CHRIST UNIVERSITY,BENGALURU - 560029

End Semester Examination March - 2015

Bachelor of Computer Applications II SEMESTER

Code: BCA234 **Max.Marks: 100**

Subject: OPERATING SYSTEMS **Duration: 3Hrs**

SECTION A

Answer ALL the questions **10X2=20**

1 What is the difference between a command line interface and graphical user interface?

2 What is aging with respect to a process?

3 Differentiate between a Ready Queue, Job queue & Device Queue.

4 What are Co-operating Processes?

5 Define Process Synchronization.

6 What is the difference between counting semaphore and binary semaphore?

7 Mention two methods of deadlock recovery.

8 What is a safe state? How do you ensure it?

9 Differentiate between PAGE and a FRAME.

10 What is Paging?

SECTION B

Answer any FIVE questions. **5X6=30**

11 Write a short note on Microkernel.

12 Explain the Process Life cycle with a neat diagram.

13 Write short note on multilevel feedback queue with their parameters.

14 Explain Peterson's solution to critical section problem.

15 Differentiate Atomic Transactions from Interleaved Transactions with appropriate examples.

16 Consider the following snapshot of the system.

	Allocation	Max	Available
	A B C D	*A B C D*	*A B C D*
P_0	0 0 1 2	0 0 1 2	1 5 2 0
P_1	1 0 0 0	1 7 5 0	
P_2	1 3 5 4	2 3 5 6	
P_3	0 6 3 2	0 6 5 2	
P_4	0 0 1 4	0 6 5 6	

Using Banker's algorithm, determine if the system is in safe state. Explain your answer.

17 On a system with paging, a process cannot access memory that it does not own; Explain why and how this is implemented.

SECTION C

Answer any FIVE questions. **5X10=50**

18 Explain the different components of OS.

19 Explain FCFS CPU Scheduling algorithm with appropriate process examples. State its advantages and disadvantages.

20 Compare the average waiting time, response time and turn around times using Preemptive and non preemptive SJF for the following data:

Process	P1	P2	P3	P4	P5
Arrival	0	1	2	3	4
CPU Burst	17	16	13	11	12

21 Explain how Semaphores are useful in Process Synchronization.

22 Explain Bankers algorithm for deadlock avoidance with an example.

23 Calculate the number of page faults using First In First Out page replacement algorithm for the given reference string. Assume the number of frames as 3

1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5

24 Explain the different file allocation methods with appropriate diagrams.