[5355] - 229

M.E. (Computer Engineering)
ADVANCED UNIX PROGRAMMING
(2013 Credit Pattern) (Semester - III) (610102)

Time : 3 Hours]　　　　　　　　　　　　　　　　　　　　*[Max. Marks :50*

Instructions to the candidates:

　　1)　***Attempt ANY FIVE out of SEVEN questions.***

　　2)　***Neat diagrams must be drawn whenever necessary.***

　　3)　***Figures to the right indicate full marks.***

　　4)　***Assume suitable data if necessary.***

　　5)　***Use of Calculator is allowed.***

Q1) a)　Write a short note on Register Stack Engine (RSE). 　　**[5]**

　　 b)　Explain in brief architecture of the UNIX operating system. 　　**[5]**

Q2) a)　Write a short note on Process Identifiers. What is the purpose of following functions: getpid, getppid, getuid, geteuid. 　　**[5]**

　　 b)　Explain fork() function. Also describe how sharing of open files between parent and child is done after fork() function. 　　**[5]**

Q3) a)　Write a short note on Nonblocking I/O. Also, explain in brief two ways to specify nonblocking I/O for a given descriptor. 　　**[5]**

　　 b)　Write a short note on readn and writen functions. 　　**[5]**

Q4) a)　Write a short note on pipes. Also explain two limitations of pipes. 　　**[5]**

　　 b)　Explain popen and pclose functions in detail. 　　**[5]**

Q5) a) Explain in brief Prethreading and Prethreading Models. **[5]**

b) Explain in brief Linux Locking Principles. **[5]**

Q6) a) Explain different types of sockets. **[5]**

b) Design of a simple client and server based echo server with out threading. **[5]**

Q7) Write short notes on any two of the following: **[10]**

a) Thread Synchronization.

b) Stack unwinding.

c) Virtual Memory Management.