ENI713 Electronics1
Digital Electronics

ثانوية التكنولوجيا التطبيقية
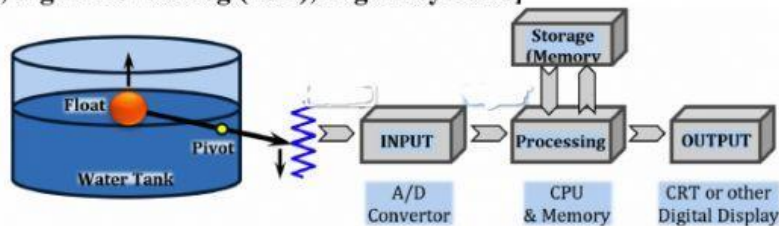**Applied Technology High School**

Academic year 2020/21
Trimester 1

Q1) Identify the analog and the digital system by writing the type (Analog/ Digital) of the system beside its description. The first one is a solved example.

System	Type
Motor Speed Controller	Analog
Metal Detection System	
Light Dimmer	
High temperature alarm	
Oil pressure switch	

Q2) Identify the analog and the digital signals by writing the type (Analog/ Digital) of the signal beside its description.

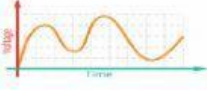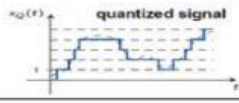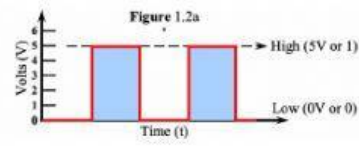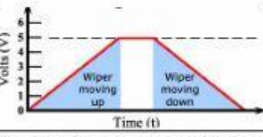| System	Type
Volume control on a radio	
Speed of a roller coaster	
Light switch	
Dimmer switch	
Water temperature	
Music on a CD	

Q3) Copy the word from word bank to its correct place in the paragraph.
[analog-to-digital (A/D), CPU (central processing unit), analog, numbers, variable resistance, digital-to- analog (D/A), Digital systems]

The .... system above is simple and efficient. However, if more information is needed about the water level, a digital system could be used. ....are used when data must be stored, used for calculations, or displayed. The input to the system is still a .... , but an .... converter is used to convert resistance to...................... The .... can then manipulate the data as required.

Q4) Identify the Analog and the Digital signals. Type Analog or Digital next to the signal.

Signal	Signal Type

quantized signal	
Figure 1.2a	
System where voltages or currents are continuous between values	
System where voltages or currents are discrete	

Q5) Compare between the number systems by completing the missing entries in the table below. Use the same examples for other number systems

Number system	Base	Start with	Ends With	Representation	Examples				
Decimal	10	0	9	9_{10}	10	2_{10}	9	11	13_{10}
Binary									
Octal									
Hexadecimal									

Q6)

  o Complete the Decimal Positional Weight Chart (PWC) to find the weight of each digit in the number 73456_{10}

Position	5	4	3	2	1	0
Weight	10^5	10^4	10^3	10^2	10^1	10^0
Positional value		10000			10	
Place the number						6
Weighted value of the number					50	

  o **What is the Least significant digit? LSD = …………**
  o **What is the most significant digit?   MSD = …………**
  o **What is the positional value of the digit 5 in the number 325?**
      ……………
  o **What is the positional value of the digit 6 in the number 160?**
      ……………
  o **What is the positional value of the digit 0 in the number 160?**
      …………..