## Cycle-II

## Program 1

i. Write a program for error detecting code using CRC-CCITT (16-bits).

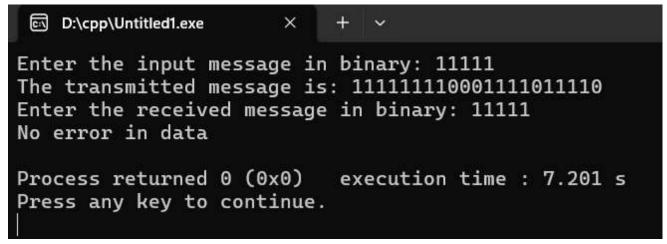
```
ii.
         Procedure
#include <stdio.h>
#include <string.h>
int crc(char *ip, char *op, char *poly, int mode) {
  strcpy(op, ip);
  if (mode) {
     for (int i = 1; i < strlen(poly); i++) {
       strcat(op, "0");
  // Perform XOR on the message with the selected polynomial
  for (int i = 0; i < strlen(ip); i++) {
     if (op[i] == '1') {
       for (int j = 0; j < strlen(poly); j++) {
          if (op[i + j] == poly[j])
             op[i + j] = '0';
          else
             op[i + j] = '1';
  // Check for errors. Return 0 if error detected
  for (int i = 0; i < strlen(op); i++) {
     if(op[i] == '1')
       return 0;
  return 1;
int main() {
  char ip[50], op[50], recv[50];
  char poly[] = "1000100000100001";
  printf("Enter the input message in binary: ");
  scanf("%s", ip);
```

```
crc(ip, op, poly, 1);
printf("The transmitted message is: %s%s\n", ip, op + strlen(ip));
printf("Enter the received message in binary: ");
scanf("%s", recv);

if (crc(recv, op, poly, 0)) {
    printf("No error in data\n");
} else {
    printf("Error in data transmission has occurred\n");
}
return 0;
}
iii. Screen shots/ output
```

```
Enter the input message in binary: 11111
The transmitted message is: 111111110001111011110
Enter the received message in binary: 1111
Error in data transmission has occurred

Process returned 0 (0x0) execution time: 7.354 s
Press any key to continue.
```



## iv. Observation

17.	Observation		- Bufna Gold-
· Alexandra			Cours seem 1
MA		-	
1	Tol-7	+	3
		+	3
. 6	White a program for Cover Detection being ORC - CETTY (16 5th)	-	return 1, // No poter
-	CON-CETTY (16 5tb)-	-	
	OR CONTRACTOR	-	nt main () (
	# wellow colder by	-	
	H include (Many h)	-	char poly 13 " Toco lococcel occol"; char poly 13 " Toco lococcel occol"; printly "Enter the input murge in binary")
			sould "Enter the input mesage in breaky"
	"int one (chan" ip a chan tops chan topy sint mode)		Stant ( 1/2 /19) . 11 Calculate the CPC and get the francewited meetings
	strong lossed 11 copy imput to output		1/ Calculate the CPC and got the francisted meetings
	Minode) C		CHCLIPI OPIPOLICO
	Adopped zones to the output		The transmitted massing is a record
	(ex (int i = 1) ix etilon (poly), i++) (		panil ( "The transmitted narrogs in (12/1/10p), print ( Enter the received merrogs in a narry. )
	for (int i=1; ix sty on (poly); i++) ( sheat (op. 1"0")	_	scort ("+5", Hear)
	7 5		If Check recoved near one for every of Cre (sure, of poly 15)
	The state of the s		A Coc Coco of told and a land
	1/ Payan XOR on the muses with the sheeted polynomial - for list; = 0 is < etalou lap); i++)(		
	1 (00 R) - = 1 120	161 -	printf l'Euros in data tramission has occured
	for lind 6 = 0, 1 < etnlay (poly) (++) (		3
	Japan Stall		seturn O',
	3 em ( ) - 10 )		3
			Output-
	opEi+33=1"	0	Porter the input manage in binary 11111
	1	183	The Inaunited musein 00000111 Gootino 1110
	3		Enter the received message in binoug. 1111
	3		Everyon in data transmission has occurred.
	/ Check for engans, Return of Journal Adul 1	63	C. V
	// Check for everous, Return O of everon addicted  for list 1=0; 1< etrles logs, 1+1) (  flog list = 1) (	(E)	Enter the input message in binary 11111
	1 (00 6) - 1) 6		The Prandmitted message + 0000011100011101110
	gulumo", Il Prinon datated		No own m data
			No work in data