Virginia CTE

Principles of Technology 2 (9812)

UNIT 8: MOMENTUM PT2.1	1 **Define linear momentum.** PT2.1.1
	3 **Define the law of conservation of momentum.** PT2.1.3
	2 **Define angular momentum.** PT2.1.2
	4 **Predict the relationship of impulse to change in momentum.** PT2.1.4
	5 **Research examples of how momentum affects mechanical and fluid systems.** PT2.1.5
UNIT 9: WAVES and VIBRATIONS PT2.2	1 **Explain wave motion.** PT2.2.1
	2 **Describe how waves transmit (move) energy.** PT2.2.2
	3 **Identify the characteristics that are used to describe a wave.** PT2.2.3
	4 **Demonstrate how waves transmit energy.** PT2.2.4
	5 **Distinguish between longitudinal and transverse waves.** PT2.2.5
	6 **Research workplace applications where waves and vibrations are found.** PT2.2.6
UNIT 10: ENERGY CONVERTERS PT2.3	1 **Define energy converter.** PT2.3.1
	2 **Describe what is meant by the efficiency of an energy converter.** PT2.3.2
	3 **Research converters that change mechanical energy to fluid energy or electrical energy.** PT2.3.3
	4 **Research converters that change fluid energy to mechanical energy.** PT2.3.4
	5 **Research converters that change electrical to mechanical or thermal energy.** PT2.3.5
	6 **Research converters that change thermal to mechanical, fluid, or electrical energy.** PT2.3.6
	7 **Construct a system that demonstrates energy conversion.** PT2.3.7

UNIT 11: TRANSDUCERS PT2.4	1	**Distinguish between a transducer and a sensor.** PT2.4.1
	2	**Distinguish between an energy converter and a transducer.** PT2.4.2
	3	**Identify transducers that change mechanical signals into electrical signals.** PT2.4.3
	4	**Identify transducers that change fluid signals into mechanical or electrical signals.** PT2.4.4
	5	**Identify transducers that change electrical signals into mechanical or thermal information.** PT2.4.5
	6	**Identify transducers that change thermal signals into mechanical, fluid, or electrical information.** PT2.4.6
UNIT 12: RADIATION PT2.5	1	**Define radiant energy.** PT2.5.1
	2	**Define electromagnetic radiation.** PT2.5.2
	3	**Define nuclear radiation.** PT2.5.3
	4	**Explain physical relativity phenomena that occur at low speeds and that occur as the speed of light is approached.** PT2.5.4
	5	**Research workplace applications where technicians measure or control radiation.** PT2.5.5
	6	**Explain physical phenomena at the quantum-mechanical level.** PT2.5.6
UNIT 13: LIGHT and OPTICAL SYSTEMS PT2.6	1	**Describe how light can be represented by light rays.** PT2.6.1
	2	**Describe how light can be represented by waves.** PT2.6.2
	3	**Identify the characteristics of laser light.** PT2.6.3
	4	**Identify several optical systems that “process” light.** PT2.6.4
	5	**Research workplace applications where technicians measure and control light.** PT2.6.5
	6	**Demonstrate how sound can be transmitted by light.** PT2.6.6
UNIT 14: TIME CONSTANTS PT2.7	1	**Define the term time constant.** PT2.7.1
	2	**Distinguish between uniform and nonuniform change.** PT2.7.2

3 **Research systems where time constants are needed to describe system behavior.** PT2.7.3

4 **Define three time constants.** PT2.7.4

5 **Research examples of time constants in mechanical, fluid, electrical, and thermal energy systems.** PT2.7.5

6 **Research workplace applications where technicians measure and control time constants.** PT2.7.6