CHAPTER: 12 RF Communication

PRACTICAL: 12A

AIM: To interface RF RX-TX module to rotate DC motor using Arduino.

ARDUINO CODE:

```
/**********************
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 **********************/

/* RF code */

#include <LiquidCrystal.h>
int up1 = 6;
int down1 = 7;
int left1 = 8;
int right1 = 9;
int forward1 = 10;
int reverse1 = 11;
LiquidCrystal lcd(13, 12, 5, 4, 3, 2);


// the setup routine runs once when you press reset:
void setup() {
        intiallization();
        Stop();
        lcd.begin(16, 2);
        lcd.print(" RF Sensor based ");
        lcd.setCursor(0,1);
        lcd.print("Industrial cran  ");
        delay(1000);
        lcd.clear();
        lcd.print("RF Sensor:    "); delay(10);
}


// the loop routine runs over and over again forever:
void loop() {
```

```
 if (Serial.available() > 0) // if there's any serial available, read it:
 {
  lcd.clear();
  switch(Serial.read())
   {
     case 'a' :  up();     lcd.print("MOTOR : UP      "); delay(10); break;
     case 'b' :  down();   lcd.print("MOTOR : DOWN    "); delay(10); break;
     case 'c' :  left();   lcd.print("MOTOR : LEFT    "); delay(10); break;
     case 'd' :  right();  lcd.print("MOTOR : RIGHT   "); delay(10); break;
     case 'e' :  forward();lcd.print("MOTOR : FORWARD "); delay(10); break;
     case 'f' :  reverse();lcd.print("MOTOR : REVERSE "); delay(10); break;
     default:    Stop();   lcd.print("MOTOR :      "); delay(10);

   }
 }
 else
 {
  lcd.clear();
  Stop();   lcd.print("MOTOR :         "); delay(10);
 }
}

void up()      { digitalWrite(up1, HIGH);       digitalWrite(down1, LOW);}
void down()    { digitalWrite(down1, HIGH);     digitalWrite(up1, LOW);}
void left()    { digitalWrite(left1, HIGH);     digitalWrite(right1, LOW);}
void right()   { digitalWrite(right1, HIGH);    digitalWrite(left1, LOW);}
void forward() { digitalWrite(forward1, HIGH);  digitalWrite(reverse1, LOW);}
void reverse() { digitalWrite(reverse1, HIGH);  digitalWrite(forward1, LOW);}

void Stop() {
digitalWrite(reverse1, LOW);
digitalWrite(forward1, LOW);
digitalWrite(left1, LOW);
digitalWrite(right1, LOW);
digitalWrite(up1, LOW);
digitalWrite(down1, LOW);
}




void intiallization()
{
```

```
    Serial.begin(9600);
    pinMode(up1, OUTPUT);
    pinMode(down1, OUTPUT);
    pinMode(left1, OUTPUT);
    pinMode(right1, OUTPUT);
    pinMode(forward1, OUTPUT);
    pinMode(reverse1, OUTPUT);
}
```

SIMULATION: