## Chapter 3. Processor Unit

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Basic Programmable Logic Controllers, ECONMT-142 fall
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## *Chapter 3        Processor Unit*

1  **The processor is often referred to as the** <u>*Central Processing Unit / CPU*</u> **of the programmable controller.**

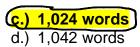2  **Briefly describe *volatile memory*.**

Answer:

A volatile memory is one that loses its stored information when power is removed.

3  **Briefly describe *nonvolatile memory*.**

Answer:

A non-volatile memory can retain stored information when power is removed,

4  **1K of memory is actually**

a.) 1,000 words                    **c.) 1,024 words**
b.) 1,010 words                    d.) 1,042 words

5  **Calculate the actual number of words in an 8K memory?** <u>Word size</u>

Answer

It is important to know the word size

8-bit words with an 8K word capacity = 8 X 8 x 1024 = 65536.

16-bit words with an 8K word capacity = 16 x 8 1024 = 131,072.

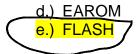**6   The most common type of volatile memory is:**

a.) PROM                                    c.) EEPROM
b.) EAROM                                   **d.) RAM**

**7   Which of the following are types of nonvolatile memory?**

**a.) EEPROM**                              d.) EAROM
**b.) PROM**                                **e.) FLASH**
c.) RAM

**8   List the two broad categories of memory (not volatile and nonvolatile).**

Answer:

1. User memory.

2. Storage memory.

**9   List the two types of programming devices.**

Answer:

1. hand-held

2. computer

**10   What is meant by the term *Reverse Video*?**

Answer:

The reverse video indicates which contacts and coils have power flow. Here contacts and coils are either intensified or displayed

**11   What is a *watchdog timer*?**

Answer:

The watchdog timer is preset to an amount of time that is slightly longer than the scan time would be under normal conditions. At the start of each scan, the watchdog timer is turned ON and starts to accumulate time. If the program is correct, the program scan will be completed before the time set on the watchdog timer, and at the end of each scan, the The watchdog timer is reset to 0. If, for some reason, the program scan is not completed in the allotted time, indicating that there is a problem with the program, the watchdog timer will time out, which puts the processor into a faulted condition.

**12 What special precautions should be taken with lithium batteries?**

<mark>Answer:</mark>

Extra care must be exercised when disposing off batteries since they are classified as hazardous waste. Special care must be taken with **lithium batteries** because they may explode when exposed to or dropped into, water.

13 When a PLC is first turned *ON*, it will run a self-diagnostic or self-check test.

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14 Describe the four steps of a typical PLC processor scan.

<mark>Answer:</mark>

1. Determine the status of the input devices (ON or OFF).

2. Read and solve the logic of the program (ladder logic).

3. Update the output devices (turn ON or OFF).

4. Evaluate communications and housekeeping procedures.

15 The actual scan time, or time it takes the PLC to complete a four-step scan, decreases as the number of program words increases.

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