Sixth Semester B.E. Degree Examination, June/July 2014

Operating Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Explain the goals of an operating system.   (06 Marks)
    b. Explain the designer's view of operating system.   (04 Marks)
    c. Explain modes of performing I/O operations.   (05 Marks)
    d. Explain the benefits/features of distributed operating system.   (05 Marks)

2   a. Explain the functions of an operating system.   (05 Marks)
    b. Explain the layered design of operating system.   (08 Marks)
    c. Explain the concept of VMOS with example.   (07 Marks)

3   a. Explain the contents of process control block.   (06 Marks)
    b. List the different types of process interaction and explain them in brief.   (06 Marks)
    c. Explain with a neat diagram, the different states of process in UNIX operating system.
                                                                           (08 Marks)

4   a. Describe static and dynamic memory allocation.   (04 Marks)
    b. Compare the contiguous and non-contiguous memory allocation.   (04 Marks)
    c. What is boundary tag? Explain merging of free areas using boundary tags?   (08 Marks)
    d. Explain the lazy buddy allocator.   (04 Marks)

PART – B

5   a. Explain the important concepts in the operation of demand paging.   (12 Marks)
    b. Find the number of page faults for following page reference string, using the FIFO and LRU
       page replacement policies.
       Reference string: 5, 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5. (Assume page frames = 3)   (08 Marks)

6   a. Describe the different operations performed on files.   (08 Marks)
    b. Explain the organization of sequential access and direct access files.   (08 Marks)
    c. Describe file system actions during a file operation.   (04 Marks)

7   a. Compute mean turn around time and mean weighted turn around time for following set of
       processes, using FCFS and SRN scheduling.   (10 Marks)

Processes	P_1	P_2	P_3	P_4	P_5
Arrival time	0	2	3	5	8
Service time	3	3	2	5	3

    b. Explain the process schedule with a neat schematic diagram.   (05 Marks)
    c. Summarize the approaches to real time scheduling.   (05 Marks)

8   a. Explain Buffering of interprocess messages.   (06 Marks)
    b. Describe the delivery of interprocess messages.   (06 Marks)
    c. Write a short note on mailbox.   (08 Marks)

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