Name:

Enroll No.

Quiz CST-102 Time 25 min

1. [4 + 4] How many process ids will be printed by the following C programs? Show calculations.

(a)
```
int main(){int i;
for(i = 0; i < 5; i++)
   fork();
printf("%d\n", getpid());
}
```

(b)
```
int main(){int pid, i;
for(i = 0; i < 5; i++)
   if ((pid = fork()) == 0) break;
printf("%d\n", getpid());
}
```

2. [4 + 2] User A executes the following C program. The first message queue id printed by the program is 0. Write the output of the following C programs.

```
int main(){int msqid, i;
for(i = 0; i < 5; i++) {
  msqid = msgget(IPC_PRIVATE, 066 | IPC_CREAT);
  printf("msqid = %d\n", msqid);
  msgctl(msqid, IPC_RMID, 0);
}
exit(0);
}
```

User removes call to msgctl function compiles and executes the program again. What will be the output? Justify your answer.

3. [4 + 4] Write the output of the following C program. Justify your answer.

```
int main(){
   int i, ret_code;

   if (fork() == 0) abort();
   wait(&ret_code);
   printf("ret code %x\n", ret_code);
   if (fork() == 0) exit(7);
   wait(&ret_code);
   printf("ret_code %x\n", ret_code);
}
```

The signal number of the signal SIGABRT is 6.

4. [4] Complete the following C program by writing the code that should replace __X__, __Y__, __Z__, and __A__.

```
int main(){  int pipe1[2], pipe2[2];
  int childpid;

  pipe(pipe1);
  pipe(pipe2);

  if ((childpid = fork()) == 0) {
     close(__X__);
     close(__Y__);

  /* some code for reading from pipe1 and writing to pipe2  */

  exit(0);
  }
  close(__Z__);
  close(__A__);

   /* some code for reading from pipe2 and writing to pipe1 */
   exit(0);
}
```

5. [2] The signals that a process can't catch, block and ignore are _____ and _____.

6. [2] Consider the output of "ls -la" command on a linux machine. Explain the meaning of bold and underlined part of the output.

-rwsrwxr-x	4	manoj	manoj	16920	Sep 4 22:01	a.out
-rwSrw-rw-	1	manoj	manoj	644	Jul 19 10:25	prog2.c