Code:

```c
#include <stdio.h>
#include <stdlib.h>

int mutex=1;
int full=0;
int empty=5;
int x = 0;

void producer(){
   mutex--;
   full++;
   empty--;
   x++;
   printf("Producer produces item: %d\n", x);
   mutex++;
}

void consumer(){
   mutex--;
   full--;
   empty++;
   printf("Consumer consumes item: %d\n", x);
   x--;
   mutex++;
}

int main ( ) {
   printf("1.Press 1 for producer\n2.Press 2 for consume\n3.Press 3 for exit.\n");
   int i, n;
   #pragma omp critical
   for(i=1; i>=1; i++){
      printf("\nEnter your choice: ");
      scanf("%d", &n);
      switch (n)
      {
      case 1:
         if(mutex==1 && empty!=0) producer();
         else printf("Buffer is full\n");
         break;
      case 2:
         if(mutex==1 && full!=0) consumer();
         else printf("Buffer is empty\n");
         break;
      case 3:
         exit(0);
         break;
      default:
         printf("Invalid option selected\n");
         break;
      }
   }

   return 0;
}
```

Output:

@somesh4545 ➜ /workspaces/TE-Labs/OSL (main) $ g++ 4-a.c && ./a.out
1.Press 1 for producer
2.Press 2 for consume
3.Press 3 for exit.

Enter your choice: 2
Buffer is empty

Enter your choice: 1
Producer produces item: 1

Enter your choice: 1
Producer produces item: 2

Enter your choice: 2
Consumer consumes item: 2

Enter your choice: 1
Producer produces item: 2

Enter your choice: 1
Producer produces item: 3

Enter your choice: 1
Producer produces item: 4

Enter your choice: 1
Producer produces item: 5

Enter your choice: 1
Buffer is full

Enter your choice: 2
Consumer consumes item: 5

Enter your choice: 2
Consumer consumes item: 4

Enter your choice: 1
Producer produces item: 4