USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]   **15EC553**

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

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing*
ONE full question from each module.

Module-1

1   a.   Define operating system. Explain the key concerns of an operating system.   **(10 Marks)**
    b.   Explain the different computational structures of operating system.   **(06 Marks)**

OR

2   a.   Explain different classes of operating system.   **(10 Marks)**
    b.   Explain various resource allocation strategies.   **(06 Marks)**

Module-2

3   a.   Define process, process states and transition with suitable algorithm.   **(08 Marks)**
    b.   Explain Process Control Block.   **(08 Marks)**

OR

4   a.   For a given set of process FCFS and SRN scheduling compare their performance in terms of mean turnaround time and weighted turnaround time.   **(10 Marks)**

Process	P_1	P_2	P_3	P_4	P_5
Admission time	0	2	3	5	9
Service time	3	3	2	5	3

    b.   Explain long-term and short term scheduling.   **(06 Marks)**

Module-3

5   a.   Compare contiguous and non-contiguous memory allocation techniques.   **(08 Marks)**
    b.   Write a short note on :   i) paging   ii) segmentation.   **(08 Marks)**

OR

6   a.   Explain demand paging preliminaries.   **(10 Marks)**
    b.   Write short note on :
         i)   First–In–First–Out (FIFO) page replacement policy.   **(03 Marks)**
         ii) Least Recently Used (LRU) page replacement policy.   **(03 Marks)**

Module-4

7   a.   Explain file system and IOCS.   **(08 Marks)**
    b.   Explain fundamental file organizations.   **(08 Marks)**

OR

8   a.   Explain directory structures.   **(08 Marks)**
    b.   Explain file system action at a file operation.   **(08 Marks)**

Module-5

9   a.   Define message passing. Explain how to implement the message passing.   **(08 Marks)**
    b.   Explain mail boxes and message passing in unix.   **(08 Marks)**

OR

10 a.   Define deadlock. Explain deadlock in resource allocation.   **(08 Marks)**
    b.   Explain deadlock detection algorithm.   **(08 Marks)**

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