

Chapter 16 questions:

1- Answer (T) rue or (F)alse:

Mechanical waves can not propagate in vacuum while electromagnetic wave can not propagate in mediums.

Transverse waves are faster than longitudinal waves.

When a transverse wave propagates along a string, the particles in the string move perpendicular to the direction of propagation.

The speed of mechanical waves depends only on the property of the medium through which the wave propagates.

The speed of a wave on a string depends on the mass density of the string

The speed of a wave on a string depends on the amplitude of the wave.

When a string is reflected off a rigid boundary (e.g. a wall) the reflected wave is inverted.

When a string is reflected off a free boundary (e.g. a smooth massless ring) the reflected wave is inverted.

The speed of a sinusoidal wave ( $v$ ) equals the angular wavenumber ( $k$ ) divided by the angular frequency ( $\omega$ ).

2- Two strings made of the same material, one thick and the other thin, are connected to form one long string. A wave travels along the string and passes the point where the two strings are connected. Which of the following change(s) at that point:

- A. frequency
- B. period
- C. propagation speed
- D. wavelength