BCA DEGREE END SEMESTER EXAMINATION - JULY 2021
SEMESTER 2 : MOBILE APPLICATIONS AND CLOUD TECHNOLOGY
COURSE : **19U2CRBCA4 : OPERATING SYSTEM**

(For Regular - 2020 Admission & Improvement / Supplementary 2019,2018, 2017,2016 Admissions)

Time : Three Hours   Max. Marks: 75

PART A
Answer All (1 mark each)

1. What is loader?
2. What is the purpose of linker?
3. What is a process? What are attributes of a process?
4. Define a thread.
5. What is dead lock?
6. Define Relative path name.
7. Define equal allocation.
8. What is paging?
9. What you think about Trojan horse?
10. What is access right?

                                                      (1 x 10 = 10)

PART B
Answer any 8 (2 marks each)

11. Differentiate between the command line interface and graphical user interface.
12. Differentiate between the multicore and the multiprocessing systems.
13. What is the relationship between threads and processes?
14. What is Throughput, Turnaround time, Waiting time and Response time?
15. Why system calls are needed?
16. What are the operations that can be done in the directory?
17. Write a short note on single level directory structure.
18. Can you classify intruders and attackers?
19. What is capability based systems?
20. What is mean by revocation of access matrix?

                                                      (2 x 8 = 16)

PART C
Answer any 5 (5 marks each)

21. Explain different sub components of an operating system.
22. Write a note on system programs.
23. Define a process. Describe about PCB.
24. What is a critical section problem? Give the conditions that a solution to the critical section problem must satisfy.
25. Define the virtual memory? What are its advantages?
26. Write a short note on contiguous allocation method.
27. Explain domain structure with example.

                                                      (5 x 5 = 25)

PART D
Answer any 2 (12 marks each)

28. What are system calls? Explain different categories of system calls with example?

29. What is bankers' algorithm? Consider a system with five processes and four type of resources. Suppose that at time 'T' the snapshot of the system has taken as follows.

process	Allocation of resources				Maximum need of resources			
	A	B	C	D	A	B	C	D
P1	0	0	1	2	0	0	1	2
P2	2	0	0	0	2	7	5	0
P3	0	0	3	4	6	6	5	6
P4	2	3	5	4	4	3	5	6
P5	0	3	3	2	0	6	5	2

Whether the system is dead lock free if the available resources are (A,B,C,D)= (2,1,0,0)? If deadlock free, find the safe state sequence of process schedule?

30. Consider a computer system with 40 bit virtual addressing and page size 16KB. If computer system has one level page table and each page table entry requires 48 bits, the find the size of page table in MB?

31. What is meant by computer security? Explain its features and computer security classification in detail.

(12 x 2 = 24)