24252

B.Tech. (EE) 5th Semester (F) Scheme (CS & IT)

Examination, December–2018

PRINCIPLES OF OPERATING SYSTEMS

Paper–CSE-301-F

Time allowed : 3 hours] *[Maximum marks :100*

Note : *Attempt 5 questions selecting one question from each section.* ***Question No. 1 is compulsory.***

1. Short answer questions: 5×4=20

(a) Give names of four services provided by operating system

(b) What is control synchronization, dynamic linking and dynamic loading?

(c) Describe clustering.

(d) What is main purpose of system calls and system program?

(e) Explain state transition diagram.

Section-A

2. (a) Explain any three types of operating systems. 10

(b) What do you understand by CPU Scheduling? What is scheduling criteria for FCFS, SJF and SRJF? 10

or

3. For the following table draw a chart and calculate Average turnaround time and Average waiting time for the following algorithms 20

(a) FCFS

(b) Shortest Job First

(c) Shortest remaining job first

(d) Priority

Process	Arrival time	Burst time	Process
P1	0.0	6	2
P2	0.5	4	1
P3	1.0	2	3

Section-B

4. Explain paging and segmentation in detail. 20

or

5. Consider the following reference string: 20

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6

How many page faults will occur for

(a) FIFO

(b) LRU

Assuming 3 and 4 frames.

Section-C

6. Considering an ordered disk queue with requests involving tracks 98, 183, 37, 122, 14, 124, 65, and 67. If the read/write head is initially at track 53, what is the total distance that the disk arm moves to satisfy all the pending requests for FCFS and SSTF ? 20

or

7. Consider the following current resource allocation table: 20

Process	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P1	2	2	3	3	6	8	7	7	10
P2	2	0	3	4	3	3			
P3	1	2	4	3	4	4			

Is current allocation in safe state? If no then tell the safe sequence.

Section-D

8. Write note on history of Linux and features of Linux. 20

or

9. Write note on windows NT architecture and its file system. 20