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Roll No

CS-5002 (CBGS)**B.E. V Semester**

Examination, November 2018

Choice Based Grading System (CBGS)**Operating System***Time : Three Hours**Maximum Marks : 70***Note:** i) Attempt any five questions.

ii) Attempt each part of the question selected.

iii) All questions carry equal marks.

1. a) Write short notes on following types of operating system
 - i) Batch processing
 - ii) Time sharing
 - iii) Multiprogramming
 b) What do you mean by Buffering and Spooling?
2. a) Explain layered architecture of operating system with example.
 b) What are the various services provided by the operating system?
3. a) Draw the process state transition diagram and explain in detail.
 b) Explain preemptive and non-preemptive scheduling.
4. a) What do you mean by Semaphore? Explain its uses and its implementation.
 b) Explain mutual exclusion.

5. a) What is a File? Write different file attributes and operations?
 b) Considering an ordered disk queue with requests involving tracks 98, 183, 37, 22, 14, 124, 65 and 67. If the read/write head is initially at track 53. What is the total distance that the disk arm moves to satisfy all the pending request for C-SCAN?
6. a) Write a short note on Interrupt and Interrupt Service Routine.
 b) Draw and explain Kernel architecture of Unix OS.
7. a) What is Segmentation? Explain virtual to physical address mapping in a segmented system with the help of a diagram.
 b) What is Virtual memory? Explain the concept of demand paging.
8. a) Write a program to implement Remote Procedure Call (RPC).
 b) What do you mean by the term Concurrent Programming Security and Threat Protection?