

[35  
A42]

Bill

SC

**SARDAR PATEL UNIVERSITY**  
**MSc IT (Integrated) (CBCS) Semester - 4**  
**Friday, Date: 1<sup>st</sup> April, 2016**

**Session: Morning Time : 10:30 A.M. to 1:30 P.M.**

**Course Code: PS04CIT01**

**Course Title : Operating Systems – II**

**Total Marks: 70**

**Q1. Multiple Choice Questions**

**[10]**

1. The memory storage broken in number of small holes is known as \_\_\_\_\_.  
A. Page  
B. Fragmentation  
C. Frames  
D. Segmentation
2. External fragmentation problem can be solved by \_\_\_\_\_.  
A. Virtual Memory  
B. Segmentation  
C. Demand Paging  
D. Compaction
3. Best fit and first fit strategies suffer from the problem of \_\_\_\_\_.  
A. Delay  
B. External Fragmentation  
C. Poor Performance  
D. Internal Fragmentation
4. \_\_\_\_\_ data structure is used to implement second chance algorithm.  
A. Circular Queue.  
B. Stack  
C. Array  
D. Linked List
5. \_\_\_\_\_ swaps page from memory only when needed.  
A. Pager  
B. Lazy swapper  
C. MMU  
D. Scheduler
6. Logical file system manages \_\_\_\_\_ information.  
A. FAT  
B. Device driver  
C. Metadata  
D. Boot
7. Set of operations for performing a specific task is known as \_\_\_\_\_.  
A. Code  
B. Transaction  
C. Program  
D. All of these
8. Partition containing no file system is known as \_\_\_\_\_ disk.  
A. Vnode  
B. Boot loader  
C. Mount  
D. Raw
9. \_\_\_\_\_ connects slow devices to the PCI Bus.  
A. DMA  
B. Controller  
C. Expansion bus  
D. PCI Express
10. Device connects with computer via \_\_\_\_\_.  
A. Ports  
B. Cache  
C. Register  
D. Bus

- Q2. Answer the following short questions (Attempt any TEN) [20]**
1. Differentiate between : Static linking and Dynamic linking?
  2. What is Cache memory ?
  3. What is stub ?
  4. What is virtual memory ? State its advantage.
  5. What is virtual address space ? Draw diagram for the same.
  6. List all page replacement algorithms.
  7. Draw diagram of typical FCB.
  8. List different allocation methods.
  9. What is hash table? State its disadvantage.
  10. Define : Bus
  11. What is the job of interrupt handler?
  12. List basic functions of hardware clocks and timers.
- Q3. What is fragmentation? Explain types of fragmentation in detail. [10]**
- OR**
- Q3. Explain paging model of memory management in detail. [10]**
- Q4.a. Explain FIFO Page replacement algorithm. [05]**  
**b. Write short note on virtual memory. [05]**
- OR**
- Q4.a. Explain steps involved in page fault with diagram. [05]**  
**b. Explain LRU page replacement algorithm. [05]**
- Q5.a. What is need of backup? Explain its types in detail [05]**  
**b. Write short note on Directory implementation. [05]**
- OR**
- Q5.a. Explain linked allocation method in detail. [05]**  
**b. State problems with consistency - checking approach? Also state solution for the same. [05]**
- Q6. a. Explain the concept of interrupts. [06]**  
**b. Explain in detail Direct memory access with steps of DMA transfer. [04]**
- OR**
- Q6. a. Explain the concept of I/O hardware. [06]**  
**b. Explain different types of devices according to its characteristics. [04]**