A seek takes 6 m sec per cylinder moved. How much seek time is needed for

i) FCFS

ii) SCAN

iii) SSTF

OR

What are the essential goals of disk scheduling? Why does SCAN have a lower variance of response times than SSTF?

Unit - V

5. a) What are Threads? Explain.

   b) What is distributed system?

   c) Discuss processor allocation in distributed system.

   d) Discuss about WINDOWS operating system in detail.

OR

Discuss various performance evaluation techniques in distributed system.

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Roll No .....

MCA-201

MCA. II Semester

Examination, December 2016

Operating System

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) What are the main functions of operating system?

   b) Differentiate between multitasking and multiprogramming.

   c) What are monolithic systems?

   d) What is multilevel feedback scheduling? What advantages is there is having different quantum sizes on different levels of multilevel queuing system?

OR

For the following Job, calculate average turn around time, waiting time and response time using

i) Round Robin (time quantum =1)

ii) FCFS

iii) SRTN

The jobs are assumed to have arrived in the order A,B,C,D,E at almost the same time low number in priority is the process with highest priority and Jobs are processed on single processor.

Job	Burst time	Priority
A	10	3
B	1	1
C	2	3
D	1	4
E	5	2

Unit - II

2. a) What is memory management?
   b) Explain paging.
   c) Differentiate between logical and physical address.
   d) Consider the following reference string

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

   For a memory of three frames. How many page faults would occur for the following page replacement algorithms.

   i) FIFO
   ii) Optimal

OR

What are overlays and how they are used?

Unit - III

3. a) Explain the concept of mutual exclusion.
   b) What are semaphores?

   c) What is resource allocation graph?
   d) Consider the following systems at a particular instant.

	Allocation	Max	Available
P_0	0012	0012	1520
P_1	1000	1750	
P_2	1354	2356	
P_3	0632	0652	
P_4	0014	0656	

Using bankers algorithm answer the following

i) Is the system in a safe state.

ii) If a request from process P_1 arrives for (0420), can the request be immediately granted.

OR

Discuss any one classical problem in concurrent programming in detail.

Unit - IV

4. a) What are device controllers?
   b) Explain File system Implementation in brief.
   c) What are the primary functions of clock software?
   d) Suppose a head of a moving head disk with 200 tracks numbered 0 to 199, is currently serving a request at track 143 and has just finished a request at track 125, If the queue of requests is kept in FIFO order.

   86, 147, 91, 177, 94, 150, 102