

GAMING AND VENDING TECHNICIAN (GVT)

The following is a listing of the major categories and items considered necessary to be included in a course of study directed towards the education of workers needed in the gaming and vending repair industry.

The Gaming and Vending Technician will be required to properly perform the following:

- Money Handling
- Electrical Fundamentals
- Basic Electronics Concepts
- Computer Hardware, Networking, and Display Technologies
- Safety Precautions and Protection

Understand safe working practices for:

- Electrical safety

Certification examination questions and skill demonstrations (when required) are based on the topical outline provided in the ITEMS LIST. The specific COMPETENCIES are derived from the ITEMS LIST.

There are 5 general categories of required knowledge and skills. The ITEM LISTING defines the particular content areas in which the certification candidate must demonstrate proficiency.

GAMING AND VENDING TECHNICIAN (GVT)

MAJOR CATEGORIES:

1.0 MONEY HANDLING

2.0 ELECTRICAL FUNDAMENTALS

3.0 BASIC ELECTRONICS CONCEPTS

4.0 COMPUTER HARDWARE, NETWORKING, AND DISPLAY TECHNOLOGIES

5.0 SAFETY PRECAUTIONS AND PROTECTION



1.0 MONEY HANDLING

- 1.1 Describe Coin Acceptor Operation
- 1.2 Explain Coin Acceptor denomination conversions
- 1.3 Describe Bill Acceptor operation
- 1.4 Describe methods of bill validation
- 1.5 Explain Bill travel
- 1.6 Explain Bill storage
- 1.7 Describe Ticket Acceptance
- 1.8 Explain hopper operation

2.0 ELECTRICAL FUNDAMENTALS

- 2.1 Describe atomic structure, the components of the atom, charges
- 2.2 Describe the importance of atomic structure to electrical technology
- 2.3 Identify the following electrical components, their symbols and their usages:
 - 2.3.1 Resistors
 - 2.3.2 Insulators
 - 2.3.3 Conductors
 - 2.3.4 Switches
 - 2.3.5 Fuses
 - 2.3.6 Circuit Breakers
 - 2.3.7 Batteries
 - 2.3.8 Coils
 - 2.3.9 Transformers
- 2.4 Describe the different types of switches
- 2.5 Explain what a micro switch is and its usage
- 2.6 Identify the differences between a Solenoid coil and a Relay coil
- 2.7 Identify the types of transformers and uses
- 2.8 Summarize Ohms Law
- 2.9 Describe the following electronic measurements:
 - 2.9.1 Voltage
 - 2.9.2 Current
 - 2.9.3 Resistance
- 2.10 Describe the basic Series circuit
- 2.11 Describe the basic Parallel circuit
- 2.12 Calculate current, voltage or resistance using Ohms Law in a Series Circuit
- 2.13 Explain multi-meter construction, components and usage
- 2.14 Describe how to make a proper Ohms reading
- 2.15 Describe the difference between a Continuity reading and an Ohm reading
- 2.16 Describe how to make a proper DC and AC voltage reading
- 2.17 Describe how to make a proper DC and AC amp reading
- 2.18 Describe the two basic crimpers used on connectors

3.0 BASIC ELECTRONICS CONCEPTS

- 3.1 Identify the following electronic components and their usage
 - 3.1.1 Capacitor
 - 3.1.2 Resistor
 - 3.1.3 Semi-conductors
- 3.2 Describe the different types and the values assigned to capacitors
- 3.3 Identify a load resistor in a circuit
- 3.4 Identify a voltage divider circuit
- 3.5 Identify a pull up resistor

- 3.6 Identify a dropping resistor
- 3.7 Describe the characteristics of a semi conductor
- 3.8 Define the values of saturation for the two type semi conductors
- 3.9 Describe the function of the following components, their terminals and polarities
 - 3.9.1 Diodes
 - 3.9.2 LEDs
 - 3.9.3 Zener
 - 3.9.4 Transistor
 - 3.9.5 Darlington
 - 3.9.6 Diac
 - 3.9.7 SCR
 - 3.9.8 IC Voltage regulator
 - 3.9.9 Op Amp
 - 3.9.10 Full wave rectifier
- 3.10 List the different types of Logic Gates and their predominant input signals
- 3.11 List the logic levels used
- 3.12 Summarize IC chip power up configurations
- 3.13 Explain how to determine leg configuration of an IC chip
- 3.14 Define Flip Flop
- 3.15 Define the operation and characteristics of a R/S and D Flip Flop
- 3.16 Explain the different packaging used for multiple components

4.0 COMPUTER HARDWARE, NETWORKING, AND DISPLAY TECHNOLOGIES

- 4.1 Describe physical characteristics and useful properties of USB connectors
- 4.2 Describe the two RJ45 cables
- 4.3 Perform Binary to Decimal conversions
- 4.4 Perform Binary to Hex conversions
- 4.5 Perform Hex to Funny Hex conversions
- 4.6 Perform Hex to Decimal conversions
- 4.7 Name and explain the functions of the internal sections of the microprocessor
- 4.8 Name and explain some of the predominant external lines of the microprocessor
- 4.9 Name and describe memory components and devices currently used
- 4.10 Perform power supply voltage test
- 4.11 Describe basic power supply circuit
- 4.12 Describe the causes and effects of static electricity when working with computer hardware
- 4.13 Describe the causes and effects of electromagnetic interference
- 4.14 Describe the purpose of heat sinks, heat transfer paste and fans
- 4.15 Explain and draw a diagram of the following Network Topologies:
 - 4.15.1 Star
 - 4.15.2 Token Ring
 - 4.15.3 Mesh
- 4.16 Describe monitor operation
- 4.17 Describe flat screen display
- 4.18 Explain touch screen operation

5.0 SAFETY PRECAUTIONS AND PROTECTION

- 5.1 Describe personal safety precautions for working with electric and electronic devices
- 5.2 Recognize, evaluate, and control electrical hazards
- 5.3 Identify the hazards of electric shock
- 5.4 Describe the human physiological reactions electrical shock causes

- 5.5 List various degrees of current the human body can tolerate
- 5.6 Explain proper lockout/tagout procedures
- 5.7 Explain proper eye protection procedures
- 5.8 Explain proper use of the hard hat
- 5.9 Explain proper foot protection techniques
- 5.10 Explain proper use of protective clothing
- 5.11 Evaluate emergency action plans
- 5.12 Describe the different classes (A, B, C, & D) of fires and the type of extinguishers used to fight them
- 5.13 List applicable governing fire safety regulations NEC (National Electrical Code) and NFPA 70 (National Fire Protection Association)
- 5.14 Identify hazards associated with walking and working surfaces
- 5.15 Identify hazards through Material Safety Data Sheet
- 5.16 Explain proper materials handling
- 5.17 Explain the concept of First Aid and its particular importance to workers in electric and electronic fields
- 5.18 Explain precautions needed in the area of electronic safety
- 5.19 Understand Industrial Hygiene
- 5.20 Demonstrate the ability to administer CPR and first aid for electrical shock and burns
- 5.21 Identify blood-borne pathogens and precautions used
- 5.22 Explain the Occupational Safety and Health Act
- 5.23 Identify the value of Safety and Health
- 5.24 Understand his/her rights and responsibilities under OSHA
- 5.25 Demonstrate knowledge of OSHA inspections, citations and penalties