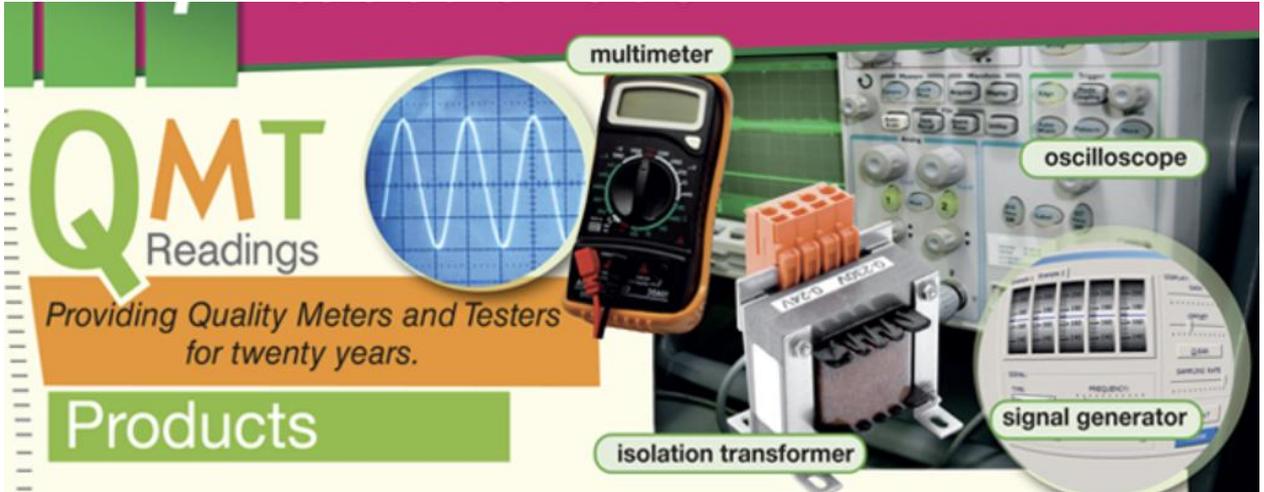


UNIT 5: Testers**READING**

1. Look at the image and reply to these questions.

- 1) What are some kinds of testers and meters?
- 2) What meter can measure various different values?



Read the text.

PRODUCTS**Meters**

QMT offers a wide range of high-quality meters that are used in different electronic measurements. Our best-selling multimeter, which is designed for both professionals and students, can measure voltage, resistance and current with great precision. Inductance meters and capacitance meters, which are commonly used in electronic testing, are also available. Both digital and analog meters are currently kept in stock to meet different technical needs.

Scopes

Our new oscilloscope, which has been recently developed by our engineers, provides higher levels of accuracy during measurements. Customer feedback, which is carefully analysed by QMT, plays an important role in the development of new products. As a result, spectrum analyzers and logic analyzers have recently been added to our product range.

Other Testing Products

We also supply a variety of testing devices that are frequently used in electronic laboratories. These include transistor testers, frequency counters and the ever-popular signal generators, which are essential for testing and analysing electronic signals.

Safety Devices

Employees and equipment can be protected by using an isolation transformer, which reduces electrical risks in the workplace. Customers who purchase one of these devices can also benefit from a special promotion: buy one product and get the second one at half price.

2. Read the text again. Are the following sentences true or false? Justify your answers with information from the text.

1) The multimeter can measure only voltage and resistance. T / F

Justification: _____

2) Both digital and analog meters are available at QMT. T / F

Justification: _____

3) The oscilloscope was developed after analysing customer feedback. T / F

Justification: _____

4) Signal generators are rarely used in electronic testing. T / F

Justification: _____

5) Spectrum analyzers and logic analyzers have recently been added to the product range. T / F

Justification: _____

6) Isolation transformers are used to increase electrical risks in the workplace. T / F

Justification: _____

7) Some of the devices mentioned are commonly used in electronic laboratories. T / F

Justification: _____

8) Customers can buy two safety devices and pay full price for both. T / F

Justification: _____

3. Find words or expressions in the text that mean the following.

1) A device used to measure voltage, resistance and current.

2) The quality of being exact or correct when measuring something.

3) Machines or tools used to check or measure electronic components.

4) Electrical dangers or possible accidents related to electricity.

VOCABULARY**4. Read the sentences and choose the correct words or phrases.**

- 1) The technician used the **frequency counter / analog meter** to track the speed of signal cycles.
- 2) A(n) **spectrum analyzer / isolation transformer** keeps power input and output separate.
- 3) A(n) **signal generator / analog meter** uses a moving needle to display measurements.
- 4) The man used a(n) **signal generator / inductance meter** to test the analog equipment.
- 5) The woman used an **isolation transformer / inductance meter** to get information about coils.
- 6) A **spectrum analyzer / frequency counter** shows voltage versus frequency.

5. Fill in the blanks with the correct words and phrases from the word bank.**Word Bank**

logic analyzer — oscilloscope — capacitance meter — transistor tester — multimeter

- 1) The technician used the _____ because she needed to measure both voltage and resistance.
- 2) The transistor wasn't working correctly, so the technician used a(n) _____.
- 3) The technician wanted to measure capacitance, so he fetched the _____.
- 4) The technician used a(n) _____ to create a graph showing voltage versus time.
- 5) A(n) _____ show signals in a digital circuit.

LISTENING**6. Listen and complete the text.****QMT Readings: Providing Quality Meters and Testers for twenty years.****Products****Meters**

QMT offers high-quality meters. Our best-selling multimeter can measure voltage, resistance, and current! We also sell **1)** _____ meters, capacitance meters, and have both digital and **2)** _____ meters in stock.

Scopes

Our new oscilloscope provides increased levels of **3)** _____. QMT listens to our clients. As a result, we recently added spectrum analyzers and logic analyzers to our **4)** _____.

Other Testing Products

We **5)** _____ transistor testers, frequency counters, and the ever-popular signal generators.

Safety Devices

Keep your employees and equipment **6)** _____ with an isolation transformer. Take **7)** _____ of our buy one get one half off promotion.

Our **8)** _____ reps are waiting for your call.

7. Listen to a conversation between a sales rep and an electronics tech. Choose the correct answers.

1) What is the electronic tech's main concern?

- A quality of items
- B availability
- C shipping time
- D cost of items

2) What will the electronics tech most likely do next?

- A return an item
- B place an order
- C ask for more information
- D go to the store

8. Listen again and answer the questions.

- 1) **What discount is currently offered on frequency counters?**
 - a) ten percent
 - b) fifteen percent
 - c) twenty percent
 - d) twenty-five percent

- 2) **What range does the electronics tech need for the counters?**
 - a) 0.1 Hz to 3.7 GHz
 - b) 0.01 Hz to 3.7 GHz
 - c) 0.01 Hz to 3.7 MHz
 - d) 1 Hz to 3.7 GHz

- 3) **How much does one frequency counter cost?**
 - a) \$350
 - b) \$375
 - c) \$700
 - d) \$750

- 4) **What does the electronics tech ask about after hearing the total price?**
 - a) warranty
 - b) shipping
 - c) delivery time
 - d) product availability

GRAMMAR -**Relative clauses (which / that)**

Relative clauses give extra information about a noun.
They usually describe a thing or a device.

In technical English we often use which or that.

Structure

noun + **which / that** + verb

Examples

*An oscilloscope is a device **which shows** voltage versus time.*

*A signal generator is a machine **that produces** electronic signals.*

*A spectrum analyzer is a tool **which displays** voltage versus frequency.*

Key idea

We use **which** or **that** to add information about **things or devices**.

device + **which / that** + information

9. Complete the sentences with that or which.

- 1) A multimeter is a device _____ measures voltage, resistance and current.
- 2) An oscilloscope is an instrument _____ shows voltage versus time.
- 3) A signal generator is a machine _____ produces electronic signals.
- 4) A spectrum analyzer is a tool _____ displays voltage versus frequency.
- 5) An isolation transformer is a device _____ protects equipment from electrical risks.

10. Combine the sentences using that or which.

Example:

A multimeter measures voltage. It is very useful for technicians.

→ *A multimeter is a device that measures voltage.*

- 6) A logic analyzer shows signals in a digital circuit. It is used in electronics laboratories.

- 7) A transistor tester checks transistors. It helps technicians detect faults.

- 8) A capacitance meter measures capacitance. It is used to test electronic components.

11. Write your own sentences.

Write three sentences describing electronic equipment using that or which.

Example:

An oscilloscope is a device that shows voltage versus time.

1 _____

2 _____

3 _____