Jules' Workshop

Standard

Unit 18 – Answers

Q1 What is a test point?

A test point is a designated point on a circuit that is used to make a measurement or inject test signals.

Q2 Why is the input impedance of a multimeter important?

The meter must have a high input impedance, usually greater than 1 MΩ, to keep the meter load to a minimum.

Q3 How do you measure current in a circuit?

The meter must be in series with the circuit under test.

Q4 What advantage would an analogue multimeter have over a digital multimeter?

Observing a needle move may be advantageous in certain measuring situations.

Q5 What does VSWR stand for?

Voltage Standing Wave Ratio

Q6 Why is a Wheatstone bridge used in an SWR meter?

A Wheatstone bridge is an electrical circuit used to measure an unknown electrical resistance by balancing two legs of a bridge circuit, one leg of which includes the unknown component. The primary benefit of the circuit is its ability to provide extremely accurate measurements.

Q7 Name some uses for an oscilloscope.

View waveforms

Measure signals.

Q8 Name two ways to measure the frequency of a tank circuit.

Use a grid dip oscillator or inject a signal from a signal generator and observe the results on an oscilloscope.

Q9 Name some uses for a waveform generator.

Inject a signal to a circuit under test.

Simulate a waveform.

Q10 What is the primary output of a spectrum analyser?

A spectrum analyser measures the magnitude of an input signal versus frequency within the full frequency range of the instrument. The primary use is to measure the power of the spectrum of known and unknown signals.

Q11 Where could you use a TDR in the radio shack?

Looking for breaks in long coax lines.

Q12 Name two uses for a VNA.

Measuring SWR

Test a filter.

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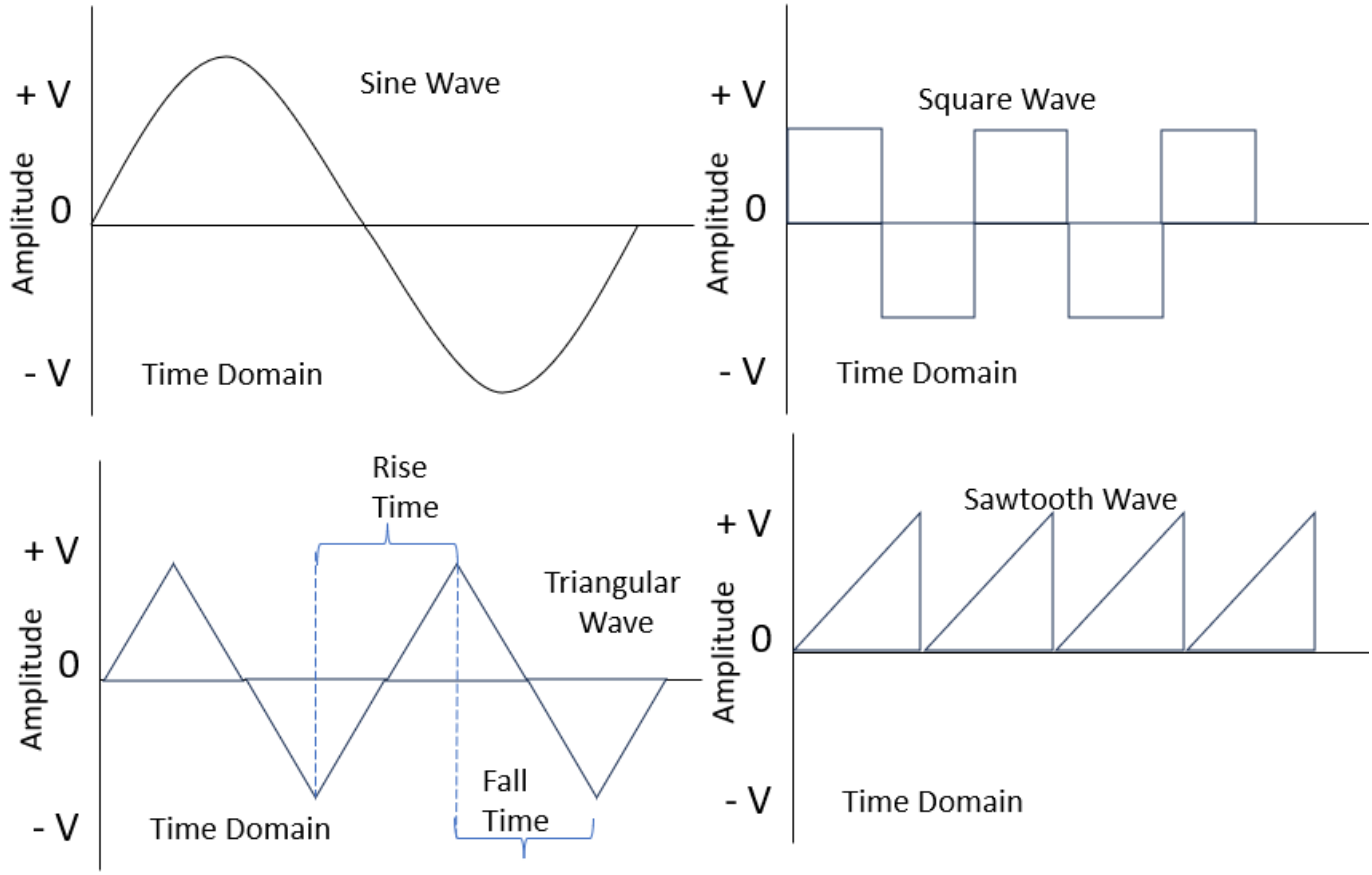
View the Smith chart for an antenna.

Q13 What are the four basic wave forms hams could encounter?

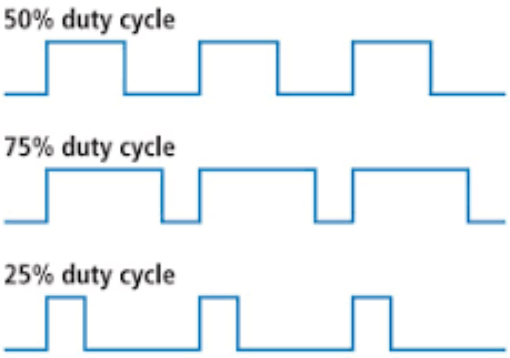


Q14 Explain rise and fall time in a waveform.

The rise and fall time of a signal describes the transition of the signal from a low to a high level (or vice versa).

Q15 Explain duty cycle in a waveform.

The ratio of the time a waveform is present during the period of the wave form.



Q16 List two operator errors the user should consider when making a measurement.

- **Selection of the incorrect instrument. If in doubt, ask but this error will be reduced with experience.**
- **Parallax error. This occurs on needle indicator equipment where the operator views the needle at an angle and not directly above.**
- **Failure to Calibrate**

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