Assignment No - 1

Q-1 Justify the Following, Processing can exercise crude control of their scheduling priority by using nice() System call function.

→ The Kernal implements a fair-share scheduling algorithm that gives process a share of CPU time based on priorities assigned to them, depending on the nature of the task. Higher priority process get scheduled more often and receive more CPU time but the process can exercise crude control of its scheduling by using the System call nice() as follow:
process priority is the function of this nice value.
process priority - Recent CPU usage a constant it. base priority + nice value.
this algorithm gives algorithm group A twice the slot of group B, their name times that of C and four times that of D, where user processes are group by priority.

Q-2 Justify the Following processes and process.

→ True
The PID 0 is reserved foe the Swapper process and 1 for the init process.
the startup function for the kernal establisities memory management, detects the type of CPU and only additional

functionality such as floating point capabilities and then switches to non architecture specific linux kernal functionality via call to start_kernal() init is the father of the process

Q-3 Justify the Following. At the kernal level support for protected process is two fold.

— True

At the kernal level support for protected process is two fold first, the bulk of process creation occurs in kernal mode to avoid injection attacks. Second ~~proction~~ protected process have special bit set in their EPROCESS struture that modifies the behaviour of security related routines in the process. manager to deny certain access rights that would normally be granted to administrates.

Q-4 Justify the following in linux the file is usually accessed via file names.

— The actually are not directly associated with such names. instead, a file is referenced by ~~assioeg~~ assigned on innate which is a unique numerical value. this value is called ~~Dum~~ inode number or ino

9.5 Explain the behaviour of following C Program

→
```
main()
{
int status;
if(fork() == 0)
e ("/bin/date", "date", 0);
wait(&status);
}
```

The fork system call in unix creates a new process. The new process inherits vaeious properties from its parent that is Environmental vaeiables. File destriptros After a succesful fork call, two copies of the original code will be running the return value of fork will be the process ID of the child in the New child process the return value of fork will be 0. when we type date on the unix Command line, the ~~com~~ command line interpreter i.e 2. shells are running.

9.6 write a C program to open a file in waite append mode the size of the file in n bytes At the (n+100)th byte the same file waite the string unix.

→

```
#include <stdio.h>
Void main()
{
    int fd;
    chae *buf = "UNIX";
    fd = open("File.c", 'a');

    if (fd == -1)
    perror("error");

    iseek (fd, 0, SEEK_ENO);

    iseek (fd, 100, SEEK_CUR);

    weite (fd, buf, 5);

    close (fd);

}
```