

Hi-Tech Institute of Engineering & Technology

DEPARTMENT OF MCA
(SEM- II) EVEN SEMESTER 2022-23

Subject Code: KCA-203

Subject Name: OS

Time: 90 Minutes

Total Marks: 50

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION-A

1. Attempt all question in brief.

2x 10 = 20

Q.No	Question	Marks	CO
a.	Explain the function of Operating System.	2	1
b.	What Real time OS?	2	2
c.	Explain Reentrant Kernal.	2	3
d.	What are Semaphores.	2	3
e.	Define Multiprogramming in operating system?	2	4
f.	Define Segmentation and its types.	2	1
g.	Draw the Process Transition diagram.	2	2
h.	Define FTP and Telnet.	2	4
i.	Define Cache Memory and Virtual memory.	2	5
J.	Explain I/O devices and I/O buffering.	2	5

SECTION-B

2. Attempt any FOUR of the following:

10 x 3 = 30

Q.No	Question	Marks	CO
a.	Define OS with its layered structure.	10	1
b.	Define Concurrent process and classical problem in concurrency.	10	2
c.	Difference between Thread and process with the help of example.	10	3
d.	Define Memory management.	10	4
e.	Define disk storage and disk scheduling.	10	5

SECTION-C

3. Attempt any ONE part of the following:

10x1 = 10

Q.No	Question	Marks	CO
a.	What is a process and process table? What are different states of process	10	1
b.	Define process synchronization. Discuss critical section problem.	10	1

4. Attempt any ONE part of the following:

10x1 = 10

Q.No	Question	Marks	CO
a.	What is deadlock? What are the necessary conditions for deadlock?	10	2
b.	Define Sleeping Barber Problem with the help of example.	10	2

5. Attempt any ONE part of the following:

10x1 = 10

Q.No	Question	Marks	CO
a.	Define CPU scheduling. Why do we need scheduling?	10	3
b.	What is deadlock detection algorithm? Explain it with example.	10	3

6. Attempt any ONE part of the following:

10x1 = 10

Q.No	Question	Marks	CO
a.	Discuss Deadlock avoidance using Banker's algorithm.	10	4
b.	Define memory management. How many type of partitions. Discuss it.	10	4

7. Attempt any ONE part of the following:

10x1 = 10

Q.No	Question	Marks	CO
a.	Consider a machine with 64 MB physical memory and a 32-bit virtual address space. If the page size is 4KB, what is the approximate size of the page table?	10	5
b.	Define Access matrix. How it can be implemented	10	5