



Description of Test (DOT)

MULTIPATH TEST KNOWLEDGE BATTERY

Description of Test Guide

This **DOT** Guide is designed to help you prepare for the Multipath Test (MPT) Knowledge Battery. The information is being made available to you now so that you can review the material at a more leisurely pace. There is also specific information about the factors that are evaluated on the test and what you can do to prepare for it.

WHAT IS MEASURED BY THE MPT KNOWLEDGE BATTERY

The MPT Knowledge Battery consists of five subtests: Basic Electricity, Basic Electronics & Telephony, Transmission, Basic Telephony and Basic Computer Knowledge.

Basic Electricity Subtest:

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| Electricity Fundamentals | Knowledge of basic electronic components, terminology associated with electrical and electronic circuits, and characteristics of conductors and insulators. This includes knowledge of common measurement instruments. |
| Ohm's Law | Knowledge of Ohm's law describing the relationship between voltage, current, and resistance in an electrical circuit. This includes knowledge of how to calculate current, voltage, and resistance as well as power in a circuit. |
| DC Power | Knowledge of DC power plant, including positive and negative side and direction of current flow. |
| AC Voltage and Current | Knowledge of electrical signals that change direction / change polarity in a repeating pattern over time, including the concept of AC voltage supply. |
| Electrical Safety | Knowledge of safe practices in working with electricity including grounding and insulation. This includes knowledge of how to prevent electric shock, electrocution, fires, and explosions as well as emergency actions to take in dealing with these hazards. |

Electronics and Telephony Subtest:

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| Schematic Diagrams | Ability to read and understand simplified illustrations of actual circuits, including symbols that represent the components and values of a circuit (e.g., resistor, switch, volt, fuse, and ground symbols). This includes the ability to read and understand |
| Transmission Media | Knowledge of transmission lines (coaxial cable, wireless, fiber optic cables, metallic facilities, etc.) and transmission line testing. |
| Call Completion | Knowledge of how local and long distance calls are completed, including knowledge of the basic switching hierarchy used by telephone companies. |
| Voice and Local Loop | Knowledge of the make-up and limitations of the loop and the technology that is enhancing the functionality of the local loop, including xDSL. Additionally, this includes knowledge of voice frequency range, voice interpretation, and how and why the local |
| Data on the Network | Knowledge of modulation and demodulation and how an analog modem functions. |
| Emerging Technologies | Knowledge of circuit and packet switching, X.25 transmission, frame relay, asynchronous transfer mode (ATM), and routing. |

Transmission Subtest:

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| Digital Communications Systems | Knowledge of the basic elements of the digital systems (source, transmitter, channel, receiver, destination). This includes knowledge of modulation, signal type, bandwidth, spectrum, and filters. |
| Digital Modulation | Knowledge of the T1 carrier system, digital switching, and digital video transmission, compression techniques, and bit error rate (BER). This includes knowledge of digital modulation, including forms of frequency shift keying (FSK), forms of phase shift |
| Digital Multiplexing | Knowledge of how multiplexing is used to separate different users of the channel / transmission medium or to allow more than one user over the same physical medium. This includes knowledge of time division multiplexing (TDM), wavelength and dense waveleng |
| Transmission Basics | Knowledge of db's and dBm's. This includes knowledge of the sources of noise, how noise affects communications, and industry standard noise measurements. |
| Pulse Modulation | Knowledge of pulse modulation (e.g., commanding, analog forms of pulse modulation, delta modulation, the coding / decoding of PCM signals, encoding techniques, pulse modulation frequency spectra). |
| Analog Multiplexing | Knowledge of how multiplexing is used to separate different users of the channel / transmission medium or to allow more than one user over the same physical medium. This includes knowledge of frequency division multiplexing (FDM). |

Basic Telephony Subtest:

This includes knowledge related to how telephone service works (to provide call completion), including a basic understanding of the facilities, equipment and network topology. This also includes knowledge of telecommunications terminology.

Basic Computer Knowledge Subtest:

This includes basic knowledge of software functions and computer and network navigation.

Frequently Asked Questions (FAQs)

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| Who needs to take the MPT Knowledge Battery? | Any person who wishes to be considered for a position with Qwest in the Technical job family. |
| How is the test administered? | On a personal computer, which utilizes a standard computer keyboard, mouse and internet web browser. |
| How are the questions formatted? | All questions are in multiple-choice format. Each question has 4 possible answers to choose from. The candidate simply uses the computer mouse to click on their response. |
| How many items are on the test? | Basic Electricity has 62 items and a 50 minute time limit. Electronics & Telephony has 38 items and a 30 minute time limit. Transmission has 31 items and a 25 minute time limit. Basic Telephony has 16 items and an 11 minute time limit. Basic Computer has 7 items and a 6 minute time limit. |
| How much time is allowed to take the entire test? | Two hours and 2 minutes. |
| What should I bring to the test and can I use a calculator? | You should bring nothing to the test. You will not be allowed to use a calculator. Where relevant, you will be provided with scratch paper for taking notes and making computations. |
| How is my score determined? | There are three scores computed from the MPT Knowledge Battery. They are all based upon the number of questions you answer correctly. Each of the three scores is based upon a different set of items. |
| Am I penalized for guessing an answer? | If you are not sure of the answer to an item, making your best guess is a good strategy. You are not penalized for incorrect responses. Your score is based upon correct responses. |
| Will I receive feedback on my score? | You will be given a Candidate Feedback Report which provides you information about your Qualification status in all job families. |
| What happens if I don't achieve a Qualifying score? | You may attempt the test again after six months. |

FAQ's Continued

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| <p>What if I need an accommodation to take the test</p> | <p>Qwest provides accommodations in testing conditions to qualified applicants with disabilities during the administration of pre-employment screens, to the extent such accommodations are reasonable, consistent with the nature and purpose of the examination, and necessitated by the applicant's disability. Qwest's objective is to provide effective and necessary accommodations to qualified applicants as defined under the Americans with Disabilities Act, without substantially altering the nature of the screening process. Each applicant's request for test accommodations is evaluated on a case-by-case basis. A test accommodation request and supporting documentation must be submitted in order to determine whether an accommodation may be provided. After you apply for a job, staffing office personnel will contact you to arrange for any required pre-employment screens. At that time you must inform the staffing office that you will require a test accommodation. You will then be informed of the information and documentation that is required to process your request.</p> |
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Resources for preparing for the MPT Knowledge Battery

1. If you are currently a Qwest employee, you can take classes through Pathways. For more information, see the Pathways website at <http://www.qwesttuition.com>
2. If you are currently a Qwest employee, courses may be available through Network Training. For more information, see the NTD website at <http://ntd>
3. Find information on the web. Use a search engine such as www.google.com, type in the term you need to learn more about, such as "Ohm's Law" or "digital modulation". The search will likely produce websites with helpful information.
4. Read a book. Find text books that are used by instructors that teach courses on the topic on which you need to strengthen your knowledge. Technical colleges and universities will often publish the text books used for courses on their websites.
5. Talk to your supervisor about how you can develop your knowledge and skills.

PLEASE NOTE: The purpose of this guide is to provide information which will assist all candidates in their performance during the MPT Knowledge Battery. Your performance is determined by many things such as your education, experiences and skills.