Printed page: 3

Subject Code: ACSE0403A

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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute)

Affiliated to Dr. A.P. J. Abdul Kalam Technical University, Uttar Pradesh, Lucknow

Course: B.Tech. Branch CSE

Semester: IV (A+B+C+D) Sessional Examination: 1st Year- (2021 - 2022)

Subject Name: Operating System

Time: 1.15 Hours **[SET- A]** **Max. Marks:30**

General Instructions:

- This Question paper consists of 3 pages & 5 questions. It comprises of three Sections, A, B, and C
- **Section A** -Question No- 1 is objective type questions carrying 1 mark each, Question No- 2 is very short answer type carrying 2 mark each. You are expected to answer them as directed.
- **Section B** - Question No-3 is Short answer type questions carrying 5 marks each. Attempt any two out of three questions given.
- **Section C** - Question No. 4 & 5are Long answer type (within unit choice) questions carrying 6 marks each. Attempt any one part *a* or *b*.

		SECTION – A	**[08Marks]**	
1.	**All questions are compulsory**		**(4×1=4)**	
	a.	Response time is A. the total time taken from the submission time till the completion time . B. the total time taken from the submission time till the first response is produced C. the total time taken from submission time till the response is output D. none of the mentioned	**(1)**	**CO2**
	b.	Multitasking Operating Systems are also known as A. Processing system C. Real Time system B. Time-sharing system D. Distributed system.	**(1)**	**CO1**
	c.	Multiprogramming of the computer system increases A. Memory C. Storage B. CPU utilization D. Cost	**(1)**	**CO1**
	d.	The number of processes completed per unit time is	**(1)**	**CO2**

		known as _____ A. Output C. Efficiency B. Throughput D. Capacity		
2.	**All questions are compulsory**		**(2×2=4)**	
	a.	Define operating system and the services of operating system.	**(2)**	**CO1**
	b.	Differentiate between Process & Program.	**(2)**	**CO2**
		SECTION – B	**[10Marks]**	
3.	**Answer any <u>two</u> of the following-**		**(2×5=10)**	
	a.	Describe Kernel. Differentiate between Monolithic and Micro Kernel.	**(5)**	**CO1**
	b.	Briefly describe process transition diagram with function of a process in each state.	**(5)**	**CO2**
	c.	Define the concept of Multiprogramming. Compare it with time sharing system.	**(5)**	**CO1**
		SECTION – C	**[12Marks]**	
4	**Answer any <u>one</u> of the following-**		**(1×6=6)**	
	a.	Explain the following: i) System call ii) Process Control Block	**(6)**	**CO1** **CO2**
	b.	Explain Batch Processing System & Real time system with its types.	**(6)**	**CO1**
5.	**Answer any <u>one</u> of the following-**		**(1×6=6)**	
	a.	Explain any 3 of the following: I) Long term scheduler II) Short term scheduler III) Middle term scheduler IV) Dispatcher V) Multithreading VI) SPOOLING	**(6)**	**CO1**
	b.	Consider the set of processes given in table Pid AT BT A 2 4 B 0 7 C 3 2	**(6)**	**CO2**

		D 4 4 E 5 5 Draw Gantt chart and find average waiting time and average turnaround time using FCFS algorithm.			