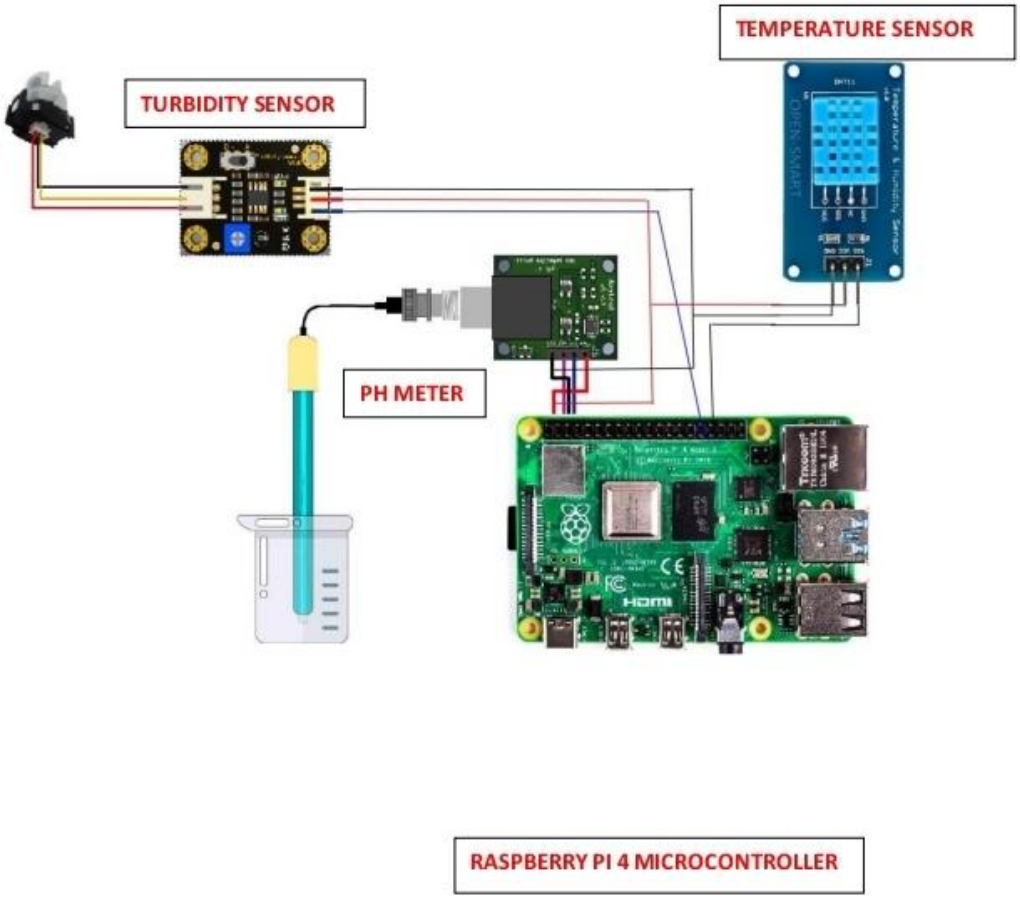
# CIRCUIT DIAGRAM



## PROGRAMMING

```
import ibmiotf.application
import ibmiotf.device
import time
 import random
import sys
from twilio.rest import Client
import keys
Client = Client(keys.account_sid, keys.auth_token)

organization =
"ks8pti"
deviceType =
"rasberrypi"
deviceId = "12345"
authMethod =
"token"
authToken = "12345678"


pH = random.randint(1,
14) turbidity =
random.randint(1, 1000)
temperature = random.randint(0, 100)


def myCommandCallback(cmd):
    print("Command Received: %s" % cmd.data['command'])
    print(cmd)


try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId,
    "auth-
method": authMethod,
```

```
                "auth-token": authToken}
    deviceCli =
    ibmiotf.device.Client(deviceOptions)


except Exception as e: print("caught exception
    connecting device: %s" % str(e)) sys.exit()


deviceCli.connect(

) while True:

    pH = random.randint(1,
    14) turbidity =
    random.randint(1, 1000)
    temperature =
    random.randint(0, 100)

    data = {'pH': pH, 'turbid': turbidity, 'temp':
    temperature} def SMS():

        message = Client.messages.create(

            body="ALERT!! THE WATER QUALITY IS DEGRADED",
            from_=keys.twilio_number,

            to = keys.target_number)
        print(message.body)

    if temperature>70 or pH<6 or
        turbidity>500: SMS()


    def myOnPublishCallback(): print("Published pH= %s" % pH,
        "Turbidity:%s" % turbidity, "Temperature:%s" %

temperature)



    success = deviceCli.publishEvent("demo", "json", data, qos=0,

on_publish=myOnPublish
    Callback) if not
    success:

        print("Not Connected to ibmiot")

    time.sleep(5)
deviceCli.commandCallback =
myCommandCallback
deviceCli.disconnect()
```