Daffodil International University

Faculty of Science & Information Technology

Department of Software Engineering

Final-Term Examination – Fall 2025

Course Code: SE 121; Course Title: Structured Programming

Sections & Teachers: All; MSS, JIC, MR, AHZ, SCS, MBH, AJE

Time: 2 Hours **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1. a) **Detect** any errors in the following codes and **modify** them with the necessary changes. **[Marks-6]** **CLO-3** ***Level-3***

i)
```
#include <stdio.h>
#include <string.h>
int main() {
    char s[10] = "programming";
    char d[5];
    strcopy(d, s);
    printf("Source: %s\n", s);
    printf("Dest: %d\n", d);

    return 0;
}
```

ii)
```
#include <stdio.h>

int main() {
    char n[5];
    int i;
    printf("Enter name: ");
    scanf("%s", n);
for (i = 0; i <=5;i++){
        if (n[i] = 'p') {
printf("Found p at %d\n",
n); }}}
```

b) Suppose you are working as an assistant in a library's digital records section. Your task is to analyze the weekly book-borrowing data to determine how many days a specific number of books were borrowed. **Construct** a C program that uses an array to store the number of books borrowed over a week (7 days) and count the frequency of a user-specified value. **[Marks-7]**

Sample Input	Sample Output
Books borrowed on Day 1: 12 Books borrowed on Day 2: 15 Books borrowed on Day 3: 9 Books borrowed on Day 4: 15 Books borrowed on Day 5: 18 Books borrowed on Day 6: 15 Books borrowed on Day 7: 10 The number of books you want to count: 15	The value 15 occurred 3 times this week.

	c)	Suppose you are working as a tester in a software security department. Your task is to analyze user login data to verify whether an entered password matches the stored system password. **Construct** a C program that will take two strings to store the original password and the user-input password, then compare them to determine if access should be granted. **Sample Input** | **Sample Output** Original password: admin123 User password: admin123 | Access Granted. Original password: swe45 User password: swe44 | Access Denied.	**[Marks-7]**	

2	*a)*	**Identify** the output of the following C codes and **Explain** the reasoning behind your answer.
		i)
		`#include <stdio.h>`
		`int test(int a[], int n) {`
		`  int i, s = 0;`
		`  for (i = 0; i < n; i += 2) {`
		`  s += a[i]; }`
		`  return s;}`
		`int main() {`
		`  int arr[ ] = {2, 4, 6, 8, 10};`
		`  printf("%d\n", test(arr, 5));`
		`  return 0;`
		`}`
		ii)
		`#include <stdio.h>`
		`int cnt(char s[]) {`
		`  int i, c = 0;`
		`  for (i = 0; s[i] != '\0'; i++) {`
		`  if (s[i] != ' ')`
		`  c++; }`
		`  return c;}`
		`int main() {`
		`  char str[ ] = "C Prog";`
		`  printf("%d\n", cnt(str));`
		`  return 0; }`
			[Marks-6]	**CLO-4**
				Level-4

2.	*b)*	Suppose you are helping your younger brother understand time conversion. You need to convert a given duration in total minutes into hours and remaining minutes so that he can learn how time is broken down. **Construct** a C program that uses a function *void timeConversion(int minute)* to perform this conversion and display the result in hours and minutes. **Sample Input** | **Sample Output** Enter Minutes: 125 | 2 hours 5 minutes	**[Marks-7]**	**CLO-4** ***Level-3***

	c)	Suppose you are working as an intern at a data analytics center. Your task is to analyze a performance matrix stored in a 2D array, where each row represents a department and each column represents recorded output values. **Complete** the following C program by filling in the missing portions of the function to find and return the maximum value in the entire 2D matrix.
		`#include <stdio.h>`
		`int Max(int a[][10], int r, int c) { }`
		`int main() {`
		`  int a[10][10], rows, cols, i, j;`
		`  scanf("%d %d", &rows, &Cols);`
		`  for (i = 0; i < rows; i++) {`
		`  for (j = 0; j < cols; j++) {`
		`  scanf("%d", &a[i][j]); }}`
		`  printf("Max value in the matrix = %d\n", Max(a, rows, cols));`
		`return 0;}`
			[Marks-7]	**CLO4**
				Level-3