

Total No. of Questions : 8]

SEAT No. :

**P3796**

[Total No. of Pages : 2

**[4960] - 1314**

**M.E. (Computer Engineering)**  
**ADVANCED UNIX PROGRAMMING**  
**(2013 Pattern) (Semester-III)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates:*

- 1) Attempt ANY FIVE questions out of 8 Questions.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to the right indicate full marks.*
- 4) Use of calculator is allowed.*
- 5) Assume suitable data, if necessary.*

**Q1)** a) What is the purpose of grep command? Explain the various options available with the grep command with an example. [4]

b) Define file. Explain in detail about the various files. [4]

c) Explain the concept of journaling in ext4 file system? [2]

**Q2)** a) Explain the various features of IA-64 architectures in brief. [5]

b) What are the phases in signaling process? Explain what is meant by the lifetime of a signal. [5]

**Q3)** a) What is meant by process termination? Explain the various types of process terminations with a suitable example. [5]

b) Explain Record locking in Unix using fcntl( ). [3]

c) Explain the working of kill and raise functions. [2]

**P.T.O.**

- Q4)** a) Write a note on file locking versus Record Locking. [4]  
 b) What do you mean by 'slow system call'? What action is expected to overcome the effect of system call? [4]  
 c) Explain Copy On Write(COW) concept in UNIX. [2]
- Q5)** a) Explain the client-server communication using FIFO in Unix with a suitable diagram. [6]  
 b) With an example, explain in detail about the process of reading and writing a message from the message queue. [4]
- Q6)** a) What is a semaphore? Explain how to synchronize processes using semaphores. [4]  
 b) Explain in detail SHM\_LOCK and SHM\_UNLOCK in Shared memory IPC. [4]  
 c) Explain the importance of unlink ( ) in case of FIFO. [2]
- Q7)** a) Compare the different designs of concurrent servers. [6]  
 b) How does synchronization take place in multithreading? [4]
- Q8)** a) Explain in detail IPv4 socket structure with a suitable diagram. [4]  
 b) Explain the role of various socket functions in client server communication. [4]  
 c) Write a short note on daytime server. [2]

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