Daffodil International University
Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Summer 2025
Course Code: SE 232; Course Title: Operating System & System Program
Sections & Teachers: 41(A-N), IS, MBM, MAAA, FC, MRN, DDK, RRB
Time: 1 Hour 30 Mins | 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 student is compiling code on a single processor computer. At the same time, other processes like a browser and an update service are in the ready state. The CPU becomes available after finishing another task. The scheduler checks the ready queue and selects the compilation process based on its priority. Unfortunately, the compiler gets an error interruption and after handling this, the student wants to print the screenshot of output to a printer for the lab report.		
	a)	Describe the whole process transition from its new state to the terminated state mentioning all the scenarios.	[Marks-5]	CLO-1 Level-1
	b)	State the operating system of this work environment with proper reasoning.	[Marks-5]	
2.	a)	Demonstrate the concept of one to one multithreading model and the difference between the process and thread.	[Marks-5]	CLO-2 Level-3
	b)		[Marks-6]	

PID	Arrival Time	Burst Time	Priority
P1	0	6	6
P2	1	3	3
P3	2	1	1
P4	3	2	2

Apply the SRTF and Preemptive Priority Scheduling (Low value = High Priority) algorithms considering the scenario and calculate the average waiting time. Show that the average waiting time is identical for both the algorithms, determine the reason for this.

[Marks-4]

c)

PID	Arrival Time	Burst Time
P1	1	10
P2	5	8
P3	2	3
P4	6	5

Apply the Round Robin algorithm for the above scenario to find out the average waiting time and turnaround time, where Quantum = 2