Register Number: ……..

MCA DEGREE EXAMINATIONS: MAY/JUNE 2014

(Regulation 2013)

Second Semester

MASTER OF COMPUTER APPLICATIONS

P13CAT204**:** Operating Systems

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 10 Marks)

1. Mention the purpose of an operating system.
2. Define time sharing system.
3. Represent the state diagram of process.
4. Distinguish between short term and long term scheduler.
5. How will you obtain the solution for critical section problem?
6. State the four necessary conditions for deadlock.
7. What is belady's anomaly?
8. Name the three strategies to solve dynamic storage allocation problem.
9. Compare constant angular velocity with linear velocity in disk structure.
10. List the operations performed in a file.

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

Q.No:11 is Compulsory

11. (i) Analyze the different types of operating system and its features in detail. (8)

    (ii) Discuss the design principles of the Linux system. (8)

12. Briefly describe the major categories and functions of system call with example.

13. Consider the following set of processes, with the length of the CPU burst given in milliseconds:

Process	Burst Time	Priority
P1	8	3
P2	3	1
P3	2	3
P4	1	4
P5	5	2

The processes are arrived in FIFO order at time 0.

1. Draw the Gantt charts that illustrates the execution of these processed using the FIFO, SJF, Priority and RR(Time Slice = 2)
2. What is the turnaround and waiting time of each process for each scheduling algorithm?
3. Which algorithm results in minimum average waiting time?

14. Illustrate the dining philosopher problem and its solution with suitable example.

15. How many page faults occur for the following reference string, with three and four page frames using FIFO, OPT and LRU algorithm.

    7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

16. Write short notes on the following:

    (i) File sharing (8)

    (ii) Allocation methods (8)

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