GAMING AND VENDING TECHNICIAN - GVT
Competency Requirements

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

The Gaming and Vending Technician will be required to properly understand safe working practices for:

- Electrical safety

Certification examination questions and skill demonstrations (when required) are based on the curriculum and syllabus provided in the specific COMPETENCIES LIST.

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

1.0 MONEY HANDLING

- 1.1 Coin Handling
  - 1.1.1 Describe Coin Acceptor Operation
  - 1.1.2 Explain Coin Acceptor denomination conversions
- 1.2 Bill Handling
  - 1.2.1 Describe Bill Acceptor operation
  - 1.2.2 Describe methods of bill validation
  - 1.2.3 Explain Bill travel
  - 1.2.4 Explain Bill storage
- 1.3 Ticket
  - 1.3.1 Describe Ticket Acceptance
- 1.4 Money Dispensing
  - 1.4.1 Explain hopper operation

2.0 ELECTRICAL FUNDAMENTALS

- 2.1 Electrical Terms
  - 2.1.1 Describe atomic structure, the components of the atom, and charges
    - 2.1.1.1 Describe the importance to electrical technology
  - 2.1.2 Identify the following electrical components, their symbols and their usages:
    - 2.1.2.1 Resistors
    - 2.1.2.2 Insulators
    - 2.1.2.3 Conductors
    - 2.1.2.4 Switches
      - 2.1.2.4.1 Describe the different types of switches
      - 2.1.2.4.2 Explain what a micro switch is and its usage
    - 2.1.2.5 Fuses
    - 2.1.2.6 Circuit Breakers
    - 2.1.2.7 Batteries
    - 2.1.2.8 Coils
      - 2.1.2.8.1 Identify the differences between a Solenoid coil and a Relay coil
    - 2.1.2.9 Transformers
      - 2.1.2.9.1 Identify the types and usage
- 2.2 Ohms Law

- 2.2.1 Summarize Ohms Law
- 2.2.2 Describe the following electronic measurements:
  - 2.2.2.1 Voltage
  - 2.2.2.2 Current
  - 2.2.2.3 Resistance
- 2.2.3 Describe the basic Series circuit
- 2.2.4 Describe the basic Parallel circuit
- 2.2.5 Calculate current, voltage or resistance using Ohms Law in a Series Circuit

2.3 Multimeter
- 2.3.1 Explain multi-meter construction, components and usage
- 2.3.2 Describe how to make a proper Ohms reading
- 2.3.3 Describe the difference between a Continuity reading and an Ohm reading
- 2.3.4 Describe how to make a proper DC and AC voltage reading
- 2.3.5 Describe how to make a proper DC and AC amp reading

2.4 Connectors
- 2.4.1 Describe the two basic crimpers used on connectors

3.0 BASIC ELECTRONICS CONCEPTS

3.1 Electronic Components
- 3.1.1 Identify the following electronic components and their usage
  - 3.1.1.1 Capacitor
    - 3.1.1.1.1 Describe the different types and the values assigned to them
  - 3.1.1.2 Resistor
    - 3.1.1.2.1 Identify a load resistor in a circuit
    - 3.1.1.2.2 Identify a voltage divider circuit
    - 3.1.1.2.3 Identify a pull up resistor
    - 3.1.1.2.4 Identify a dropping resistor
  - 3.1.1.3 Semi-conductors
    - 3.1.1.3.1 Describe the characteristics of a semi conductor
    - 3.1.1.3.2 Define the values of saturation for the two type semi conductors
    - 3.1.1.3.3 Describe the function of the following components, their terminals and polarities:
      - 3.1.1.3.3.1 Diodes
      - 3.1.1.3.3.2 LEDs
      - 3.1.1.3.3.3 Zener
      - 3.1.1.3.3.4 Transistor
      - 3.1.1.3.3.5 Darlington
      - 3.1.1.3.3.6 Diac
      - 3.1.1.3.3.7 SCR
      - 3.1.1.3.3.8 IC Voltage regulator
      - 3.1.1.3.3.9 Op Amp
      - 3.1.1.3.3.10 Full wave rectifier
  - 3.1.1.4 Digital Concepts
    - 3.1.1.4.1 List the different types of Logic Gates and their predominant input signals
    - 3.1.1.4.2 List the logic levels used
    - 3.1.1.4.3 Summarize IC chip power up configurations
    - 3.1.1.4.4 Explain how to determine leg configuration of an IC chip
    - 3.1.1.4.5 Define Flip Flop
    - 3.1.1.4.6 Define the operation and characteristics of a R/S and D Flip Flop
    - 3.1.1.4.7 Explain the different packaging used for multiple components

4.0 COMPUTER HARDWARE, NETWORKING, AND DISPLAY TECHNOLOGIES

4.1 Cabling
- 4.1.1 Describe physical characteristics and useful properties of USB connectors
- 4.1.2 Describe the two RJ45 cables

- 4.2 Computer codes
  - 4.2.1 Perform Binary to Decimal conversions
  - 4.2.2 Perform Binary to Hex conversions
  - 4.2.3 Perform Hex to Funny Hex conversions
  - 4.2.4 Perform Hex to Decimal conversions
- 4.3 Processor
  - 4.3.1 Name and explain the functions of the internal sections of the microprocessor
  - 4.3.2 Name and explain some of the predominant external lines of the microprocessor
- 4.4 Memory
  - 4.4.1 Name and describe some memory components and devices used
- 4.5 Power Supplies
  - 4.5.1 Perform voltage test
  - 4.5.2 Describe basic power supply circuit
- 4.6 Computer concerns
  - 4.6.1 Describe the causes and effects of static electricity
  - 4.6.2 Describe the causes and effects of electromagnetic interference
  - 4.6.3 Describe the purpose of heat sinks, heat transfer paste and fans
- 4.7 Networking Technologies
  - 4.7.1 Explain and draw a diagram of the following Network Topologies:
    - 4.7.1.1 Star
    - 4.7.1.2 Token Ring
    - 4.7.1.3 Mesh
- 4.8 Displays
  - 4.8.1 Describe monitor operation
  - 4.8.2 Describe flat screen display
  - 4.8.3 Explain touch screen operation

5.0 SAFETY PRECAUTIONS AND PROTECTION

- 5.1 Electrical Safety
  - 5.1.1 Describe personal safety precautions for working with electric and electronic devices
  - 5.1.2 Recognize, evaluate, and control electrical hazards
  - 5.1.3 Identify the hazards of electric shock
  - 5.1.4 Describe the human physiological reactions electrical shock causes
  - 5.1.5 List various degrees of current the human body can tolerate
  - 5.1.6 Explain proper lockout/tagout procedures
- 5.2 Personal Protective Equipment
  - 5.2.1 Explain proper eye protection procedures
  - 5.2.2 Explain proper use of the hard hat
  - 5.2.3 Explain proper foot protection techniques
  - 5.2.4 Explain proper use of protective clothing
- 5.3 Fire Safety
  - 5.3.1 Evaluate emergency action plans
  - 5.3.2 Describe the different classes (A, B, C, D and K) of fires and the type of extinguishers used to fight them
  - 5.3.3 List applicable governing fire safety regulations such as NEC® (National Electrical Code) and NFPA 70 (National Fire Protection Association)
- 5.4 Fall Protection
  - 5.4.1 Identify hazards associated with walking and working surfaces
- 5.5 Hazard Communication
  - 5.5.1 Identify hazards through Material Safety Data Sheet
  - 5.5.2 Use proper materials handling
- 5.6 Emergency response
  - 5.6.1 Explain the concept of First Aid and its particular importance to workers in electric and electronic fields
  - 5.6.2 Explain precautions needed in the area of electronic safety
  - 5.6.3 Describe the following First Aid characteristics:

5.6.3.1 Understand Industrial Hygiene
5.6.3.2 Demonstrate the ability to administer CPR and first aid for electrical shock and burns
5.6.3.3 Identify blood-borne pathogens and precautions used

5.7 Occupational Safety and Health Act
5.7.1 Identify the value of Safety and Health
5.7.2 Understand his/her rights and responsibilities under OSHA
5.7.3 Demonstrate knowledge of OSHA inspections, citations and penalties

End of Gaming and Vending Technician Competencies Listings (with 5 major Categories)

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