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Second Semester MCA Degree Examination, June/July 2018
Operating Systems

Time: 3 hrs.   Max. Marks: 80

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

Module-1

1 a. What is operating system? Explain with a neat diagram the components of computer systems. **(08 Marks)**
   b. Explain layered approach with diagram. **(08 Marks)**

OR

2 a. Explain different types of system call. **(08 Marks)**
   b. Explain different types of service provided by the operating systems. **(08 Marks)**

Module-2

3 a. Explain process states with a diagram. **(08 Marks)**
   b. Consider the following set of process that arrive at time zero.   I) FCFS   II) SJF.

I)

Process	Burst time
P$_1$	24
P$_2$	3
P$_3$	3

II)

Process	Burst Time
P$_1$	6
P$_2$	8
P$_3$	7
P$_4$	3

Draw the Gantt chart and find (i) waiting time of each process (ii) average waiting time. **(08 Marks)**

OR

4 a. Explain monitors with diagram. **(08 Marks)**
   b. With diagram, explain different types of multithreading models. **(08 Marks)**

Module-3

5 a. Explain with diagram dining philosophers problem. **(08 Marks)**
   b. Explain with diagram the concept of swapping. **(08 Marks)**

OR

6 a. Explain Translation LookASide Buffer (TLB) with diagram. **(08 Marks)**
   b. Solve page replacement algorithms using FIFO(3 frames)
      7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1. **(08 Marks)**

Module-4

7 a. Explain different types of file attributes.   (08 Marks)
   b. With a diagram, explain single–level directory.   (08 Marks)

OR

8 a. Explain with a diagram, indexed allocation.   (08 Marks)
   b. Explain different types of file types.   (08 Marks)

Module-5

9 a. Explain with a diagram components of a Linux system.   (08 Marks)
   b. Explain different types of process management in Linux operating systems.   (08 Marks)

OR

10 a. Explain inter-process communications in Linux operating systems.   (08 Marks)
   b. With a diagram, explain memory management in Linux operating systems.   (08 Marks)

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