a program to read 10 integers from a text file, and to calculate and print the maximum among the numbers. [CO4]</p>	4.0

4	<p>Write a program having the structure student (name, id, marks) to perform the following operations for 4 students [CO5]</p> <ol style="list-style-type: none"> Read name, id, marks of 4 students from keyboard Find the average of marks of all the 4 students. Display the following sample report on monitor: <pre> Rahim 10 85.0 Saiham 20 85.4 Sabera 15 82.8 Farhan 18 80.0 Average: 83.3 </pre>	8.0
5	<p>a) Write a program to calculate and print the sum of two integer numbers stored in pointer variables a and b, where values of a and b are taken from keyboard. Remember that all the variables in the program must be pointer variables. [CO4]</p>	4.0
	<p>b) Find output for the following program [CO4]</p> <pre> #include<stdio.h> void change(int *x, int y){ *x=*x+11; y=y*10; return; } int main(){ int a=10; int b=20; printf("%d %d\n", a, b); change(&a, b); printf("%d %d\n", a, b); return 0; } </pre> <p style="text-align: center;">OR</p> <pre> #include<stdio.h> void func(int B[], int n); int main(){ int A[5]={10, 20, 30, 40, 50}; int i; for(i=4; i>=0; i--) printf("%d ", A[i]); func(A, 5); printf("\n"); for(i=0; i<5; i++) printf("%d ", A[i]); return 0; } void func(int B[], int n){ int i; for(i=0; i<n; i++) B[i]= (B[i]+i)*(i+1); return; } </pre>	4.0