 Q1:   
S\_ISUID  (04000)  set-user-ID

S\_ISGID  (02000)  set-group-ID

S\_ISVTX  (01000)  sticky bit

S\_IRUSR  (00400)  read by owner  
S\_IWUSR  (00200)  write by owner  
S\_IXUSR  (00100)  execute/search by owner

S\_IRGRP  (00040)  read by group  
S\_IWGRP  (00020)  write by group  
S\_IXGRP  (00010)  execute/search by group  
S\_IROTH  (00004)  read by others  
S\_IWOTH  (00002)  write by others  
S\_IXOTH  (00001)  execute/search by others

Q2:

#include <sys/types.h>

#include <sys/stat.h>

main()

{chmod("hello.c", S\_IRUSR|S\_IWUSR|S\_IXUSR|S\_IRGRP|S\_IWGRP|S\_IXGRP|S\_IROTH);}

Q3:

To get User ID

#include<sys/types.h>

#include<unistd.h>

uid\_t getuid(void);

To get Group ID

#include <unistd.h>

#include <sys/types.h>

gid\_t getgid(void);

Q4:

getuid(), getgid().

Q5: Examples for setting Hello.c to root

#include <stdio.h>

#include <unistd.h>

#include <sys/stat.h>

#include <sys/types.h>

main() {

char fn[]="Hello.c";

int file\_descriptor;

struct stat info;

if ((file\_descriptor = creat(fn, S\_IRWXU)) == -1)

perror("creat() error");

else {

close(file\_descriptor);

stat(fn, &info);

printf("original owner was %d and group was %d\n", info.st\_uid,

info.st\_gid);

if (chown(fn, root, 0) != 0)

perror("chown() error");

else {

stat(fn, &info);

printf("after chown(), owner is root and group is root\n",

info.st\_uid, info.st\_gid);

}

unlink(fn);

}

}