



Menoufia University

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Electrical Engineering Dept. Diploma .Eng. Jan.2014

Microcontroller in Power & Network Systems 3 Hours

* يسمح باستخدام المراجع-المذكرات-الكتب-الحاسبات الشخصية

* Use PIC18F877

1. [10 M]

- (a). Write a Comparison between Microprocessor & Microcontroller
(b). Discuss the Microcontroller Core Features

2. [10 M]

Draw H.W. Connection PC and microcontroller
For burning a program.

* For the following Questions (3,4,5,6) Write Microcontroller Programs

*For each Program draw a suitable H.W. connection

*Using a suitable Displays and Sensors.....,etc:

3. [20 M]

Display the Time: Seconds, Minutes , and Hours

4. [20 M]

Two Cross-roads(A & B), design a traffic-lights according to :

- A timing (Green=60 S., Yellow=10 S , Red=40 S) , and
B timing (Green=30 S., Yellow=10 S , Red=70 S)

5. [20 M]

A Garage has a Capacity of 200 Cars maximum:

- Cars enter through Gate A, and out through Gate B
- Display the numbers of Cars in the Garage instantaneously.
- Gives Sound Alarm if 90% of the Garage is completed
- Shuts the gate A if the Garage is Full

6. [20 M]

A cross-roads with a train (two ways):

suppose the train speed is 90 Km/Hr. maximum

Suggest ,and Design a complete control system using suitable
(traffic lights, sound alarms, gates, sensors.....,etc)
