



**Daffodil International University**  
**Faculty of Science & Information Technology**  
**Department of Software Engineering**

Mid Examination – Fall 2025

Course Code: SE 121; Course Title: Structured Programming

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

Time: 1.5 Hours

Marks: 25

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)	Interpret the output and explain value changes at each step.	[Marks-4]		CLO-1 Level-2																
		<pre>#include &lt;stdio.h&gt; int main() { int a =15, b=7, c, d; b = a++; c = --b; d = (a&gt;b) &amp;&amp; (b&gt;c); printf ("%d\n %d\n %d\n %d\n", a, b, c, d); }</pre>																			
	b)	Rewrite both programs in a correct and compilable form.	[Marks-6]		CLO-1 Level-2																
		<div><div>i) #include&lt;stdio.h&gt; int main { int num = 42; float PI_VAL = 3.14159; printf("Number: %f\n", num); printf("PI: %f\n", PI_VAL); return; }</div><div>ii) #include &lt;stdio.h&gt; int main () { float number; scanf("%f", number); int res = sqrt(number); printf("Result is: %d\n", res); return 0; }</div></div>																			
2	a)	A restaurant wants to automate billing.	[Marks-4]		CLO-2 Level-3																
		<table><tr><th>Item Code</th><th>Item Name</th><th>Price (BDT)</th></tr><tr><td>1</td><td>Burger</td><td>180</td></tr><tr><td>2</td><td>Pizza</td><td>250</td></tr><tr><td>3</td><td>Pasta</td><td>200</td></tr></table> <p>Build a C program using a <i>switch-case</i> where the user enters an item code (1-3) and quantity, then displays the total bill or "Invalid choice" for an invalid code.</p> <table><tr><th>Sample Input</th><th>Sample Output</th></tr><tr><td>Enter item code (1-3): 2 Enter quantity: 3</td><td>Total Bill = 750 BDT</td></tr></table>	Item Code	Item Name	Price (BDT)	1	Burger	180	2	Pizza	250	3	Pasta	200	Sample Input	Sample Output	Enter item code (1-3): 2 Enter quantity: 3	Total Bill = 750 BDT			
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2.	b)	<p>Construct a C program to simulate the Deshi Squid Game. A player starts with 1000 taka and plays 5 rounds.</p> <ul style="list-style-type: none"><li>• Winning a round adds 500 taka.</li><li>• Losing a round deducts 500 taka.</li><li>• If the balance becomes 0 or less, the player is eliminated, and the game stops immediately.</li><li>• After the game ends, display the final balance and whether the player survived or was eliminated.</li></ul> <table><tr><th>Sample Input</th><th>Sample Output</th></tr><tr><td>Round 1 result (1 = Win, 0 = Lose): 1 Round 2 result (1 = Win, 0 = Lose): 0 Round 3 result (1 = Win, 0 = Lose): 1 Round 4 result (1 = Win, 0 = Lose): 1 Round 5 result (1 = Win, 0 = Lose): 1</td><td>Final Balance: 2500 Status: Survived!</td></tr><tr><th>Sample Input</th><th>Sample Output</th></tr><tr><td>Round 1 result (1 = Win, 0 = Lose): 0 Round 2 result (1 = Win, 0 = Lose): 0</td><td>Player Eliminated! Balance reached 0.</td></tr></table>	Sample Input	Sample Output	Round 1 result (1 = Win, 0 = Lose): 1 Round 2 result (1 = Win, 0 = Lose): 0 Round 3 result (1 = Win, 0 = Lose): 1 Round 4 result (1 = Win, 0 = Lose): 1 Round 5 result (1 = Win, 0 = Lose): 1	Final Balance: 2500 Status: Survived!	Sample Input	Sample Output	Round 1 result (1 = Win, 0 = Lose): 0 Round 2 result (1 = Win, 0 = Lose): 0	Player Eliminated! Balance reached 0.	[Marks-6]		CLO-2 Level-3
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	c)	<p>A smart security system verifies a user's access code by checking the sum of its digits.</p> <p>Construct a C program using a loop that takes a numeric code as input and calculates the sum of all its digits.</p> <table><tr><th>Sample Input</th><th>Sample Output</th></tr><tr><td>Enter the code number: 567</td><td>Sum of Digits = 18</td></tr><tr><th>Sample Input</th><th>Sample Output</th></tr><tr><td>Enter the code number: 511</td><td>Sum of Digits = 7</td></tr></table>	Sample Input	Sample Output	Enter the code number: 567	Sum of Digits = 18	Sample Input	Sample Output	Enter the code number: 511	Sum of Digits = 7	[Marks-5]		CLO2 Level-3
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