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SARDAR PATEL UNIVERSITY
MSc. IT (Integrated) Examination, 4th Semester (CBCS)
Thursday, Date: 23rd April, 2015
Session : Morning Time : 10:30 A.M. to 01:30 P.M.

Course Code: PS04CIIT01
Course Title : Operating Systems - II **Total Marks: 70**

Q1. Multiple Choice Questions. **[10]**

1. Physical memory is broken into fixed sized blocks known as _____.
   a. Pages b. Frames
   c. Segments d. Holes

2. Page size is typically in power of _____.
   a. 2 b. 4
   c. 6 d. 8

3. _____ is a memory buffer used to accommodate a speed differential.
   a. RAM b. Bus
   c. Cache d. Stub

4. _____ algorithm never suffers from Belady's anomaly but cannot be implemented practically.
   a. LRU b. Second Chance
   c. Optimal d. FIFO

5. _____ swaps page only when needed.
   a. Pager b. MMU
   c. Scheduler d. Lazy swapper

6. _____ allocation methods suffer from problem of segmentation.
   a. Contiguous b. Linked
   c. Indexed d. None of the above

7. Information between the main memory and the disk is transferred using _____and interrupt handlers.
   a. Bus b. Device drivers
   c. Controller d. Port

8. I/O transfers between memory and disk are performed in units of _____.
   a. Bytes b. Bits
   c. Segments d. Blocks

9. _____ decouples the producer of data from the consumer.
   a. Buffering b. Triple Buffering
   c. Double Buffering d. None of these

10. _____ connects slow devices to the PCI Bus.
    a. SCSI Controller b. Disk controller
    c. PCI Express d. Expansion bus

Q2. Answer the following short questions (Attempt any TEN) **[20]**

1. State different types of binding along with their sequence.
2. Give full form of MMU and draw figure for dynamic relocation using a relocation register.
3. What is a stub?
4. List implementation methods for LRU page replacement algorithm. Explain any one in brief.
5. List and explain different classes of enhanced second change algorithm.
6. State different page replacement algorithms.
7. List different allocation methods.
8. What is consistency checker ?
9. Draw diagram of typical FCB.
10. List categories of I/O hardware devices with examples.
11. State the type of wires used for performing handshaking in DMA.
12. State the function required for socket interface and its purpose.

Q3.a. Explain in detail paging model with diagram. **[6]**

b. Explain in brief types of address binding. **[4]**

OR

Q3.a. What is fragmentation? List its types and Explain any one type of fragmentation in detail. **[6]**

b. Write short note on segmentation. **[4]**

Q4.a. Explain FIFO page replacement algorithm. **[6]**

b. Explain steps involved in a page fault with diagram. **[4]**

OR

Q4.a. Explain Optimal page replacement algorithm. **[6]**

b. Explain in brief concept of virtual memory. **[4]**

Q5.a. Explain indexed allocation method in detail. **[6]**

b. What is the need of backup ? Explain its types in brief. **[4]**

OR

Q5.a. Explain linked allocation method in detail. **[6]**

b. What is a log file? State benefits of using log files. **[4]**

Q6. Explain in detail : Interrupt **[10]**

OR

Q6. Explain in detail kernel I/O subsystem. **[10]**

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