VISHNU INSTITUTE OF TECHNOLOGY (AUTONOMOUS)

Mid – II Examinations

**Operating Systems (AI&DS)**

**M-II QUESTION BANK**

**Unit-3**

1. Illustrate the conditions under which a deadlock situation may arise with an example?

L2 [CO3] [6M]

2. Explain about semaphores with an example? L2 [CO3] [6M]

3. Illustrate about the producer consumer problem with an example. L2 [CO3] [6M]

4.Explain readers-writers problem with an example. L2 [CO3] [6M]

5. Explain Dining Philosophers’ problem L2 [CO3] [6M]

6. Explain the conditions to meet occurrence of deadlock L2 [CO3] [6M]

7. Explain how to recover from a deadlock. L2 [CO3] [6M]

8. Explain resource allocation graph and wait-for graph with an example.

L2 [CO3] [6M]

9. Consider a system with five processes P0 through P2 and three resources of type A, B, C. Resource type A has 8 instances, B has 5 instances and type C has 4 instances. Suppose at time t0 following snapshot of the system has

been taken: L1 [CO1] [6M]

| Process | Allocation | | | Max | | | Available | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A | B | C | A | B | C | A | B | C |
| P0 | 0 | 2 | 0 | 3 | 2 | 1 | 3 | 3 | 2 |
| P1 | 2 | 0 | 0 | 3 | 2 | 2 |
| P2 | 3 | 0 | 2 | 5 | 0 | 2 |

Find Safe Sequence.

**Unit-4**

1. Explain the following

(i) paging technique

(ii) Segmentation L2 [CO4] [12M]

1. a)What is demand paging and virtual memory? Explain how virtual memory is implemented using demand paging. What are its specific advantages?

L1 [CO4] [6M]

b)Define the terms

i) Page Fault

ii) Internal Fragmentation

iii) External Fragmentation L1 [CO4] [6M]

1. Illustrate the following page replacement algorithm.

Reference string 7,0,1,2,0,3,0,4,2,3,0,3,2,3

Frame size=4

a) Optimal page replacement b) Least recently used page replacement,explain their advantages L2 [CO4] [12M]

1. What is meant by thrashing? Illustrate the following page replacement algorithm.

Reference string 7,0,1,2,0,3,0,4,2,3,0,3,2,3 L2 [CO4] [12M]

Frame size=4

a) FIFO page replacement b) Least recently used page replacement

1. Illustrate the following page replacement algorithm.

Reference string 7,0,1,2,0,3,0,4,2,3,0,3,2,3

Frame size=4

a)FIFO page replacement b) Least frequently used page replacement and explain FIFO drawbacks. L2 [CO4] [12M]

6. Explain contiguous memory allocation techniques with example. L2 [CO4] [12M]

7. Explain non-contiguous memory allocation techniques with example. L2 [CO4][12M]

8.(a) Define the terms

i) Swapping technique.

ii)Thrashing

iii) Page Fault L1 [CO4] [6M]

(b) Explain dynamic storage allocation techniques. L2 [CO4] [6M]

9. Explain types of page table structures. L2 [CO4][12M]

10. Explain paging with TLB and define protection bits in paging L2[CO4][12M]

**Unit-5**

1. a) Explain various file access methods with an example? L2[CO5][6M]

b) Illustrate file system mounting. L2[CO5][6M]

| 1. Explain file system architecture and file system implementation.L2[CO5][12M] 2. Explain file system architecture and Directory implementation. L2[CO5][12M] 3. Explain file allocation methods with an example. L2[CO5][12M] 4. Describe types of free space management techniques. L2[CO5][12M] 5. What is the role of disk scheduling and illustrate FIFO and SSTF disk scheduling algorithm with example. L2[CO5][12M] 6. What is the role of disk scheduling and illustrate FIFO and SCAN disk scheduling algorithm with example. L2[CO5][12M] 7. What is the role of disk scheduling and illustrate SSTF and SCAN disk scheduling algorithm with example. L2[CO5][12M] 8. Explain types of directory structures and its advantages and disadvantages.   L2[CO5][12M]   1. What is the role of disk scheduling and illustrate C-SCAN and C-LOOK disk scheduling algorithm with example. L2[CO5][12M] |  |
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