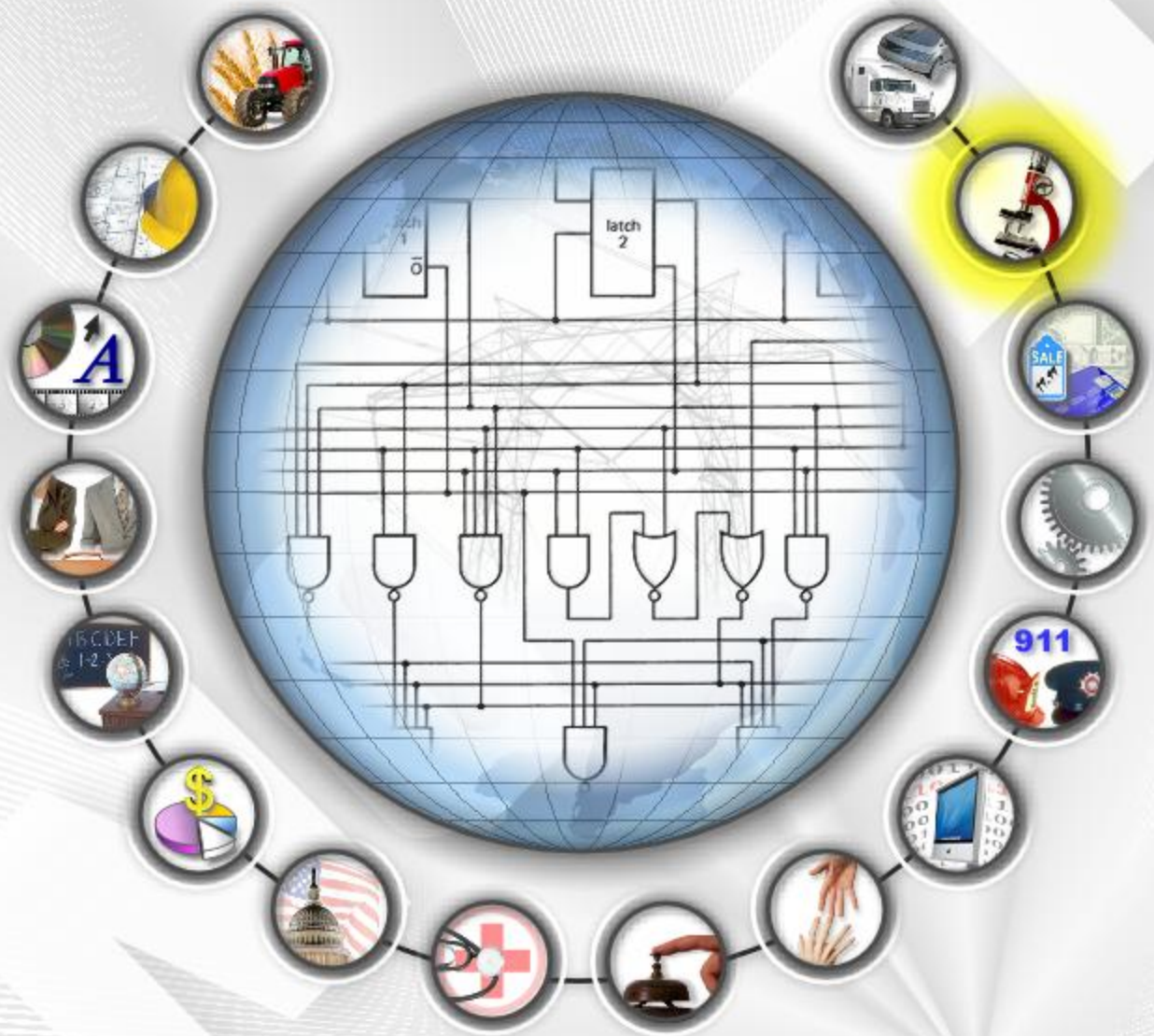




Job Ready Assessment Blueprint

Electronics Technology



Test Code: 4035 / Version: 01

“Measuring What Matters”

Specific Competencies and Skills continued:

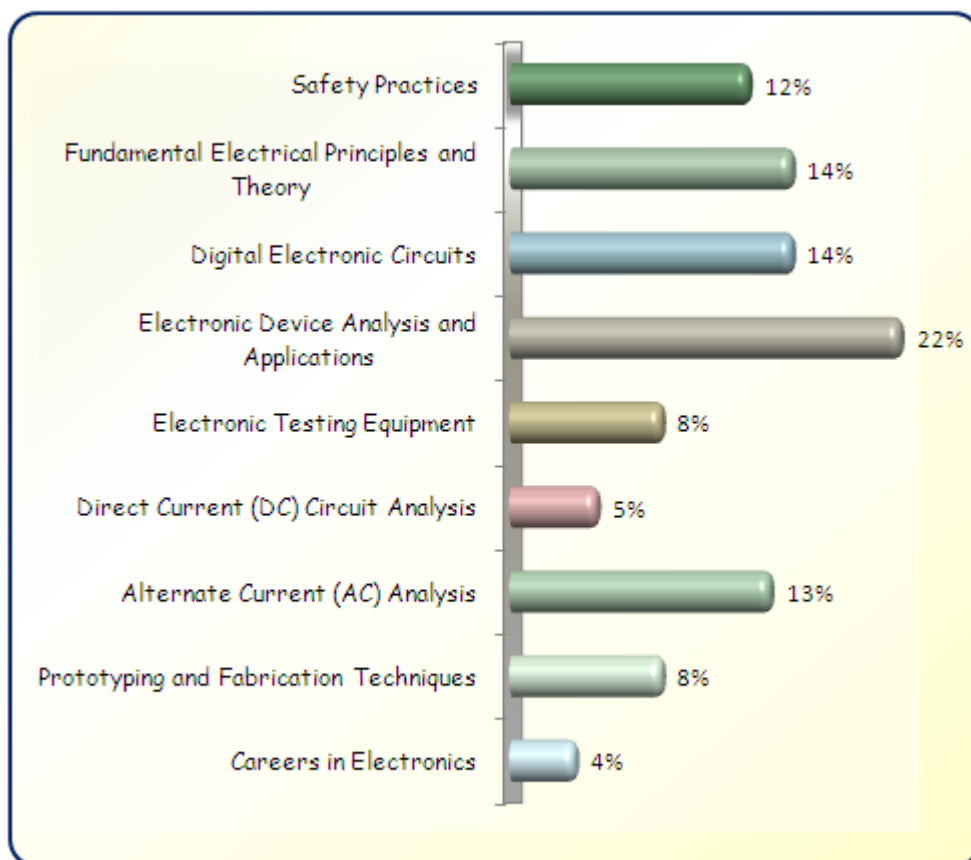
Prototyping and Fabrication Techniques

- Layout components on a printed circuit board according to a schematic
- Demonstrate knowledge of proper soldering and de-soldering techniques
- Repair or replace a component or foil on a printed circuit board
- Prototype electrical circuits using schematics and breadboards

Careers in Electronics

- Identify available careers in electronics technology (i.e., Nanotechnology, Industrial Automation, Biomedical Electronics, Robotics, etc.)
- Describe entry level requirements for various electronics technology careers



Written Assessment:**Administration Time:** 3 hours**Number of Questions:** 155**Areas Covered:**

Sample Questions:

To ensure that a capacitor has been fully discharged, the technician should

- A. notice the spark at the tip of the shorting probe
- B. check for residual voltage with a voltmeter
- C. re-energize the equipment to see if it works
- D. use a voltage sensor at the top of the capacitor



A battery produces electricity by

- A. thermo energy
- B. proton potential
- C. electron potential
- D. chemical reaction

An 8 bit DAC has a resolution of

- A. 8
- B. 80
- C. 255
- D. 1024

What does an FET do?

- A. makes the silicon on PCBs
- B. amplifies weak signals
- C. maintains a stable voltage
- D. works in parallel with a capacitor

The phase relationship between voltage and current in a purely resistive circuit is

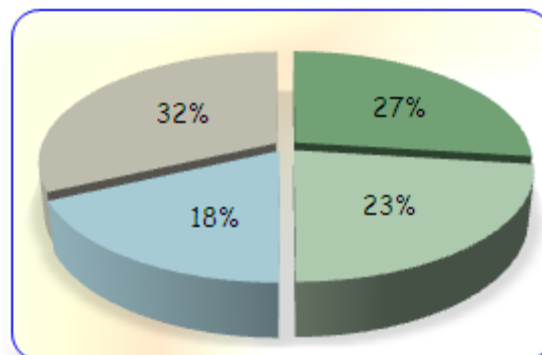
- A. 0 degrees
- B. 90 degrees
- C. 180 degrees
- D. 270 degrees

Performance Assessment:

Administration Time: 3 hours, 15 minutes

Number of Jobs: 4

Areas Covered:



27% De-Soldering and Soldering

Safety glasses, selection of components, de-soldering, soldering (re-soldering), component identification, quality of soldering, work area clean-up, and time to complete Job 1.

23% Power Supply Construction and Circuit Analysis

Safety glasses, selection of components, use of tools and equipment, quality of construction, circuit measurements, capacitors installed to X and Y, measure voltages for X and Y with DMM, and time to complete Job 2.

18% Op Amp Construction and Analysis

Safety glasses, selection of components, use of tools and equipment, measure output voltage with DMM, display input versus output on oscilloscope, gain measurement, and time to complete Job 3.

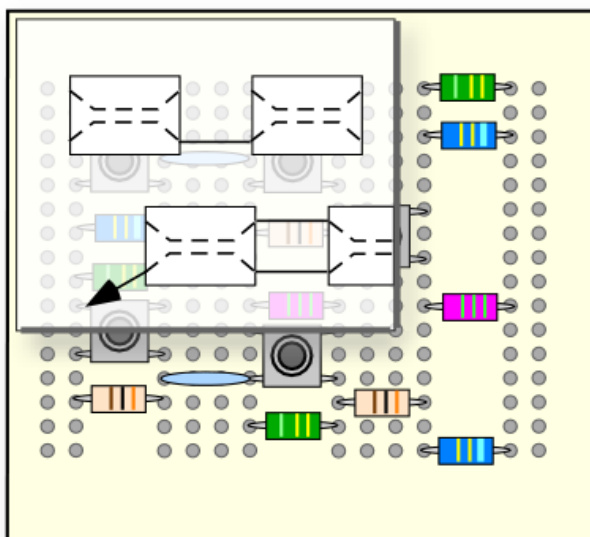
32% Design and Build a Combinational Logic Circuit

Develop Boolean expression from truth table, simplification of Boolean expression, draw the gate logic diagram, build/test the designed circuit, time to complete Task 1 of Job 4, time to complete Task 2 of Job 4, time to complete Task 3 of Job 4, and time to complete Task 4 of Job 4.

Sample Job: Power Supply Construction/Circuit Analysis

Maximum Time: 45 minutes

Participant Activity: The participant will refer to the diagram provided and build the circuit, choose proper components from the selection given, measure and record the full RMS Secondary Voltage, measure the DC voltage and record the correct polarity from X to the ground and from Y to the ground.



The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!

