```c
#include <stdio.h>
#include <pthread.h>
#include <semaphore.h>
#include <Windows.h>
#define BUFFER_SIZE 5
#define MAX_ITEMS 10
int buffer[BUFFER_SIZE] = {0};
sem_t empty, full;
int produced_items = 0, consumed_items = 0;

void* producer(void* arg){
    while(produced_items < MAX_ITEMS){
        sem_wait(&empty);
        for(int i=0;i<BUFFER_SIZE;i++){
            if(buffer[i]==0){
                buffer[i]=produced_items+1;
                printf("Produced: %d\n", buffer[i]);
                produced_items++;
                break;
            }
        }
        sem_post(&full);
        Sleep(100);
    }
    return NULL;
}
```

```c
void* consumer(void* arg){
    while(consumed_items < MAX_ITEMS){
        sem_wait(&full);
        for(int i=0;i<BUFFER_SIZE;i++){
            if(buffer[i]!=0){
                printf("Consumed: %d\n", buffer[i]);
                buffer[i]=0;
                consumed_items++;
                break;
            }
        }
        sem_post(&empty);
        Sleep(150);
    }
    return NULL;
}
int main(){
    pthread_t producer_thread, consumer_thread;
    sem_init(&empty,0,BUFFER_SIZE);
    sem_init(&full,0,0);
    pthread_create(&producer_thread,NULL,producer,NULL);
    pthread_create(&consumer_thread,NULL,consumer,NULL);
    pthread_join(producer_thread,NULL);
    pthread_join(consumer_thread,NULL);
    sem_destroy(&empty);
    sem_destroy(&full);
    return 0;
}
```

```
Produced: 1
Consumed: 1
Produced: 2
Consumed: 2
Produced: 3
Consumed: 3
Produced: 4
Produced: 5
Consumed: 4
Produced: 6
Consumed: 6
Produced: 7
Produced: 8
Consumed: 7
Produced: 9
Consumed: 9
Produced: 10
Consumed: 10
Consumed: 5
Consumed: 8

--------------------------------
Process exited after 12.67 seconds with return value 0
Press any key to continue . . .
```