Sixth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Operating Systems

Time: 3 hrs. Max. Marks:100

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

PART – A

1   a. Explain operations and task performed by operating system. (06 Marks)
    b. Explain with diagram resource allocations methods. (06 Marks)
    c. List the classes of operating systems and explain time sharing operating system with diagram. (08 Marks)

2   a. Explain real time operating system with examples of real time applications (06 Marks)
    b. Explain with diagram Microkernel based operating system (08 Marks)
    c. Explain structure of a supervisor. (06 Marks)

3   a. Describe the component of process environment. (06 Marks)
    b. Explain with diagram kernel level thread implementation. (06 Marks)
    c. Explain fundamental state transition diagram for a process with process control block. (08 Marks)

4   a. Explain contiguous and non contiguous memory allocation. (06 Marks)
    b. Explain first fit and best fit techniques with examples. (08 Marks)
    c. Explain memory compaction and memory fragmentation. (06 Marks)

PART – B

5   a. Find the number of page fault for following page reference string using FIFO and LRU page replacement policies. Assume there are three page frames for allocation and first three pages accounts for page fault.
        Reference string : 5, 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5. (08 Marks)
    b. Explain with diagram demand paging. (08 Marks)
    c. Explain page sharing. (04 Marks)

6   a. Explain facilities provided by file system and IOCS layers. (08 Marks)
    b. Describe operations performed on files. (06 Marks)
    c. Write note on UNIX file system. (06 Marks)

7   a. Explain with block diagram event handling and scheduling. (08 Marks)
    b. Describe mechanism and policy modules of process scheduler. (06 Marks)
    c. Consider four processes P1, P2, P3, and P4 with burst time 3m sec, 6m sec, 4m sec and 2m sec enters scheduler in order P1, P2, P3, P4. Calculate waiting time, average waiting time, turnaround time and average turnaround time using FCFS scheduling method. assume all process arrive at '0' m sec. (06 Marks)

8   a. Explain direct and indirect naming. (06 Marks)
    b. Explain with diagram inter-process message control box. (06 Marks)
    c. Explain mail box and its applications. (08 Marks)

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