

Skills, Knowledge, and Abilities Test (SKAT - Electrical) Information Sheet

The following job classifications require SKAT – Electrical:

Apprentice Electrician

Apprentice Rotating Equipment Repairman

Electrical Test Sections

Basic Electricity

- Basic electrical theory and measurement including:
 - Symbols and formulas
 - Direct current – series and parallel
 - Wiring diagrams
 - One-line diagrams
 - Transformers
 - Troubleshooting
 - Alternating Current

Tools and Precision Measurement Equipment

- Basic tools
 - Types of tools and their applications
- Precision measuring tools
 - Standard and Vernier scaled

Hand Tools and Mechanical Devices

- Identify basic hand tools

Rule reading and measurement computation

- Reading standard measurements
- Making measurement calculations

Please note: All tests are timed

No calculators are allowed

LENGTH: Approximately 2.5 hours

ELECTRICAL SAMPLE QUESTIONS

Listed below are sample questions that reflect the type of questions that you may see on the SKAT Electrical test. These questions consist of electrical knowledge including basic electricity (symbols and formulas), direct current, alternating current, wiring diagrams, symbols, and transformers.

Sample 1

A charged atom is known as a (n)

- a. ion
- b. proton
- c. neutron
- d. quark

The correct answer for Sample 1 is “a”. Therefore alternative “a” has been circled.

Sample 2

An atom having fewer electrons than protons will carry a **positive** charge.

The correct answer for Sample 2 is “positive” so this answer has been written in the blank.

Sample 3

Materials which permit the flow of electrons are referred to as

- a. resistors
- b. conductors
- c. transmitters
- d. switches

Sample 4

The speed of electron movement is considered to be the same as the speed of **light**.

For Sample 3, the correct answer is “b”. Therefore, alternative “b” has been circled. The correct answer for Sample 4 is “light” so this answer has been written in the blank.

TOOLS AND PRECISION MEASUREMENT SAMPLE QUESTIONS

Listed below are sample questions that reflect the type of questions that you may see on the SKAT Mechanical test. These questions consist of instrument knowledge including basic tool types/ applications and standard and vernier scaled precision measuring tools.

Sample 1

Pliers are classified by their:

- a. length and width
- b. cutting and non-cutting ability
- c. handle and nose shapes
- d. nose shape and intended work

For sample 1, the correct answer is “d”. Therefore, alternative “d” has been circled.

Sample 2

Files which have one row of teeth are called **single** –cut files.

The correct answer for Sample 2 is “single” so this answer has been written in the blank.

Sample 3

A good tool in electrical work for tightening bushings and locknuts and gripping conduit is a pair of

- a. long nose pliers
- b. diagonal pliers
- c. locking joint pliers
- d. electrician’s pliers

Sample 4

When measurements are made with a rule, hold the rule with its edge against the surface of the object.

For Sample 3, the correct answer is “c”. Therefore, alternative “c” has been circled. The correct answer for Sample 4 is “edge” so this answer has been written in the blank.

HAND TOOLS AND MECHANICAL DEVICES SAMPLE QUESTIONS

The sample questions below consist of basic hand tools and devices used in construction, maintenance, and repair activities. There are pictures of various hand tools and mechanical devices in this test. You are to *identify the correct name or appropriate use* for each tool or device shown.

For example, look at the picture below. The tool in the picture is a *hand saw*. Therefore, alternative "C" has been darkened as the correct answer.



Sample 1

This is a:

- (A) hack saw
- (B) miter saw
- (C) a hand saw
- (D) rip saw
- (E) none of the above

Sample 2



This is a:

- (A) tire hammer
- (B) sledge hammer
- (C) rock-breaking hammer
- (D) ball pein hammer
- (E) none of the above

Sample 3



This tool is used to:

- (A) smooth surfaces
- (B) measure distances
- (C) draw straight lines
- (D) level a surface
- (E) none of the above

For Sample 2, the correct answer is “sledge hammer”. Therefore, alternative “B” has been darkened. The correct answer for Sample 3 is “D.”

RULE READING AND MEASUREMENT SAMPLE QUESTIONS

These sample questions consist of reading a standard measuring tape or rule and to make measurement calculations.

In these sample questions, you will indicate the measurement of a rule segment, add and subtract measurements given in feet and inches, and add and subtract measurements indicated by segments on a rule.

You must convert all answers into feet (') and inches (").

REMEMBER

12" = 1' (12 inches equal 1 foot)

24" = 2' (24 inches equal 2 feet)

36" = 3' (36 inches equal 3 feet)

48" = 4' (48 inches equal 4 feet)

60" = 5' (60 inches equal 5 feet)

In PART1, there are pictures of segments from a standard measuring rule. The numbers on the segments indicate inches. You are to determine the measurement indicated by the arrow, which points to a specific location on the rule segment.

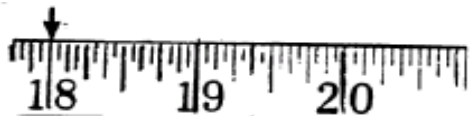
Look at Sample 1 below. The arrow is pointing to a location on the rule indicating 14". After converting this measurement to feet and inches, the correct answer for Sample 1 is alternative "C". Since 14" is equal to 1' and 2", the measure for Sample 1 is 1' 2".

Sample 1



- A. 1' 0"
- B. 1' 1"
- Ⓒ. 1' 2"
- D. 14' 0"
- E. None of the above

Sample 2



- A. 1' 6"
- B. 1' 7"
- C. 1' 8"
- D. 1' 9"
- E. None of the above

The correct answer for sample 2 is "A". Since 18" is equal to 1' and 6", the measure for Sample 2 is 1' 6", which is alternative "A".

In PART 2, there are numerical measurements given in feet and inches. You are to add or subtract the measurements as indicated and convert the sum to feet and inches.

Look at Sample 3 below. Adding the two measurements results in a total length of 5' 9", which is alternative "B".

Sample 3

$$\begin{array}{r} + 3' 6'' \\ \hline 2' 3'' \end{array}$$

- A. 5' 8"
- B. 5' 9"
- C. 5' 10"
- D. 5' 11"
- E. None of the above

Sample 4

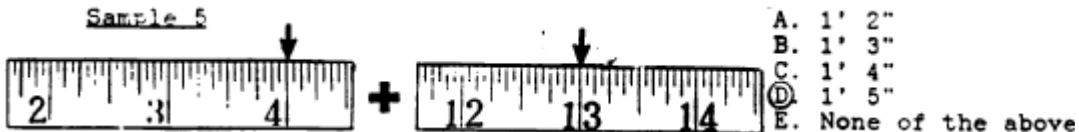
$$\begin{array}{r} + 4' 2'' \\ \hline 3' 7'' \end{array}$$

- A. 7' 9"
- B. 7' 10"
- C. 7' 11"
- D. 8' 0"
- E. None of the above

Adding the two measurements given in Sample 4 results in a total length of 7' 9". Therefore, alternative "A" is the correct answer.

In PART 3, there are pairs of picture segments from a standard measuring rule. You are to add or subtract the measurements indicated by arrows pointing to specific locations on the segments.

Look at Sample 5 below. Adding the two measurements indicated by the arrows results in a total length of 17". Converting this measure to feet and inches results in a total measurement of 1' 5". Therefore, alternative "D" is the correct answer.



Adding the two measurements indicated by the arrows results in a total length of 16". Converting this measure to feet and inches results in a total measurement of 1' 4" which is alternative "C".

Test Reference Materials and Sources For Apprentice Electrician SKAT Test

Basic Electricity

- Education Direct, Inc. (Bill Politis), 770-594-2281 (mention employment test for Georgia Power Company Transmission Maintenance). Allow enough time to study the courses listed below. Each book requires about 10 hours of study. Each book costs \$37.00 plus 5% for shipping. Total cost \$ 155.40

Stock Number	Description
A0104	Elec. Components and Ohm's Law
A0105	Basic Circuit Arrangements
A0106	Electrical Language and Hardware
A0201	Alternating Current

- Ugly's Electrical Reference - order from either www.Amazon.com, www.BAMM.com, www.barnesandnoble.com, or local book store.

Precision Measuring Equipment

- Ziegler Tools Inc. 404-346-5666 for Starret training material, Catalog no. 500-53218.