Aswan University

Electrical Department

First Year, 2nd Semester

Electrical Test 1

Faculty of Engineering

# Report on
# (24 hrs Digital Clock)

**Subject:**

**Electrical Test 3**

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**Presented to:**

**Eng. Abeer**

**Supervised by:**

**Dr. Mahmoud Ali Saber**

## 1) Draw the circuit diagram of 24 hrs digital clock.

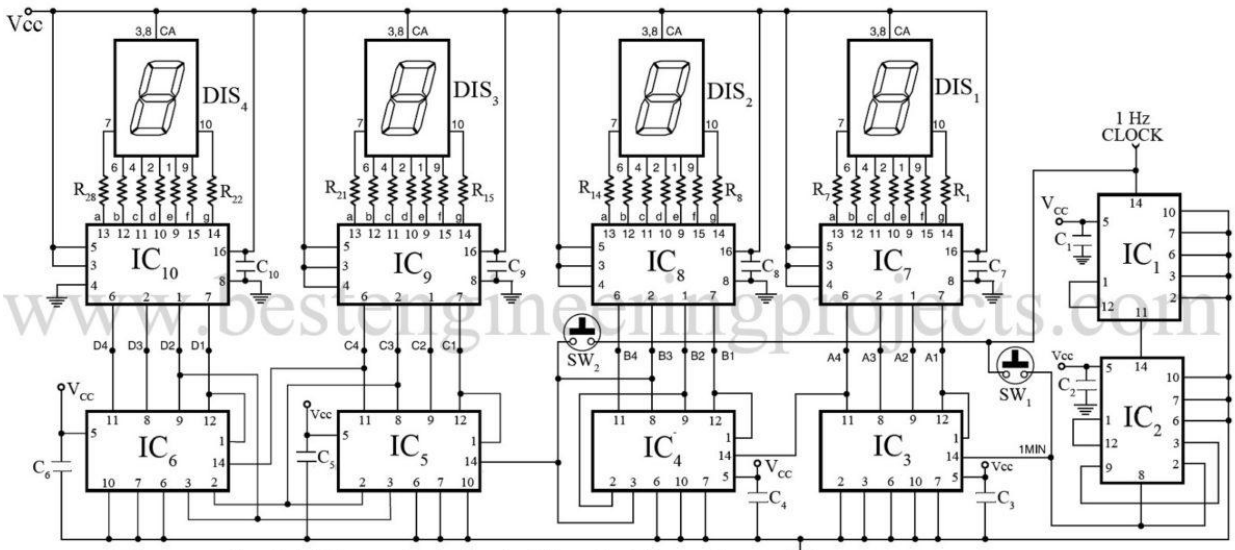


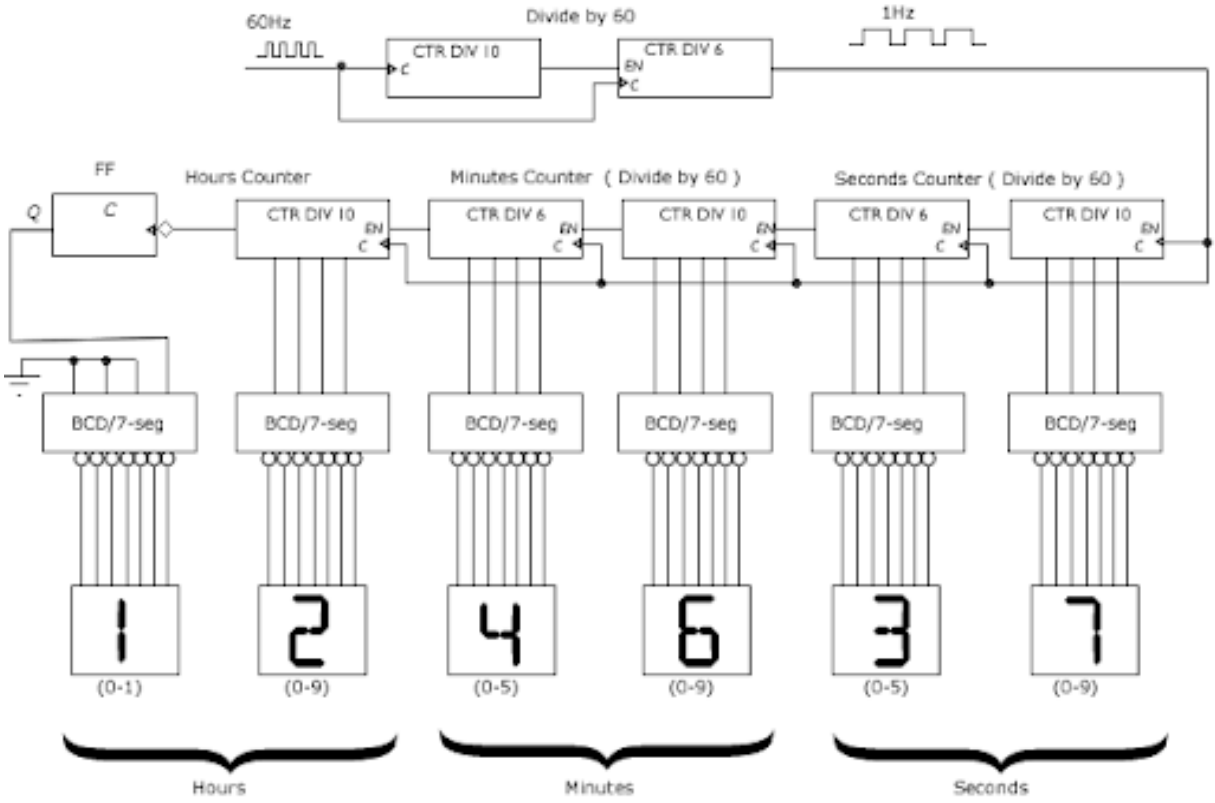



Figure 1: 24 Hour Digital Clock Circuit

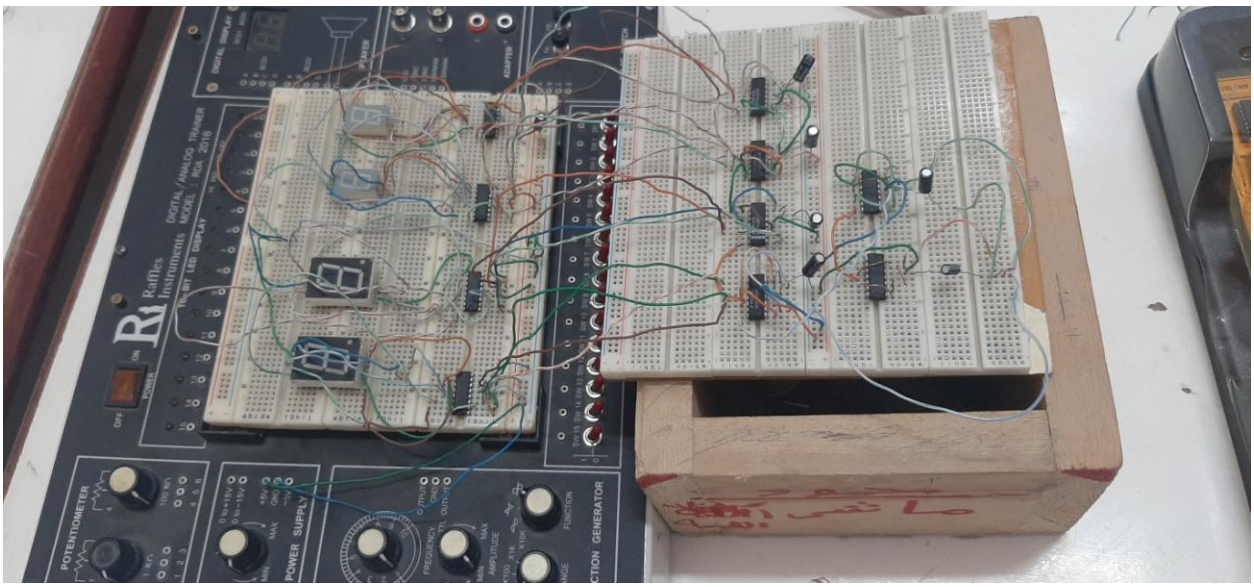
## 2) Explain the function of each component.

- **7-segment:** to display the clock on.
- **Resistors:** to decrease the voltage entering the 7-segment in order not to damage.
- **ICs(7-10):** BCD to decimal decoders
- **IC1:** serves as divide-by-10 counter
- **IC2:** serves as divide-by-6 counter
- **IC(3,4):** serves as divide-by-60 counter (which resets at 60 min)
- **IC5:** serves as divide-by-10 counter (which resets at 4 when IC6 reaches 2)
- **IC6:** serves as divide-by-3 counter
- **Capacitors:** to decrease the noise of the signal.

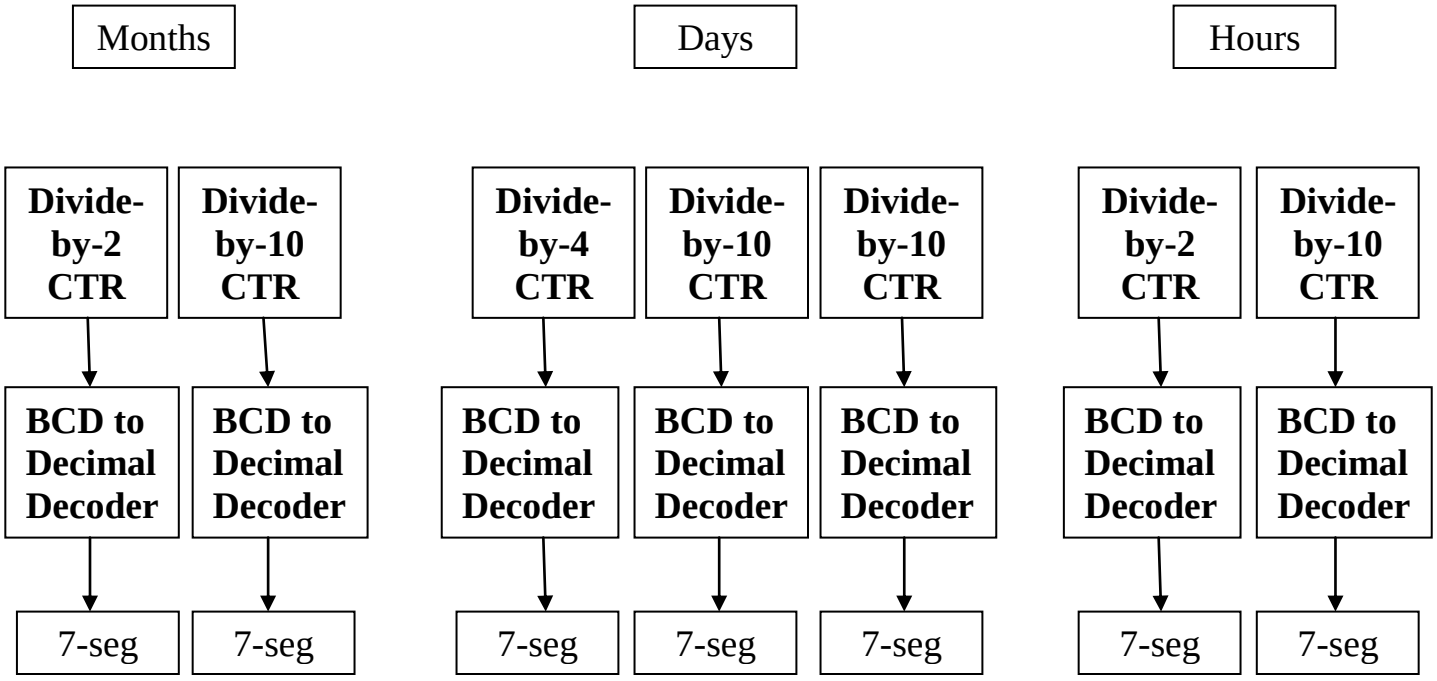
## 3) Extend the diagram to include seconds.




## 4) Put a picture of your hardware connection.

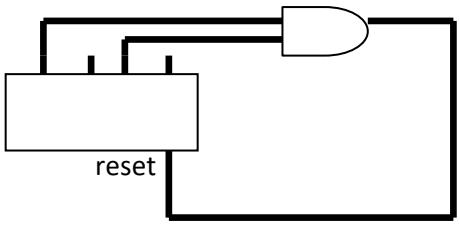


**5) Use divide by n counter to sketch 12hrs digital clock with months.**

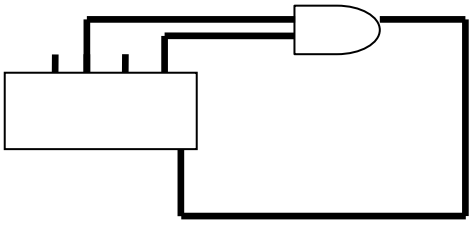



**6) Draw the connection of counter for divide by (10-5-6-15).**

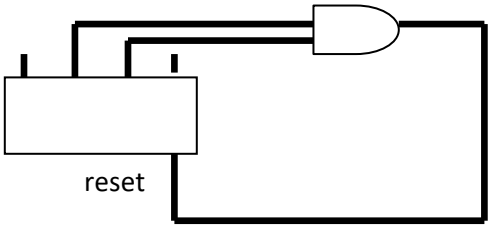
**Counter (divide-by-10)**




**Counter (divide-by-5)**



## Counter (divide-by-6)




## Counter (divide-by-6)