IT 504

BE V semester

System programming and operating system

Unit I

1 a) what is micro expansion?

b) write any two difference between macros and subroutines?

c) what are the three main purpose of an operating system?

d) What are multitasking, multi programming and multi threading?

Or

What is assembly language? What kinds of statements are present in an assembly language program? Discuss.

Unit II

2 a) what is context switch?

B) Explain dispatcher latency?

c) what is throughput, turnaround time , waiting time, response time?

d) what is meant by inter process communication? Explain the two fundamentals of inter process communication?

Or

CPU burst time indicates the time, the process need the CPU. The following are the set of processes with their respective cpu burst time(in milliseconds)

Process	B.T.
P1	10
P2	5
P3	5

Calculate the average waiting time if the process arrived in following order.

I) P1,p2 and p3

II) P2,p3 and p1

Unit III

3) a) what is a safe state and what is its use in deadlock avoidance?

b) what is race condition?

c) what are the three major activities or an operating system in regard to memory management?

d) Why are translation look aside buffer important? In single paging system, what information is stored in a typical TLB table entry?

Or

An Operating system contains 3 resource classes? The number of resource units these classes is 7, 7 and 10. The current resource allocation state is shown below?

Process	Allocated –Resource			Maximum requirement		
	R1	R2	R3	R1	R2	R3
P1	2	2	3	3	6	8
P2	2	0	3	4	3	3
P3	1	2	4	3	4	4

i) Is the current allocation state safe?

ii) Can the request made by process P1(1,1,0) be granted?

Unit IV

4 a) Differentiate between protection and security?

b) what are the disadvantage FCFS page replacement algorithm?

c) Given memory partitions of 100k, 500k, 200k, 300k and 600k. Apply first fit and best fit algorithm to place processes with the space requirement of 212k, 417k, 112k and 426k ? Which algorithm makes the most efficient use of memory?
d) Explain with the help of examples FIFO and LRU page replacement algorithm?

Or

Describe the thrashing and allocation of frames?

Unit V

5. a) Explain Acyclic graph directory?
b) Write the disadvantage of contiguous allocations?
c) Explain direct access method?
d) Consider a process requesting to read from the following tracks:
98,183,37,122,14,124,65,67

I) Draw track chart for fcfs sstf algorithm of disk scheduling
II) Determine total head movement in tracks in each case.

Or

Explain different disk space allocation methods?