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Mid-Term Examinations, April 2021

Programme	:	B.Tech. – Computer Science and Engineering	Semester	:	Interim 2021-2022
Course	:	Operating System	Code	:	CSE3003
Faculty	:	Dr. Abha Trivedi	Slot/Class No.	:	B11+DB1/0116
Time	:	1½ hours	Max. Marks	:	50

Answer all the Questions

Q. No.	Question Description	Marks
1	With the help of a neat diagram, illustrate all the steps involved when CPU handles an Interrupt. Briefly, differentiate between Hardware and Software interrupts.	10
2	Justify the statement "Operating System can be viewed as a government, resource allocator and a control program" in terms of different services provided by the OS.	10
3	Take all possible cases and show the use of Counting Semaphore when '4' processes execute concurrently and wish to access their critical section. Also, write the algorithm for wait() and signal() system calls.	10
4	What is the role of long-term scheduler, short-term scheduler and medium-term scheduler in Operating System?	10

5   For the following set of process find average turnaround time, waiting time and response time using Gantt chart:

    a)   Preemptive SJF Scheduling (SRTF)

Process No.	Arrival Time	Burst Time
P1	0	7
P2	2	4
P3	4	2
P4	7	1

10
(5+5)

    b)   Non-preemptive Priority Scheduling (Lower the number- higher the priority)

Priority	Process No.	Arrival Time	Burst Time
5	P1	2	5
4	P2	1	6
6	P3	4	8
1	P4	3	2
2	P5	5	1
3	P6	6	3

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