10. Illustrate the concept of inter-process communication using message queue with a c program.

PROGRAM :

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
struct message {
long msg_type;
char msg_text[100];
};
int main() {
key_t key = ftok("msgqfile", 65);
int msgid = msgget(key, IPC_CREAT |0666);
if (msgid == -1) {
perror("msgget");
exit(EXIT_FAILURE);
}
struct message msg;
msg.msg_type = 1;
strcpy(msg.msg_text, "Hello, message queue!");
if (msgsnd(msgid, (void*)&msg, sizeof(msg.msg_text), IPC_NOWAIT) == -1) {
perror("msgsnd");
exit(EXIT_FAILURE);
}
printf("Producer: Data sent to message queue: %s\n", msg.msg_text);
if (msgrcv(msgid, (void*)&msg, sizeof(msg.msg_text), 1, 0) == -1) {
perror("msgrcv");
```

```
exit(EXIT_FAILURE);
}
printf("Consumer: Data received from message queue: %s\n",
msg.msg_text);
if (msgctl(msgid, IPC_RMID, NULL) ==-1) {
perror("msgctl");
exit(EXIT_FAILURE);
}
return 0;
}
```

OUTPUT :