CBCS Scheme

USN | | | | | | | | | |

16MCA24

Second Semester MCA Degree Examination, Dec.2017/Jan.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. Explain with a neat diagram memory hierarchy. **(08 Marks)**

b. Write short notes on:
i) Distributed systems
ii) Clustered systems **(08 Marks)**

OR

2 a. Explain different types of system programs. **(08 Marks)**

b. Write short notes on:
i) Layered system
ii) Virtual machines **(08 Marks)**

Module-2

3 a. With a neat diagram, explain process states. **(08 Marks)**

b. Explain with a neat diagram multithreading models. **(08 Marks)**

OR

4 a. Solve the following set of processes that arrive at time 0, with the length of Cpo-Burst time given in milliseconds. **(08 Marks)**
FCFS (draw Gant chart and find AWT)

Process	Burst Time
P_1	24
P_2	3
P_3	3

b. Explain solution of Readers-Writers problem. **(08 Marks)**

Module-3

5 a. With a neat diagram, explain Resource Allocation Graph. **(08 Marks)**

b. What is Deadlock? Explain the necessary conditions for its occurrence. **(08 Marks)**

OR

6 a. Explain with a help of supporting diagram TLB improves the performance of demand paging. **(08 Marks)**

b. How many page faults occur for the following algorithms using a given memory string?
FIFO: 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 the following terms briefly:
i) File attributes,
ii) File types. **(08 Marks)**

b. Explain with a neat diagram Tree Structure Directory. **(08 Marks)**

OR

8 a. Explain contiguous allocation in file allocation methods. **(08 Marks)**

b. Explain the following with respect to free space management:

i) Bit vector

ii) Grouping. **(08 Marks)**

Module-5

9 a. Explain components of Linux operating system. **(08 Marks)**

b. Discuss on process management in Linux OS. **(08 Marks)**

OR

10 a. Discuss on main memory management in Linux OS. **(08 Marks)**

b. Explain components of Linux virtual file system. **(08 Marks)**

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