

23

CSE/IT

## JAYA GROUP OF INSTITUTIONS - THIRUNINRAVUR

4<sup>th</sup> SEM – B.E. / B.Tech.

## INTERNAL ASSESSMENT – II (MODEL EXAMINATION – II)

Sub. Title : CS6401  
Sub. Code : Operating Systems  
Duration : 180 minutes

Date : 09.02.2015  
Branch : IT | CSE  
Max. Marks : 100

PART – A ( $10 * 2 = 20$ ) Answer all questions

1. What is swapping?
2. Define fragmentation and its types?
3. What is Belady's anomaly?
4. When do page faults occur?
5. Define effective access time.
6. List some of the file attributes.
7. Define seek time and latency time.
8. What is sector sparing?
9. Define polling.
10. List out the file allocation methods..

PART – B ( $5 * 16 = 80$ ) Answer all the Questions as per the Choice

11.(a).(i) Describe paging with necessary diagrams. (8)

(ii) Explain some of the most common techniques for structuring the page table. (8)

Or

11.(b) (i) Explain in detail about allocating kernel memory. (8)

(ii) Define thrashing. Write brief note on causes of thrashing. (8)

12(a) (i) Consider the following page reference reference string:

1,2,7,8,3,4,2,1,4,2,5,6

Calculate the number of page faults would occur for the following page replacement algorithm with frame size of 3 and 5.

i.LRU ii.FIFO iii.Optimal (16)

Or

12.(b) (i) Given memory partitions of 100 kB,500 kB,200 kB,300 kB and 600 kB(in order) how would each of the first fit ,best fit and worst fit algorithms place processes of 212 kB,417 kB,112 kB and 426 kB(in order)? Which algorithm makes the most efficient use of memory?

(8)

(ii) Explain in detail about Contiguous Memory Allocation.

(8)

13(a) (i) Explain in detail about demand paging with neat diagrams.

(8)

(ii) Explain the principles of segmentation with examples.

(8)

Or

13.(b) (i) Explain in detail about file allocation methods.

(10)

(ii) Explain in detail about free space management.

(6)

14. (a) Discuss in detail about directory structure with neat diagrams.

(16)

Or

14.(b) (i) Explain briefly about I/O hardware.

(8)

(ii).Explain in detail about Disk management.

(8)

15.(a) Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143 and the previous request was at cylinder 125. The queue of pending request is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130. What is the total distance (in cylinders) to satisfy these requests using the following disk-scheduling algorithms?

(16)

(i) FCFS

(ii)SSTF

(iii)SCAN,C-SCAN

(iv) LOOK ,C-LOOK

Or

15. (b) (i) Describe briefly about Kernel I/O subsystem.

(10)

(ii)What are the various file operations? Explain in detail.

(6)