

**CODE: 17CD05104**

M. Tech I Year I Semester Regular Examinations, February 2018

**ADVANCED OPERATING SYSTEMS  
(CSE)**

Time : 3 hours

Max Marks : 60

Answer all **five** units. (5 x 12 = 60 Marks)

**UNIT-I**

1. (a) List and explain the factors that motivate change and growth in an Operating system.
- (b) What is the role of MMU? With neat diagram explain the modes and context with which process can execute.

OR

2. (a) What is a magic number? What are the various tasks the exec system call performs?
- (b) With a neat flow diagram, explain how interrupts are handled on a machine.

**UNIT-II**

3. (a) What are lightweight processes? Explain.
- (b) What are the major sources of signals? Describe the facilities provided by the reliable signal implementation.

OR

4. (a) Explain with diagram the interrupt handling in Solaris.
- (b) List out the limitations of SVR3 process group framework.

**UNIT-III**

5. (a) Explain the functionality of callouts and alarms.
- (b) Explain the semaphore operations. Show how they are used to provide mutual exclusion.

OR

6. (a) Explain the lost wakeup problem with a neat diagram.
- (b) Show the implementation of Read-Write locks.

**UNIT-IV**

7. (a) Explain how files are organized in a directory tree.
- (b) Write a brief note on s5fs.

OR

8. (a) What are file descriptors? Explain in detail.
- (b) List out the advantages and disadvantages of buffer cache.

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**UNIT-V**

9. (a) What are the decisions to be made while designing a logging file system?  
(b) Explain the watchdog operation in detail.

OR

10. (a) Illustrate the operation of writing a file in BSD LFS.  
(b) Explain the SunSoft prototype in brief with necessary diagram.

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